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# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 1, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:20 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 30.03 | 762.8 | 66.5 | 18.6 | 64 | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | |
| Nemours | ..... | ..... | 30.08 | 763.9 | 57.9 | 14.4 | 60 | WNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Kesxuche. |
| Algiers | ..... | ..... | 30.06 | 763.5 | 57.6 | 14.2 | 65 | WSW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Tourillere. |
| La Calle | ..... | ..... | 30.08 | 763.9 | 55.9 | 13.3 | 82 | W | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0.354 | 9.0 | Cloudy | Foufrede. |
| Tunis | ..... | ..... | 30.05 | 763.2 | 54.9 | 12.7 | 59 | NNW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.232 | 5.9 | Rainy | Jacques. |
| Sfax | ..... | ..... | 30.11 | 764.7 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 30.02 | 762.4 | 51.8 | 11.0 | 19 | S | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Herbin. |
| Tebessa | ..... | ..... | 30.11 | 764.8 | 44.1 | 6.7 | 49 | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.048 | 1.1 | Very cloudy | Watrin. |
| Geriville | ..... | ..... | 29.97 | 761.3 | 45.5 | 7.5 | 97 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Brugnlaux. |
| Laghouat | ..... | ..... | 30.06 | 763.5 | 52.2 | 11.2 | 30 | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bertrand. |
| Biskra | ..... | ..... | 30.10 | 764.4 | 65.3 | 18.5 | 27 | NNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.80 | 744.3 | 29.86 | 758.5 | 43.3 | 6.3 | 70 | SW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stoair. |
| Cracow, I. R. Observatory | 29.11 | 739.3 | 29.91 | 759.6 | 31.6 | — 0.2 | 98 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.020 | 0.5 | ..... | Dr. Wiersbiski |
| Eperies | 28.86 | 733.6 | 29.78 | 756.5 | 38.1 | 3.4 | 73 | N | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.63 | 727.3 | 29.91 | 759.7 | 41.0 | 5.0 | 68 | S | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.30 | 718.7 | 29.72 | 755.0 | 48.7 | 9.3 | 51 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.065 | 1.65 | Raining | Prof. A. Gottschling. |
| Kremsmünster | 28.62 | 726.9 | 30.02 | 762.4 | 34.0 | 1.1 | 68 | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.055 | 1.4 | ..... | Prof. C. Wagner. |
| Lemberg | 28.75 | 730.3 | 29.78 | 756.3 | 32.7 | 0.4 | 90 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.303 | 7.7 | ..... | Dr. T. Stanecki. |
| Pola | 29.80 | 757.0 | 29.92 | 759.9 | 47.7 | 8.7 | 72 | WNW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0.260 | 6.6 | ..... | I.R.Hydrographic Office. |
| Szathmar | 29.31 | 744.5 | 29.79 | 756.5 | 42.8 | 6.0 | 85 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.331 | 8.4 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 29.80 | 757.0 | 29.91 | 759.6 | 48.2 | 9.0 | 80 | W | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0 | 0 | Fair | P. Busin. |
| Vienna | 29.19 | 741.5 | 29.89 | 759.3 | 36.9 | 2.7 | 63 | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Royal Observatory |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. E. de Cae. |
| Maeseyck | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Pierrot |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:8, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the co-operation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instru-m'tal error and temperature. Inches. | Millimeters. | Reduced to sea-level. Inches. | Millimeters. | Temperature of the Air. Fahrenheit. | Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Velocity. Miles per hour. | Meters per second. | Force 0—10. | Clouds. Amount. Up'er 0—10. | Low'r 0—10. | Direction. Upper. From— | Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.55 | 758.2 | 29.95 | 760.7 | 38.6 | 3.7 | | SW | 10 | 4.5 | | | 3 | | | 0 | 0 | Blue sky | W. Boswell. |
| Ardrossan | 30.02 | 762.5 | 30.03 | 762.8 | | | | | | | | | | | | | | | William McNeil. |
| Armagh, Observatory | | | 30.11 | 764.8 | 42.9 | 6.1 | | SW | 7 | 3.1 | | | 3 | | | | | D. clouds | S. Call. |
| Bidston, (Liverpool Obs.) | | | 30.09 | 764.3 | 40.7 | 4.8 | | WNW | 9 | 4.0 | | | 1 | | | | | Blue sky | John Hartnup. |
| Bolton, (Sharples) | | | 30.06 | 763.5 | 32.8 | 0.4 | | NNW | | | | | 0 | | | | | Foggy | Thomas Mackereth. |
| Bradford, Yorkshire | 29.63 | 752.6 | 30.03 | 762.8 | 42.1 | 5.6 | | NW | | | 1 | | 4 | | | 0.15 | 3.8 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.90 | 759.4 | 29.92 | 760.0 | 80 | 26.7 | | NE | | | 2 | | 3 | | | | | D. clouds | Pvt. G. Surgener, A. H. C. |
| Cambridge, Observatory | | | 30.04 | 763.0 | 46.9 | 8.3 | | N | | | 1 | | 7 | | | | | D. clouds | H. Todd. |
| Cardington | | | 30.01 | 762.2 | 47.0 | 8.3 | | N | | | 1 | | 3 | | | | | D. clouds | John McLaren. |
| Chatham, School M. E. | 29.92 | 760.0 | 30.06 | 763.5 | 41.1 | 5.1 | | Calm | | | 0 | | 9 | | | | | Overcast | Corpl. Daly, R. E. |
| Dartmoor | 28.43 | 722.1 | 29.94 | 760.5 | 39.0 | 3.9 | | NW | | | 3 | | 5 | | | | | D. clouds | Alexander Watt. |
| Donaghadee | 30.03 | 762.8 | 30.07 | 763.8 | 44 | 6.7 | | WNW | | | 2 | | 0 | | | | | Blue sky | J. Mac Gowan. |
| Dover | 30.01 | 762.2 | 30.03 | 762.8 | 42 | 5.6 | | N | | | 4 | | 7 | | | | | Misty | J. Costello. |
| Falmouth, Observatory | 29.90 | 759.4 | 30.14 | 765.5 | 45.0 | 7.2 | | NNE | | | 1 | | 10 | | | | | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.46 | 697.5 | 29.78 | 756.4 | 80.4 | 26.9 | | E | | | 2 | | 0 | | | | | Blue sky | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.62 | 752.3 | 29.85 | 758.2 | 88 | 31.1 | | E | | | 1 | | 3 | | | | | D. clouds | |
| Galway, Queen's College | | | 30.08 | 764.0 | 45 | 7.2 | | SSW | | | 1 | | 9 | | | | | Overcast | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.00 | 762.0 | 30.05 | 763.3 | 58.2 | 14.6 | | E | | | 2 | | 2 | | | | | Blue sky | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.80 | 756.9 | 30.00 | 762.0 | 41.1 | 5.1 | | WSW | | | 4 | | | | | | | Blue sky | D. G. Maclean. |
| Great Yarmouth | 30.01 | 762.2 | 30.02 | 762.5 | 42 | 5.6 | | N | | | 2 | | 4 | | | | | Misty | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.87 | 758.7 | 30.05 | 763.3 | 42.4 | 5.8 | | NE | | | 1 | | 10 | | | | | Overcast | The Staff, for G. B. Airy |
| Guernsey | 29.84 | 757.9 | 30.06 | 763.5 | 42 | 5.6 | | NNW | | | 1 | | 8 | | | | | D. clouds | Dr. S. E. Hoskins, F.R.S. |
| Helston | 30.05 | 763.3 | 30.18 | 766.6 | 46 | 7.8 | | N | | | 2 | | 4ck | | | 0.7 | 18. | Fine | M. P. Moyle. |
| Holyhead | 30.05 | 763.3 | 30.11 | 764.8 | 42 | 5.6 | | NNW | | | 2 | | 2 | | | | | Blue sky | John Tilston. |
| Jersey | 29.79 | 756.7 | 30.09 | 764.3 | 42.2 | 5.7 | | NNW | | | 2 | | 10 | | | | | Misty | J. Fisher. |
| Kew, Observatory | 30.01 | 762.2 | 30.05 | 763.3 | 44.0 | 6.7 | | N | 8 | 3.6 | | | 8 | | | | | Misty | The Meteorological Of. |
| Leicester, Museum | 29.80 | 756.9 | 30.06 | 763.5 | 44.9 | 7.2 | | NE | | | 1 | | 1 | | | | | D. clouds | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.86 | 758.4 | 29.94 | 760.5 | 63 | 17.2 | | NE | | | 2 | | 8k | | | | | D. clouds | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.77 | 756.1 | 29.86 | 758.4 | 42 | 5.6 | | WSW | | | 2 | | 1 | | | | | ¼ clouded | W. D. Penny. |
| Nassau, (Bahamas) | | | 30.17 | 766.3 | 69.0 | 20.6 | | NE | | | 5 | | 10 | | | | | Overcast | C. S. Duncombe. |
| Nottingham, Observatory | 29.88 | 758.9 | 30.07 | 763.8 | 44.7 | 7.1 | | NNW | | | 2 | | 2k | | NW | 0.046 | 1.22 | Blue sky | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.53 | 750.0 | 30.07 | 763.8 | 44.0 | 6.7 | | NW | | | 3 | | 2 | | | | | Blue sky | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | | | 30.05 | 763.3 | 47 | 8.3 | | NE | | | 1 | | 2 | | | | | Blue sky | H. E. Bellamy. |
| Plymouth | 30.02 | 762.5 | 30.09 | 764.3 | 44.8 | 7.1 | | NNW | | | 2 | | 10 | | | | | Overcast | John Merrifield. |
| Roche's Point | 30.10 | 764.5 | 30.15 | 765.8 | 43 | 6.1 | | NNW | | | 2 | | 2 | | | | | ¼ clouded | W. Kennedy. |
| Saint Ann's Head | 29.95 | 760.7 | 30.12 | 765.0 | 43 | 6.1 | | NNW | | | 1 | | 2 | | | | | | John C. Walker. |
| Sandwick Manse, (Orkneys. | | | 29.78 | 756.4 | 37.1 | 2.8 | | SW | 19 | 8.5 | | | 10 | | | | | Drizzling | Dr. Hoskins. |
| Scutari, Cemetery, (Turkey | | | 29.68 | 753.9 | 63.0 | 17.2 | | ESE | | | 1 | | 10 | | | | | Gloomy | W. H. Lyne. |
| Sheffield | 29.79 | 756.7 | 30.08 | 764.0 | 46.4 | 8.0 | | NW | | | 1 | | 4 | | | 0 | 0 | D. clouds | W. F. Cooper. |
| Silloth Rectory | 30.02 | 762.5 | 30.05 | 763.3 | 47.3 | 8.5 | 81 | NW | | | 5 | | 0 | | | 0 | 0 | Blue sky | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.66 | 753.4 | 30.06 | 763.5 | 43.0 | 6.1 | | W | | | 2 | | 3 | | | | | Misty | Rev. S. J. Perry. |
| Stratfield Turgiss | 29.83 | 757.7 | 30.06 | 763.5 | 44.8 | 7.1 | | N | | | 1 | | 2 | | | | | Blue sky | C. H. Griffith, F.M.S. |
| Thurso | 29.75 | 755.6 | 29.82 | 757.4 | 39 | 3.9 | | SW | | | 3 | | 10 | | | | | Gloomy | John Trotter. |
| Truro, Royal Institution | 30.04 | 763.0 | 30.12 | 765.0 | 49 | 9.4 | | NW | | | 6 | | 6 | | | | | D. clouds | W. Newcombe. |
| Valencia, Observatory | 30.15 | 765.8 | 30.18 | 766.6 | 45.1 | 7.3 | | N | 7 | 3.1 | | | 4 | | | | | D. clouds | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.85 | 758.2 | 29.89 | 759.2 | 73 | 22.8 | 45 | W | 29 | 13.0 | | 10 | 9 | | | 0 | 0 | Fine | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | | | 29.98 | 761.5 | 53.0 | 11.7 | 88 | NW | | | 3 | | 7k | | | 0 | 0 | Cloudy | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | | | 30.04 | 763.0 | 41.8 | 4.4 | | W | | | 2 | | 0 | | | 0 | 0 | Fine | Andrew Gibb. |
| Mauritius, Observatory | 29.77 | 756.1 | 29.96 | 761.0 | 81.0 | 27.2 | 62 | NW | 6.0 | 2.7 | | | 8 | | ESE | 0 | 0 | Cloudy | C. Meldrum. |
| Melbourne, Observatory | 30.08 | 764.0 | 30.17 | 766.3 | 55.0 | 12.8 | 69 | SE | 6 | 2.7 | | | 4 | | W | 0 | 0 | Fine | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | | | 29.67 | 758.7 | 45 | 7.2 | | SW | | | 6 | | 10 | | | 0.2 | 5. | | J. Youngclause. |
| North Unst, (Shetland Is.) | | | 29.50 | 749.3 | 34 | 1.1 | | SW | | | 6 | | 10 | | | | | Raining | Robert Burnet. |

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; Freetown reduced to freezing but not to sea-level. Amount of cloudiness for Holyhead by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day,) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day,) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Sea or swell. Height scale 0-9 | Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. Fawn, N. 35° 54', E. 14° 30' | | | 29.91‡ | 759.7‡ | 61 | 16.1 | | W | | | 2 | | | | | | | D. clouds | Capt. W. J. L. Wharton. |
| Brig Alliance, N 20° 34', W. 37° 06' | | | 30.11‡ | 764.8‡ | 68.5 | 20.3 | | ENE | | | 6 | | 9 | | | | | Showery | Capt. W. Scott. |
| S. S. Amanda, N. 11° 06', E. 64° 10' | | | 29.92‡ | 760.0‡ | 81 | 27.2 | | NE | | | 4 | | 5 | | | | | D. clouds | Capt. B. Boyes. |
| Barque Belle Isle, N. 22° 20', W. 85° 00' | | | 30.17 | 766.3 | 75 | 23.9 | | NE | | | 6 | | 8 | | | 6 | NE | D. clouds | Capt. A. J. Brown. |
| Ship British Commodore, N. 44° 00', W. 29° 25' | | | 30.61 | 777.5 | 53 | 11.7 | | NNE | | | 4 | | 8 | | | 4 | NE | D. clouds | Capt. J. W. Thorne. |
| Barque City of Agra, S. 6° 27', W. 26° 16' | | | 29.94‡ | 760.5‡ | 82 | 27.2 | | E | | | 4 | | 2 | | | | | Blue sky | Capt. Thos. Young. |
| Barque Commewyne, N. 10° 10', W. 55° 40' | | | 29.96‡ | 761.0‡ | 82 | 27.2 | | ENE | | | 5 | | 8 | | | | | D. clouds | Capt. A. Buchan. |
| ——Denbighshire, S. 50° 22', W. 13° 20' | | | 30.20‡ | 767.1‡ | 48 | 8.9 | | N | | | 3 | | 5 | | | | | Showery | Capt. H. Murdoch. |
| Barque Fedalina | | | | | | | | | | | | | | | | | | | Capt. H. L. Fox. |
| Barque Mertole, N. 39° 08' W. 14° 09' | | | 30.03‡ | 762.8‡ | 54.3 | 12.4 | | ENE | | | 7 | | 10 | | | | | Gloomy | Capt. E. W. Turner. |
| S. S. Nizam | | | | | | | | | | | | | | | | | | | Capt. Barlow. |
| S. S. Strathleven, N. 7° 15', E. 83° 07' | | | 29.77‡ | 756.1‡ | 81 | 27.2 | | Calm | | | 0 | | 8 | | | | | D. clouds | Capt. C. W. Pearson. |
| S. S. Wyberton, N. 6° 23', E. 77° 58' | | | 29.84‡ | 757.9‡ | 84 | 28.7 | | W | | | 1 | | 5 | | | | | D. clouds | Capt. W. R. McMontry. |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Reduced to sea-level; corrections applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.29 | 667.8 | 30.01 | 762.2 | 62.2 | 16.8 | 87 | SE | ..... | ..... | 1 | 6cs | ..... | ..... | ..... | 0 | 0 | ..... | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.70 | 754.3 | 29.74 | 755.5 | 33.1 | 0.6 | 90 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | ..... |
| Fanöe | 29.81 | 757.1 | 29.83 | 757.6 | 35.6 | 2.0 | 89 | W | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | Foggy | ..... |
| Godthaab, (Greenland) | 29.40 | 746.8 | 29.45 | 747.9 | 11.1 | —11.6 | 97 | NNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 29.29 | 744.0 | 29.33 | 744.9 | 42.4 | 5.8 | 93 | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | ..... |
| Vestervig | 29.68 | 751.3 | 29.75 | 755.6 | 34.9 | 1.6 | 96 | E | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.51 | 749.4 | 30.06 | 763.4 | 45.7 | 7.6 | 94 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.063 | 1.6 | Covered | Collignon, Director. |
| Amiens, Normal School | 29.80 | 756.8 | 29.91 | 759.7 | 44.2 | 6.8 | 94 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bonvallet, Director. |
| Avignon, Normal School | 29.92 | 759.9 | 30.00 | 761.9 | 58.2 | 11.8 | 46 | NNE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | M. Giraud, Director. |
| Bar-sur-Seine | 29.60 | 749.4 | 30.08 | 764.0 | 41.9 | 5.5 | 77 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | C. Saillard, Director. |
| Beauvais, Normal School | 29.74 | 755.5 | 30.04 | 762.9 | 45.5 | 7.5 | 87 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.17 | 740.8 | 30.09 | 764.2 | 41.9 | 5.5 | 76 | S | ..... | ..... | 2 | ..... | 5 | ..... | S | 0 | 0 | Cloudy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.23 | 742.4 | 30.15 | 765.8 | 46.2 | 7.9 | 89 | N | ..... | ..... | 1 | ..... | 2k | N | N | 0 | 0 | Slightly cl'dy | M. Marlot, Director. |
| Bourges, Normal School | 29.48 | 748.8 | 30.08 | 764.0 | 43.3 | 6.3 | 88 | SW | ..... | ..... | 4 | ..... | 10 | SW | SW | 0 | 0 | Covered | A. Waquet, Director. |
| Brest, Naval Observatory | 29.81 | 757.2 | 30.00 | 763.4 | 50.0 | 10.0 | 66 | N | ..... | ..... | 2 | ..... | 7 | ..... | N | 0.108 | 2.75 | ..... | M. de Rermaree, Director |
| Carcassonne, Normal School | 29.68 | 753.8 | 30.10 | 764.6 | 52.9 | 11.6 | 55 | W | ..... | ..... | 3 | ..... | 5 | NW | NW | 0.16 | 4. | Cloudy | September, Director. |
| Caen, Normal School | 29.97 | 761.2 | 30.04 | 763.1 | 43.5 | 6.4 | 88 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.173 | 4.4 | Covered | M. Lair, Director. |
| Chartres, Normal School | 29.42 | 747.2 | 29.97 | 761.3 | 42.4 | 5.8 | 69 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | W | 0.04 | 1. | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.69 | 754.1 | 30.02 | 762.4 | 43.0 | 6.1 | 85 | SW | ..... | ..... | 2 | ..... | 8 | SW | SW | 0 | 0 | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.58 | 725.9 | 29.95 | 760.7 | 48.7 | 9.3 | 66 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | W | ..... | ..... | Showery | Allnard, Director. |
| Commercy, Normal School | 29.17 | 741.1 | 30.06 | 763.5 | 39.0 | 3.9 | 87 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Dr. Coulet, Director. |
| Commune de Grésque* | 28.84 | 732.6 | 29.98 | 761.6 | 46.9 | 8.3 | 40 | NW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0 | 0 | ½ covered | M. Kina, Director. |
| Grenoble, Normal School | 29.32 | 744.6 | 30.11 | 764.8 | 38.5 | 3.6 | 70 | NNW | ..... | ..... | 1 | ..... | 2cs | ..... | N | 0 | 0 | Slightly cl'dy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.90 | 759.4 | 30.12 | 765.0 | 48.6 | 9.2 | 63 | WNW | ..... | ..... | 1 | ..... | 5 | ..... | NW | 0.197 | 5.0 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.75 | 755.6 | 30.06 | 763.6 | 46.2 | 7.9 | 80 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.030 | 0.75 | Covered | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.16 | 740.6 | 30.14 | 765.5 | 43.3 | 6.3 | 74 | W | ..... | ..... | 2 | ..... | 10 | ..... | NE | 0 | 0 | Lightly cov'd | Baudry, Director. |
| Lorient, Naval Observatory | 30.00 | 761.9 | 30.10 | 764.4 | 49.6 | 9.8 | 73 | NNW | ..... | ..... | 3 | ..... | ..... | NW | SW | 0 | 0 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Mirecourt, Normal School | 28.97 | 735.8 | 30.07 | 763.7 | 38.8 | 3.8 | 80 | NE | ..... | ..... | 1 | ..... | n | ..... | SW | 0 | 0 | ..... | M. Barbier, Director. |
| Nîmes, Normal School | 29.78 | 756.3 | 29.98 | 761.5 | 57.2 | 1.4 | 39 | NW | ..... | ..... | 3 | ..... | 5 | ..... | NW | 0 | 0 | Cloudy | Boyer, Director. |
| Privas, Normal School | 28.90 | 734.0 | 29.99 | 761.8 | 45.7 | 7.6 | 83 | N | ..... | ..... | 1 | ..... | cn | N | N | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 25.68 | 636.9 | ..... | ..... | 36.3 | 2.4 | 93 | W | ..... | ..... | 2 | ..... | ..... | W | ..... | 0 | 0 | Foggy | Allnard, Director. |
| Rochefort, Naval Obs'y | 30.07 | 763.8 | 30.10 | 764.6 | 49.1 | 9.5 | 87 | NNW | ..... | ..... | 1 | ..... | 8 | NNW | NNW | 0 | 0 | ¾ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.93 | 760.3 | 30.02 | 762.5 | 46.8 | 8.2 | 87 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.106 | 2.7 | Covered | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 30.04 | 763.1 | 30.07 | 763.8 | 44.2 | 6.8 | 83 | NNW | ..... | ..... | 2 | ..... | 8 | NW | NW | 0.248 | 7.30 | Very cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.87 | 758.6 | 30.03 | 762.8 | 45.3 | 7.4 | 91 | S | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.024 | 0.6 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.92 | 734.5 | 30.02 | 762.4 | 48.2 | 9 | 61 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Huguet, Director. |
| Versailles Observatory | 29.53 | 750.0 | 30.02 | 762.5 | 44.1 | 6.7 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.004 | 0.10 | Foggy | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.39 | 746.5 | 30.13 | 765.2 | 41.5 | 5.3 | 84 | SE | ..... | ..... | 1 | ..... | 5 | NW | NW | 0 | 0 | Cloudy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.90 | 759.5 | 29.93 | 760.2 | 75.6 | 24.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.20 | 5. | ..... | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 29.44 | 747.8 | 30.07 | 763.7 | 45.0 | 7.2 | 52 | NNE | ..... | ..... | 1 | ..... | 3s | ..... | ..... | 0 | 0 | ..... | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 24.84 | 630.8 | 30.15 | 765.8 | 40.1 | 4.5 | 67 | SW | 16.8 | 7.5 | ..... | ..... | 2 | ..... | W | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.90 | 760.0 | 52.2 | 11.2 | 57 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.74 | 755.5 | ..... | ..... | 45.9 | 7.7 | 90 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.004 | 0.1 | ..... | Marié Davy, Director. |
| Perpignan | 29.95 | 760.7 | 30.06 | 763.4 | 52.9 | 11.6 | 59 | NW | 26.2 | 11.7 | ..... | ..... | 5 | ..... | NW | 0.047 | 1.2 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.41 | 569.1 | ..... | ..... | 30.0 | — 1.1 | ..... | N | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | Gen'l de Nansouty. |
| Toulouse, Observatory | 29.40 | 746.7 | 30.13 | 765.2 | 50.0 | 10.0 | 74 | W | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | M. Mercadier Juller. |
| Tours | 29.85 | 758.1 | 30.04 | 763.1 | 45.0 | 7.6 | 83 | WNW | ..... | ..... | 1 | ..... | 10 | ..... | W | 0.063 | 1.6 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.35 | 771.0 | 30.38 | 771.7 | 33.4 | 0.8 | 80 | N | 9.4 | 4.2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Marc Dechevrens, S. J. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque on the scale 0 to 4 and Brest on the scale 0 to 10; Mirecourt apparently gives cloud direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grésque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1.010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.13 | 739.9 | 29.97 | 761.3 | 37.9 | 3.3 | 82 | SW | | | 3 | | 6 | W | | 0.039 | 1.0 | Snowing | Prof. Dr. Hoh. |
| Berlin | 29.74 | 755.4 | 29.92 | 760.0 | 32.9 | 0.5 | 76 | S | | | 1 | | 7 | | | | | Rain & Snow | Prof. Arndt. |
| Breslau | 29.39 | 746.5 | 29.92 | 759.9 | 28.2 | — 2.1 | 75 | W | | | 2 | | 10 | | | 0.126 | 3.20 | | Royal University Obs'y |
| Carlsruhe | 29.61 | 752.0 | 30.05 | 763.3 | 36.7 | 2.6 | 58 | SW | | | 3 | | 5 | N | | 0 | 0 | | Albert Senx. |
| Cassel | 29.30 | 744.2 | 29.90 | 759.5 | 33.4 | 0.8 | 84 | SW | | | 5 | | 10 | SW | | 0.037 | 0.94 | Snowing | Dr. H. Möhl. |
| Crefeld | 29.79 | 756.6 | 29.95 | 760.7 | 39.2 | 4.0 | 88 | SW | | | 2 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.67 | 753.5 | 30.04 | 763.0 | 36.1 | 2.3 | | WSW | | | 0 | | 10 | | | Inap. | Inap. | | Physical Society. |
| Friedrichshafen | 28.61 | 726.6 | 30.00 | 762.0 | 33.8 | 1.0 | 59 | SW | | | 1 | | 3 | SW | | 0.028 | 0.7 | Snowing | M. Wilhelm. |
| Hamburg | 29.78 | 756.5 | 29.86 | 758.4 | 34.7 | 1.5 | 93 | SW | | | 3 | | 10 | | | 0.031 | 0.8 | Foggy | Captain F. Hegemann. |
| Kiel | 29.82 | 757.4 | 29.84 | 757.8 | 34.3 | 1.3 | 93 | W | | | 2 | | 10 | | | 0.048 | 1.22 | Snowing | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.73 | 755.2 | 29.82 | 757.4 | 33.8 | 1.0 | 74 | SE | | | 1 | | 4 | | | 0.008 | 0.2 | | Prof. E. Luther. |
| Köslin | | | 29.81 | 757.1 | 31.5 | — 0.3 | | S | | | 2 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.52 | 749.7 | 29.95 | 760.8 | 35.2 | 1.8 | 85 | SW | | | 2 | | 10 | | | 0.051 | 1.3 | Snowing | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.75 | 755.6 | 29.80 | 756.8 | 29.7 | — 1.3 | 90 | S | | | 1–2 | | 2k | | | | | Hazy | Skalweit. |
| Neufahrwasser | 29.80 | 756.9 | 29.82 | 757.3 | 34.5 | 1.4 | 83 | Calm | | | 0 | | 10 | | | 0.012 | 0.3 | | A. Lothes. |
| Posen | 29 63 | 752.7 | 29.94 | 760.4 | 29.3 | — 1.5 | 81 | W | | | 2 | | 2 | | | 0.008 | 0.2 | Snowing | Dr. Magener. |
| Strassburg (in Alsace) | 29.53 | 750.1 | 30.10 | 764.6 | 37.8 | 3.2 | 69 | SSW | | | 3 | | 6 | W | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 29.05 | 737.9 | 29.07 | 761.3 | 39.7 | 4.3 | 51 | W | | | 1 | | 4 | W | | 0.026 | 0.7 | Light rain | Prof. Schoder. |
| Treves, (Trier) | | | | | | | | | | | | | | | | | | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.47 | 723.1 | 30.03 | 762.8 | 35.2 | 1.8 | 68 | W | 9 | 4 | | | 8ck | | WNW | 0 | 0 | Clearing | Dr. Van Bebber. |
| Wustrow, Naval School | 29.79 | 756.7 | 29.82 | 757.3 | 30.4 | — 0.9 | 98 | WSW | | | 3 | | 10s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.27 | 743.4 | 29.66 | 753 3 | 61.5 | 16.4 | | SW | | | 1.0 | | | | | | | Covered | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Deesa | 29.30 | 744.1 | 29.77 | 756.1 | 78.7 | 25.9 | 31 | WSW | 8.7 | 3.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.82 | 757.3 | 29.86 | 758.3 | 78.3 | 25.7 | 49 | NW | 27 | 12.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 28.86 | 733.1 | 29.61 | 752.0 | 75.4 | 24.1 | 35 | E | 2.3 | 1.0 | | | 6 | | | 0 | 0 | Cloudy | |
| Belgaum | 27.28 | 693.0 | 29.78 | 756.4 | 83.2 | 28.4 | 61 | W | 15.0 | 6.7 | | | 1 | | | 0 | 0 | | |
| Roorkee | 28.78 | 731.0 | 29.68 | 754.0 | 74.8 | 23.8 | 37 | SW | 2.6 | 1.2 | | | 10 | | | 0 | 0 | Gloomy | |
| Agra | 29.15 | 740.4 | 29.71 | 754.7 | 81.2 | 27.3 | 27 | NE | | | | | 0 | | | 0 | 0 | | |
| Nagpur | 28.71 | 729.3 | 29.74 | 755.4 | 86.6 | 30.3 | 29 | Calm | 3.2 | 1.4 | | | | | | 0 | 0 | Blue sky | |
| Lucknow | 29.33 | 745.0 | 29.71 | 754.6 | 78.3 | 25.7 | 23 | NNW | 3.5 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.42 | 747.2 | 29.73 | 755.1 | 81.3 | 27.4 | 34 | NW | 4.7 | 2.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.52 | 749.8 | 29.70 | 754.4 | 78.9 | 26.1 | 52 | W | 5.4 | 2.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.72 | 704.1 | 29.74 | 755.3 | 76.0 | 24.4 | 27 | WNW | 11.3 | 5.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.68 | 753.8 | 29.76 | 755.8 | 83.3 | 28.5 | 41 | WNW | 1.9 | 0.8 | | | | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.70 | 754.3 | 29.72 | 754.9 | 78.2 | 25.7 | 46 | NNE | 2.0 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.29 | 744.0 | 29.68 | 753.9 | 74.4 | 23.6 | 51 | ENE | 4.4 | 2.0 | | | 0 | | | 0 | 0 | Misty | |
| Chittagong | 29.68 | 753.7 | 29.77 | 756.1 | 78.4 | 25.8 | 74 | Calm | 4.8 | 2.2 | | | 0 | | | 0 | 0 | Threatening | |
| Sibsagar | 29.36 | 745.9 | 29.71 | 754.6 | 64.4 | 18.0 | 92 | ENE | 2.0 | 0.9 | | | 10 | W | W | 0.01 | 0.3 | | |
| Jubbulpore | 28.38 | 720.8 | 29.73 | 755.1 | 84.8 | 29.3 | 29 | Calm | 2.9 | 1.3 | | | 0 | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.52 | 749.8 | 29.94 | 760.5 | 47.1 | 8.4 | 42 | S | 1.3 | 0.6 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Padua | 29.43 | 747.5 | 29.90 | 761.0 | 44.6 | 7.0 | 46 | WSW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Milan | 29.84 | 757.8 | 29.95 | 760.7 | 46.2 | 7.9 | 67 | NE | 1.3 | 0.6 | ..... | ..... | 6 | N | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.04 | 737.6 | 29.97 | 761.3 | 42.3 | 5.7 | 55 | SE | 1.9 | 0.8 | ..... | ..... | 5 | N | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 29.76 | 755.8 | 29.95 | 760.8 | 49.6 | 9.8 | 54 | SW | 4.3 | 1.8 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Genoa | 28.01 | 711.4 | 29.97 | 761.2 | 39.7 | 4.3 | 41 | NW | ..... | ..... | 2 | ..... | 3 | N | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Florence | 29.91 | 759.7 | 29.96 | 761.0 | 45.1 | 7.3 | 67 | NW | 9.8 | 4.4 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.69 | 754.1 | 29.95 | 760.8 | 48.2 | 9.0 | 59 | SW | ..... | ..... | 2 | ..... | 3 | N | ..... | 0.016 | 0.4 | ..... | Prof. P. Monte. |
| Pesaro | 29.84 | 757.9 | 29.93 | 760.1 | 49.6 | 9.8 | 79 | W | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Rome | 29.74 | 755.4 | 29.92 | 760.0 | 51.3 | 10.7 | 55 | N | 0.7 | 0.3 | ..... | ..... | 3 | ..... | ..... | 0.039 | 1.0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.69 | 751.9 | 29.80 | 756.5 | 53.6 | 12.0 | 60 | NNW | 6.3 | 2.8 | ..... | ..... | 6 | N | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 28.97 | 735.8 | 29.87 | 758.8 | 50.7 | 10.4 | 73 | SE | 1.8 | 0.8 | ..... | ..... | 10 | ..... | ..... | 0.083 | 2.1 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.76 | 756.0 | 29.96 | 761.0 | 51.1 | 10.6 | 71 | NW | ..... | ..... | 2 | ..... | 7 | NW | ..... | 0.020 | 0.5 | ..... | Prof. D. Conti. |
| Palermo | 29.68 | 753.9 | 29.94 | 760.5 | 52.5 | 11.4 | 50 | WNW | 2.5 | 5.6 | ..... | ..... | 7 | WNW | ..... | 0.016 | 0.4 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.80 | 756.9 | 29.87 | 758.7 | 55.9 | 13.3 | 67 | NW | 2.5 | 1.1 | ..... | ..... | 10 | NW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.35 | 745.5 | 29.91 | 759.6 | 52.2 | 11.2 | 52 | WSW | 2.5 | 1.1 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.05 | 763.3 | 30.07 | 763.8 | 49.2 | 9.6 | 67 | NNE | 6.5 | 2.9 | ..... | ..... | 2cs | ..... | ..... | 0 | 0 | Fair | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.92 | 759.9 | 30.13 | 765.3 | 43.1 | 6.2 | 76 | N | 8.3 | 3.7 | ..... | ..... | 1cs | ..... | ..... | 0 | 0 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.88 | 758.9 | 29.95 | 760.7 | 55.8 | 13.2 | 97 | SSE | 3.0 | 1.3 | ..... | ..... | 10n | ..... | ..... | 0.320 | 8.13 | Light rain | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.15 | 638.7 | 30.25 | 768.4 | 44.2 | 6.8 | 53 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. L. Perez. |
| Leon | 24.50 | 622.3 | 30.15 | 765.9 | 52.0 | 11.1 | 65 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. M. Leal |
| Mexico, Central Obs'y | 23.12 | 587.2 | 30.33 | 770.4 | 42.8 | 6.0 | 63 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 46.4 | 8.0 | 72 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | M. V. de Leon, M. E. |
| Tlacotalpam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. M. Cházaro. |
| San Luis Potosi | 24.28 | 616.7 | 30.27 | 768.9 | 42.0 | 5.6 | 65 | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | T. G. de la Cadena. |
| Puebla, (Catholic Institute) | 23.45 | 595.5 | 30.21 | 767.3 | 40.3 | 4.6 | 31 | ESE | 0.4 | 0.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.42 | 721.9 | 30.10 | 764.4 | 70.9 | 21.6 | 63 | NE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1893 m., or 6210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2201m., or 7220.9 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 532 m., or 1745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.00 | 761.9 | 30.00 | 761.9 | 39.9 | 4.4 | ..... | W | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.008 | 0.2 | ..... | |
| Groningen | 29.89 | 759.1 | 29.94 | 760.5 | 36.7 | 2.6 | ..... | N | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.063 | 1.6 | ..... | |
| Helder | 29.96 | 761.0 | 29.96 | 761.0 | 37.4 | 3.0 | ..... | NW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.97 | 761.2 | 29.97 | 761.2 | 37.9 | 3.3 | ..... | NW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.93 | 760.1 | 29.97 | 761.3 | 37.6 | 3.1 | ..... | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.016 | 0.4 | Dull | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the cooperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.62 | 752.3 | 29.67 | 753.7 | 37.5 | 3.2 | 73 | NW | 20.1 | 9.0 | ..... | ..... | 5 | ..... | ..... | 0.787 | 20.0 | Rain & snow | |
| Brönö | 29.41 | 746.9 | 29.45 | 747.9 | 37.4 | 3.0 | 71 | SSW | 18 | 8 | ..... | ..... | 9 | ..... | ..... | 0.012 | 0.3 | ..... | |
| Christiania | 29.48 | 748.8 | 29.63 | 752.7 | 21.4 | — 5.9 | 98 | SW | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Light fog | |
| Tromsö | 29.31 | 744.4 | 29.35 | 745.5 | 28.5 | — 1.8 | 84 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the cooperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.31 | 769.8 | 30.50 | 774.8 | 53.6 | 12.0 | 70 | NNE | 9.4 | 4.2 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.67 | 738.4 | 30.11 | 764.9 | 51.8 | 11.0 | 60 | E | 6.3 | 2.8 | ..... | ..... | 7 | SE | ..... | 0.150 | 3.8 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 29.79 | 756.7 | 29.88 | 758.9 | 55.6 | 13.1 | 72 | W | 3.1 | 1.4 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.76 | 755.7 | 30.12 | 765.0 | 51.1 | 10.6 | 71 | ENE | 2.6 | 1.1 | ..... | ..... | 9 | ..... | ..... | 0.039 | 1.0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.35 | 770.8 | 30.42 | 772.6 | 56.8 | 13.8 | 58 | NE | 24.8 | 11.1 | ..... | ..... | 4 | ..... | ..... | | | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h 6 m., p. m.

| Portuguese Naval Series. Vessels. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd'r. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | ..... | ..... | 29.90 | 759.4 | 83.3 | 28.5 | ..... | WSW | ..... | ..... | 2 | ..... | 2 | ..... | WSW | 2 | W | Blue sky | A. J. de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. T. d'Oliveria, Com'd't |
| Rio Lima, Capt. S. C. da SilvaCosta, Porto Praya, Cape Verd Islands | ..... | ..... | 30.00 | 762.0 | 72.7 | 22.6 | ..... | Var. | ..... | ..... | 3 | ..... | 1 | ..... | NE | 2 | NE | D. clouds | A. Ferreira, 2nd Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | 29.74 | 755.3 | 86.0 | 30.0 | ..... | WSW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 29.89 | 759.2 | 67.1 | 19.5 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 1 | ..... | Overcast | J. M. T. Guimaraes, Com'd't. |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.41 | 747.0 | 29.85 | 758.2 | 29.8 | — 1.2 | 86 | WSW | 11 | 5 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs |
| Wilna | 29.39 | 746.4 | 29.82 | 757.4 | 35.2 | 1.8 | 78 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy cl'ds. | Astronomical Obs. |
| Dorpat | 29.54 | 750.2 | 29.79 | 756.6 | 34.2 | 1.2 | 83 | SW | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.71 | 754.5 | 29.72 | 754.9 | 34.0 | 1.1 | 98 | S | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snow & fog. | Central Physical Obs. |
| Kieff | 29.15 | 740.5 | 29.79 | 756.7 | 47.1 | 8.4 | 70 | SE | 9 | 4 | ..... | ..... | 8c;ck; | ks | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.81 | 757 2 | 29 88 | 759.0 | 56.3 | 13.5 | 63 | SSW | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.95 | 760.6 | 29.97 | 761.1 | 52.9 | 11.6 | 80 | SE | 4 | 2 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.43 | 747.4 | 30.00 | 762.0 | 29.8 | — 1.2 | 96 | SE | 9 | 4 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.72 | 754.9 | 29.92 | 760.0 | 58.3 | 14.6 | 53 | SE | 4 | 2 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Archangel | 29.73 | 755.2 | 29.75 | 755.7 | 34.9 | 1.6 | 85 | S | 18 | 8 | ..... | ..... | 9k | ..... | ..... | ..... | ..... | ..... | Capt. Sselliwerstow. |
| Tiflis | 28.71 | 729.1 | 30.12 | 765.1 | 57.6 | 14.2 | 34 | E | 9 | 4 | ..... | ..... | 6s | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.19 | 766.7 | 30.10 | 764.6 | 48.7 | 9.3 | 65 | SE | 4 | 2 | ..... | ..... | 8s | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.56 | 750.8 | 30.05 | 763.3 | 32.0 | 0.0 | 72 | W | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.77 | 756.2 | 30.06 | 763.5 | 24.6 | — 4.1 | 93 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.38 | 744.9 | 30.39 | 772.0 | 7.0 | —13.9 | 83 | E | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Meteorological Obs. |
| Nukuss | 30.16 | 766.1 | 30.40 | 772.2 | 44.2 | 6.8 | 19 | SW | 4 | 2 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.75 | 730.2 | 30.54 | 775.7 | 39.4 | 4.1 | 50 | NW | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.93 | 760.2 | 30.49 | 774.4 | 3.9 | —15.6 | 66 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.24 | 768.0 | 30.56 | 776.1 | 12.2 | —11.0 | 79 | NW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 30.21 | 767.3 | 30.35 | 770.0 | 26.8 | — 2.9 | 40 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend 455? m., or 1,492.7? ft., Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E. 48° 34'.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.92 | 760.0 | 30.03 | 762.7 | 52.7 | 11.5 | 60 | SSE | 3.5 | 1.58 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 30.06 | 763.6 | 30.12 | 765 1 | 56.1 | 13.4 | 75 | N | 1.2 | 0.58 | ..... | 1 | 8 | NE | ..... | 0.098 | 2.5 | Almost cov'd | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.09 | 688.1 | ..... | ..... | 47.5 | 8.6 | 72 | SW | 3.2 | 1.42 | ..... | 0 | 8 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.84 | 707.1 | ..... | ..... | 49.8 | 9.9 | 69 | S | 3.0 | 1,33 | ..... | 4 | 0 | NW | ..... | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.93 | 760.1 | 30.08 | 763.9 | 64.9 | 18.3 | 48 | SW | 2.2 | 1.00 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.16 | 740.6 | 30.08 | 764.0 | 44.1 | 6.7 | 81 | NE | 9.8 | 4.4 | ..... | ..... | 10 | ..... | ..... | 0.024 | 0.6 | Misty | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.12 | 764 9 | 30.18 | 766.6 | 71.8 | 22.1 | 73 | NNE | 11.2 | 5.0 | ..... | 0 | 6k | ..... | ENE | 0 | 0 | Fair | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.76 | 756.0 | 29.81 | 757.3 | 82.4 | 28.0 | 80 | ESE | 2.9 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.98 | 761.4 | 30.08 | 764.0 | 57.4 | 14.1 | 43 | ESE | 5.4 | 2.4 | ..... | 0 | 4 | ..... | SE | 0 | 0 | ..... | Capt. C. Pujazon, R. N. Dir. |
| San Juan de Porto Rico, W. I | 29.92 | 759.9 | 30.01 | 762.2 | 75.6 | 24.2 | 87 | Calm | 0 | 0 | ..... | 8c | 1k | S | S | 0.089 | 1.00 | Clear | Leonardo de Tejeda, Ch'f. Eng'r |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum't'al error and temperature. Inches. | Barometer. Corrected for instrum't'al error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.55 | 750.5 | 29.59 | 751.5 | 20.5 | — 6.4 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.79 | 756.6 | 29.60 | 751.9 | 21.9 | — 5.6 | 100 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.53 | 750.1 | 29.58 | 751.4 | 20.1 | — 6.6 | 95 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.47 | 748.4 | 29.64 | 752.9 | 31.1 | — 0.5 | 83 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.64 | 752.9 | 29.70 | 754.4 | 33 1 | 0.6 | 89 | SW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.55 | 750.6 | 29.63 | 752.5 | 26.2 | — 3.2 | 89 | SSW | 7.2 | 3.2 | ..... | ..... | 10 | ..... | ..... | 0.008 | 0.21 | Snowing | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.62 | 726.9 | 30.10 | 764.5 | 36.3 | 2.4 | 68 | N | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | Vapory | The Observatory. |
| Zurich | 28.41 | 721.6 | 30.[illegible] | 764.8 | 36.0 | 2.2 | 65 | W | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +1.4 mm.; Thermometer, —3.3 cnt.; Relative Humidity, —7 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.78 | 756.3 | 61.7 | 16.5 | 44 | ESE | 7 | 3.0 | ..... | ..... | 10 | ..... | SW | 0.472 | 12.0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.49 | 774.4 | 67.6 | 19.8 | ..... | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.84 | 757.8 | 55.6 | 13.1 | ..... | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.88 | 758.9 | 30.00 | 761.9 | 72.0 | 22.2 | 58 | NE | ..... | ..... | 1 | ..... | 9c | ..... | ..... | 0 | 0 | D. clouds | Prof. C. V. A. Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.65 | 778.5 | 30.72 | 780.3 | 1.5 | —16.9 | 83 | NW | 3 | 1.3 | ..... | ..... | 9n | ..... | ..... | 0.50 | 12.7 | Cloudy | Hon. J. Ferguson |
| Brockville, Ontario | 30.00 | 762.0 | 30.33 | 770.4 | 8 | —13.3 | ..... | Calm | 0 | 0 | ..... | ..... | 10s | ..... | E | 0.10 | 2.5 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 30.77 | 781.5 | 30.84 | 783.3 | — 8 | —22.2 | 92 | Calm | 0 | 0 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | G. A. Blair. |
| Charlottetown, P. E. Island | 30.81 | 782.6 | 30.85 | 783.6 | 8 | —13.3 | 100 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | H. J. Cundall, C. E |
| Cornwall, Ontario | 30.13 | 765.3 | 30.35 | 770.9 | — 5.5 | —20.8 | 100 | SE | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0.65 | 1.3 | Overcast | James Smith, M. A |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | W. H. Bevis. |
| *Father Point, Quebec | 30.65 | 778.5 | 30.67 | 779.0 | 3 | —16.1 | 66 | SE | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Light snow | J. McWilliams. |
| Fredericton, N. B | 30.76 | 781.3 | 30.83 | 783.1 | — 4.9 | —20.5 | 100 | Calm | 0 | 0 | ..... | 5c,10k | 0 | W | ..... | 0.16 | 4.1 | Fair | Prof. Harrison. |
| *Fort Garry Manitoba | 29.59 | 751.6 | 30.57 | 776.5 | —18 | —27.8 | 100 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Stewart. |
| Granton, Ontario | 28.96 | 735.3 | 30.09 | 764.3 | 35 | 1.7 | ..... | S | ..... | ..... | 2 | ..... | 10n | ..... | ..... | Inap. | Inap. | Overcast | James Grant. |
| *Halifax, N. S | 30.62 | 777.7 | 30.78 | 781.8 | 7 | —13.9 | 86 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | F. Allison, M. A. |
| Hamilton, Ontario | 29.81 | 757.2 | 30.20 | 767.1 | 32.7 | 0.4 | 73 | SW | ..... | ..... | 3 | 10cs | 0 | SW | ..... | 0.04 | 1.0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.98 | 761.5 | 30.35 | 770.9 | 19 | — 7.2 | 94 | SE | 15 | 6.7 | ..... | ..... | 10s | ..... | Calm | 0.06 | 1.5 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.72 | 780.3 | 30.76 | 781.3 | 16.0 | — 8.9 | 93 | NE | 10 | 4.5 | ..... | 6k | ..... | NE | ..... | 0 | 0 | Fair | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 30.24 | 768.1 | 30.47 | 773.9 | 3 | —16.1 | 73 | E | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | C. H. McLeod, C. E |
| *Parry Sound, Ontario | 29.33 | 745.0 | 30.07 | 763.8 | 22 | — 5.6 | 93 | S | 16 | 7.2 | ..... | ..... | 10n | ..... | S | 0.08 | 2.0 | Light snow | Rev. R. Mosley. |
| Peterboro, Ontario | 29.40 | 746.7 | 30.20 | 767.1 | 25.3 | — 3.7 | 87 | S | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.48 | 748.8 | 30.21 | 767.3 | 29 | — 1.7 | 80 | SW | 12 | 5.4 | ..... | ..... | Haze | ..... | ..... | 0 | 0 | Cloudy | H. Morgan. |
| Port Hastings, N. S | 30.72 | 780.3 | 30.78 | 781.8 | 9.9 | —12.3 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.50 | 749.3 | 30.18 | 766.6 | 29 | — 1.7 | 87 | SW | 12 | 5.4 | ..... | ..... | 10n | ..... | SW | Inap. | Inap. | Cloudy | M. Payne. |
| *Quebec, Quebec | 30.24 | 768.1 | 30.60 | 777.2 | 5 | —15.0 | 75 | NE | ..... | ..... | 5 | ..... | 10n | ..... | NE | 0 | 0 | Cloudy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.72 | 754.9 | 30.23 | 767.8 | 2 | —16.7 | 100 | E | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0.26 | 6.6 | Light snow | W. H. McIntyre. |
| St. Andrews, N. B | 30.70 | 779.8 | 30.75 | 781.0 | 11 | —11.7 | 73 | NW | ..... | ..... | 2 | 0 | 2s | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| St. John, N. B | 30.70 | 779.8 | 30.88 | 784.3 | 6 | —14.4 | 100 | N | 6 | 2.7 | ..... | 0 | 1k | ..... | ..... | 0 | 0 | Clear | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.28 | 743.7 | 30.02 | 762.5 | 34 | 1.1 | 89 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | K. Stewart. |
| Stayner, Ontario | 29.29 | 744.0 | 30.11 | 764.8 | 26 | — 3.3 | 89 | SE | 10 | 4.5 | ..... | ..... | 10n | ..... | SE | 0 | 0 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.77 | 730.7 | 30.10 | 764.5 | 33.8 | 1.0 | 81 | SE | 18.5 | 8.3 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Overcast | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.76 | 781.3 | 30.81 | 782.6 | 11 | —11.7 | 82 | N | 10 | 4.5 | ..... | 5k | 0 | N | ..... | 0 | 0 | Fair | T. C. Hill. |
| *Toronto, Ontario | 29.78 | 756.4 | 30.18 | 766.6 | 30 | — 1.1 | 85 | SE | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Cloudy | Magnetic Observatory. |
| Windsor, N. S | 30.09 | 779.5 | 30.79 | 782.0 | 7.5 | —13.6 | 89 | N | 12 | 5.4 | ..... | 10s | 0 | ..... | ..... | 0 | 0 | Fine | Prof. John E. Oram |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 18.0 | — 7.8 | 100 | N | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.44 | 11.2 | Fair | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters, Stratford, 1,182 ft., or 360.3 meters.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Cloud. Amount. Up'er 0—10. | Cloud. Amount. Low'r 0—10. | Cloud. Direction. Upper. From— | Cloud. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 30.37 | 771.4 | 30.63 | 778.0 | 19 | — 7.2 | 69 | S | 12 | 5.4 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Alpena, Michigan | 29.28 | 743.7 | 29.95 | 760.7 | 25 | — 3.9 | 87 | S | 5 | 2.2 | | | 10s | | Calm | 0.10 | 2.5 | Cloudy | |
| Atlanta, Georgia | 29.36 | 745.7 | 30.00 | 777.2 | 32 | 0.0 | 79 | NE | 15 | 6.7 | | 2k | Sm'e | Calm | Calm | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 30.70 | 779.8 | 30.72 | 780.3 | 27 | — 2.8 | 76 | SE | 8 | 3.6 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Augusta, Georgia | 30.44 | 773.2 | 30.63 | 778.0 | 34 | 1.1 | 52 | E | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Baltimore, Maryland | 30.69 | 779.5 | 30.74 | 780.8 | 26 | — 3.3 | 88 | SE | 3 | 1.3 | | Haze | Sm'e | Calm | Calm | 0 | 0 | Smoky | |
| Barnegat, New Jersey | 30.67 | 779.0 | 30.69 | 779.5 | 28 | — 2.2 | 88 | SE | 11 | 4.9 | | 10k | 0 | E | | 0 | 0 | Cloudy | |
| Bismarck, Dakota | 28.60 | 726.4 | 30.45 | 773.4 | —19 | —28.3 | 100 | Calm | 0 | 0 | | 0 | 0 | | | 0.08 | 2.0 | Clear | |
| Boerne, Texas | 28.66 | 728.0 | 29.96 | 761.0 | 61 | 16.1 | 88 | SE | 16 | 7.2 | | | 10s | | S | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.35 | 694.7 | 30.31 | 769.9 | 28 | — 2.2 | 80 | S | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Boston, Massachusetts | 30.58 | 776.7 | 30.76 | 781.3 | 13 | —10.6 | 62 | NW | 5 | 2.2 | | | 10s | | SE | 0 | 0 | Cloudy | |
| Brackettville, Texas | 28.97 | 735.8 | 30.10 | 762.0 | 62 | 16.7 | 83 | SE | 8 | 3.6 | | | 10s | | E | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 29.48 | 748.8 | 30.09 | 779.5 | —20 | —28.9 | 90 | NW | 12 | 5.4 | | 1cs | 0 | Calm | | 0.06 | 1.5 | Clear | |
| Brownsville, Texas | 30.08 | 764.0 | 30.15 | 765.8 | 66 | 18.9 | 95 | S | 4 | 1.8 | | | Fog | | Calm | 0 | 0 | Foggy | |
| Buffalo, New York | 29.48 | 748.8 | 30.20 | 767.1 | 33 | 0.6 | 61 | S | 18 | 8.0 | | | 9s | | SW | 0 | 0 | Cloudy | |
| Burkes, Arizona | | | | | 50 | 10.0 | 19 | S | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Burlington, Vermont | 30.20 | 767.1 | 30.52 | 775.2 | 16.5 | — 8.6 | 42 | S | 24 | 10.7 | | 2cs | 8s | W | W | 0 | 0 | Cloudy | |
| Cairo, Illinois | 30.00 | 762.0 | 30.41 | 772.4 | 49 | 9.4 | 51 | S | 15 | 6.7 | | 10ck | 0 | W | | 0 | 0 | Cloudy | |
| Camp Apache, Arizona | | | | | | | | | | | | | | | | | | | |
| Camp Grant, Arizona | 25.21 | 640.3 | 30.01 | 762.2 | 50 | 10.0 | 52 | N | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Camp Verde, Arizona | | | | | 49 | 9.4 | 37 | S | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Camp o, California | 27.43 | 696.7 | 30.00 | 762.0 | 30 | — 1.1 | 67 | E | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.62 | 777.7 | 30.62 | 777.7 | 40 | 4.4 | 82 | NE | 16 | 7.2 | | | 10s | | NE | 0 | 0 | Cloudy | |
| Cape Henry, Virginia | 30.64 | 778.2 | 30.66 | 778.8 | 34 | 1.1 | 79 | N | 15 | 5.8 | | | 10s | | NE | 0 | 0 | Cloudy | |
| Cape Lookout, N. Carolina | 30.56 | 776.2 | 30.58 | 776.7 | 37 | 2.8 | 91 | NE | 23 | 10.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape May, New Jersey | 30.66 | 778.8 | 30.70 | 779.8 | 28 | — 2.2 | 77 | NE | 5 | 2.2 | | | 8s | | NE | 0 | 0 | Cloudy | |
| Castroville, Texas | 29.36 | 745.7 | 30.06 | 763.5 | 64 | 17.8 | 83 | S | 8 | 3.6 | | | 10ks | | S | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 30.55 | 776.0 | 30.61 | 777.5 | 37 | 2.8 | 71 | NE | 8 | 3.6 | | | 10s | | NE | 0 | 0 | Cloudy | |
| Cheyenne, Wyoming | 24.15 | 613.4 | 30.09 | 764.3 | 15 | — 9.4 | 100 | S | 8 | 3.6 | | | 10n | | Calm | 0.12 | 3.0 | Light snow | |
| Chicago, Illinois | 29.43 | 747.5 | 30.14 | 765.5 | 38 | 3.3 | 72 | W | 14 | 6.3 | | | 10s | | Calm | 0.07 | 1.8 | Cloudy | |
| Cincinnati, Ohio | 29.72 | 754.9 | 30.39 | 771.9 | 44 | 6.7 | 41 | S | 6 | 2.7 | | 1c | 0 | W | | 0 | 0 | Clear | |
| Cleveland, Ohio | 29.49 | 749.0 | 30.24 | 768 1 | 40 | 4.4 | 56 | SE | 21 | 9.4 | | 5cs | 0 | W | | 0 | 0 | Fair | |
| Coleman City, Texas | 28.31 | 719.1 | 29.96 | 761.0 | 58 | 14.4 | 82 | S | 12 | 5.4 | | 2c | 5s | SW | SW | 0 | 0 | Fair | |
| Columbus, Ohio | 29.48 | 748.8 | 30.36 | 771.1 | 38 | 3.3 | 54 | S | 7 | 3.1 | | 0 | Sm'e | | Calm | 0 | 0 | Clear | |
| Concho, Texas | 28.19 | 716.0 | 29.85 | 758.2 | 61 | 16.1 | 76 | S | 12 | 5.4 | | 10k | 0 | S | | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.70 | 754.4 | 30.17 | 766.3 | 60 | 15.6 | 88 | SE | 10 | 4.5 | | | 10s | | SE | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.64 | 752.8 | 30.33 | 770.4 | 24 | — 4.4 | 61 | NW | 17 | 7.6 | | | 10s | | W | 0 | 0 | Cloudy | |
| Deadwood, Dakota | 25.56 | 649.2 | | | 11 | —11.7 | 80 | Calm | 0 | 0 | | | 10s | | Calm | 0.04 | 1.0 | Cloudy | |
| Decatur, Texas | 29.08 | 738.6 | 30.26 | 768.6 | 59 | 15.0 | 96 | SW | 12 | 5.4 | | | 10s | | SE | 0 | 0 | Cloudy | |
| Denison, Texas | 29.36 | 745.7 | 30.15 | 765.8 | 58 | 14.4 | 88 | SE | 10 | 4.5 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.96 | 634.0 | 30.18 | 766.6 | 22 | — 5.6 | 86 | NE | 4 | 1.8 | | | 10n | | Calm | 0.05 | 1.3 | Light snow | |
| Des Moines, Iowa | 29.52 | 749.8 | 30.49 | 774.4 | 16 | — 8.9 | 83 | N | 15 | 6.7 | | | 10s | | NW | 0 | 0 | Cloudy | |
| Detroit, Michigan | 29.43 | 747.5 | 30.13 | 765.3 | 36 | 2.2 | 61 | SW | 8 | 3.6 | | | 10s | | SW | 0.03 | 0.8 | Cloudy | |
| Dodge City, Kansas | 29.70 | 754.4 | 30.20 | 767.1 | 17 | — 8.3 | 83 | N | 24 | 10.7 | | | 10s | | N | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 29.59 | 751.6 | 30.35 | 770.9 | 19 | — 7.2 | 69 | N | 12 | 5.4 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 29.65 | 753.1 | 30.41 | 772.4 | 7 | —13.9 | 77 | Calm | 0 | 0 | | 0 | 0 | | | 0.43 | 10.9 | Clear | |
| Eagle Pass, Texas | 29.29 | 744.0 | 30.03 | 762.8 | 61 | 16.1 | 88 | SE | | | 1 | | 10s | | SE | 0 | 0 | Cloudy | |
| Eastport, Maine | 30.68 | 779.3 | 30.75 | 781.0 | 15 | — 9.4 | 82 | NE | 12 | 5.4 | | | 10n | | NE | Inap. | Inap. | Light snow | |
| Edinburg, Texas | | | | | 66 | 18.9 | 95 | S | | | 6 | | 8s | | S | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.27 | 667.2 | | | 52 | 11.1 | 23 | NW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.49 | 749.0 | 30.23 | 767.8 | 36 | 2.2 | 61 | S | 22 | 9.8 | | 5c | 0 | W | | 0 | 0 | Fair | |
| Escanaba, Michigan | 29.38 | 746.2 | 30.08 | 764 0 | 21 | — 6.1 | 86 | NW | 22 | 9.8 | | | 10s | | NW | 0.46 | 11.7 | Cloudy | |
| Florence, Arizona | 28 60 | 723.9 | 30.10 | 764.5 | 54 | 12.2 | 43 | SW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Buford, Dakota | 28.35 | 720.1 | | | —22 | —30.0 | 60 | SW | | | 2 | 0 | 0 | | | 0.01 | 0.3 | Clear | |
| Fort Craig, New Mexico | 25.49 | 647.4 | 29.55 | 750.6 | 40 | 4.4 | 47 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.24 | 641.1 | 30.20 | 767.1 | 42 | 5.6 | 48 | W | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.61 | 752.1 | 30.15 | 765.8 | 56 | 13.3 | 63 | S | 14 | 6.3 | | | 10ks | | SW | 0 | 0 | Cloudy | |
| Fort Griffin, Texas | 28.72 | 729.5 | 29.97 | 761.2 | 58 | 14.4 | 88 | NW | 3 | 1.3 | | | 10ks | | NW | 0 | 0 | Cloudy | |
| Fort Keogh, Montana | 27.77 | 705.4 | | | —17 | —27.2 | Inap | Calm | 0 | 0 | | 0 | 0 | | | 0.01 | 0.3 | Clear | |
| Fort McKavett, Texas | | | | | | | | | | | | | | | | | | | |
| Fort St. Michael, Alaska | | | | | | | | | | | | | | | | | | | |
| Fort Sill, Indian Territory | 28.93 | 734.8 | 30.09 | 764.3 | 34 | 1.1 | 90 | N | 20 | 8.9 | | | 10n | | Calm | 0.02 | 0.5 | Light rain | |
| Fort Stevenson, Dakota | 28.54 | 724.9 | | | —26 | —32.2 | 100 | NW | 4 | 1.8 | | 0 | 0 | | | 0.12 | 3.0 | Clear | |
| Fredericksburg, Texas | 28.38 | 720.8 | 29.93 | 760.2 | 62 | 16.7 | 77 | S | 12 | 5.4 | | | 10ks | | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 30.19 | 766.8 | 30.23 | 767.8 | 61 | 16.1 | 94 | E | 12 | 5.4 | | 0 | 8s | | E | 0 | 0 | Cloudy | |
| Graham, Texas | 29.05 | 737.9 | 30.10 | 764.5 | 60 | 15.6 | 94 | NE | 1 | 0.4 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 29.43 | 747.5 | 30.10 | 764.5 | 37 | 2.8 | 71 | W | 20 | 8.9 | | | 10s | | Calm | 0.03 | 0.8 | Threatening | |
| Indianapolis, Indiana | 29.47 | 748.5 | 30.27 | 768.8 | 42 | 5.6 | 50 | SW | 7 | 3.1 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Indianola, Texas | 30.16 | 766.1 | 30.19 | 766.8 | 63 | 17.2 | 94 | SE | 12 | 5.4 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.96 | 735.6 | 30.08 | 764.0 | 60 | 15.6 | 94 | SE | 3 | 1.3 | | | 10s | | S | 0 | 0 | Cloudy | |
| Jacksonville, Florida | 30.46 | 773.7 | 30.48 | 774.2 | 52 | 11.1 | 86 | NE | 12 | 5.4 | | | 10s | | NE | 0 | 0 | Cloudy | |
| Keokuk, Iowa | 29.67 | 753.6 | 30.33 | 770.4 | 25 | — 3.9 | 75 | N | 14 | 6.3 | | | 10s | | W | 0 | 0 | Cloudy | |
| Key West, Florida | 30.19 | 766.8 | 30.23 | 767.8 | 68 | 20.0 | 79 | NE | 20 | 8.9 | | 1k | Haze | NE | Calm | 0 | 0 | Clear | |
| Kittyhawk North Carolina | 30.63 | 778.0 | 30.65 | 778.5 | 38 | 3.3 | 81 | NE | 16 | 7.2 | | 0 | 8s | | NE | 0 | 0 | Fair | |
| Knoxville, Tennessee | 29.81 | 757.2 | 30.59 | 777.0 | 30.5 | — 0.8 | 84 | E | 1 | 0.4 | | Haze | Fog | | | 0 | 0 | Foggy | |
| La Crosse, Wisconsin | 29.59 | 751.6 | 30.40 | 772.1 | 15 | — 9.4 | 82 | NW | 8 | 3.6 | | 0 | 8s | | Calm | 0.02 | 0.5 | Fair | |
| La Mesilla, New Mexico | 26.10 | 662.9 | 30.25 | 768.3 | 38 | 3.3 | 63 | Calm | 0 | 0 | | 5cs | 0 | Calm | | 0 | 0 | Fair | |
| Laredo, Texas | 29.65 | 753.1 | 29.99 | 761.7 | 63 | 17.2 | 89 | SE | 8 | 3.6 | | 10ck | 0 | SE | | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.50 | 749.3 | 30.42 | 772.6 | 21 | — 6.1 | 100 | N | 19 | 8.5 | | | 10n | | N | 0.01 | 0.3 | Sleeting | |
| Los Angeles, California | 29.68 | 753.9 | 30.02 | 762.5 | 49 0 | 9.4 | 85 | N | 3 | 1.3 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Louisville, Kentucky | 29.81 | 757.2 | 30.39 | 771.9 | 43 | 6.1 | 36 | SW | 10 | 4.5 | | 2ck | 2s | SW | Calm | 0 | 0 | Fair | |
| Lynchburg, Virginia | 29.97 | 761.2 | 30.72 | 780.3 | 27 | — 2.8 | 66 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Madison, Wisconsin | 29.19 | 741.4 | 30.25 | 768.3 | 22 | — 5.6 | 72 | NW | 23 | 10.3 | | | 10s | | Calm | 0.14 | 3.6 | Cloudy | |
| Marquette, Michigan | 29.39 | 746.5 | 30.14 | 765.5 | 19 | — 7.2 | 100 | NW | 28 | 12.5 | | | 10n | | Calm | 0.39 | 9.9 | Light snow | |
| Mason, Texas | 28.45 | 722.6 | 30.10 | 766.8 | 63 | 17.2 | 78 | S | 12 | 5.4 | | | 10s | | S | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 30.12 | 765.0 | 30.45 | 773.4 | 46 | 7.8 | 54 | S | 5 | 2.2 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Milwaukee, Wisconsin | 29.37 | 746.0 | 30.14 | 765.5 | 32 | 0.0 | 79 | NW | 18 | 8.0 | | | 10s | | Calm | 0.01 | 0.3 | Cloudy | |
| Mobile, Alabama | 30.42 | 772.6 | 30.46 | 773.7 | 48 | 8.9 | 63 | E | 6 | 2.7 | | | 10s | | S | 0 | 0 | Cloudy | |
| Montgomery, Alabama | 30.31 | 769.9 | 30.56 | 776.2 | 39 | 3.9 | 55 | E | 4 | 1.8 | | 2c | 2s;sm' | SW | Calm | 0 | 0 | Fair | |
| Morgantown, West Virginia | 29.33 | 745.0 | 30.44 | 773.2 | 37 | 2.8 | 63 | Calm | 0 | 0 | | 2cs | 0 | NW | | 0 | 0 | Fair | |
| Mt. Washington, N. H. | 23.68 | 606.5 | 30.24 | 768.1 | 2 | —16.7 | 83 | SW | 48 | 21.5 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Nashville, Tennessee | 29.96 | 761.0 | 30.53 | 775.4 | 39 | 3.9 | 55 | Calm | 0 | 0 | | 0 | Sm'e | | | 0 | 0 | Clear | |
| New Haven, Connecticut | 30.62 | 777.7 | 30.75 | 781.0 | 18 | — 7.8 | 83 | NE | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| New London, Connecticut | 30.69 | 779.5 | 30.75 | 781.0 | 18 | — 7.8 | 78 | NE | 6 | 2.7 | | | 9ks | | NE | 0 | 0 | Cloudy | |
| New Orleans, Louisiana | 30.32 | 770.1 | 30.38 | 771.6 | 51 | 10.6 | 86 | E | 6 | 2.7 | | 0 | 5s | | SE | 0 | 0 | Fair | |
| Newport, Rhode Island | 30.69 | 779.5 | 30.74 | 780.8 | 22 | — 5.6 | 72 | N | 4 | 1.8 | | | 10s | | E | 0 | 0 | Cloudy | |
| New York, New York | 30.54 | 775.7 | 30.73 | 780.5 | 24 | — 4.4 | 74 | SE | 9 | 4.0 | | | 10ks | | NW | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 30.63 | 778.0 | 30.68 | 779.3 | 33 | 0.6 | 79 | NE | 4 | 1.8 | | | 10s | | Calm | Inap. | Inap. | Cloudy | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.46 | 697.5 | 30.30 | 769.6 | 14 | —10.0 | 64 | N | 12 | 5.4 | | | 10s | | N | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 30.03 | 762.8 | 30.08 | 764.0 | 34.2 | 1.2 | 100 | W | 1 | 0.4 | | | Fog | | Calm | 0 | 0 | Dense fog | |
| Omaha, Nebraska | 29.28 | 743.7 | 30.52 | 775.2 | 10 | —12.2 | 79 | N | 20 | 8.9 | | | 10s | | NW | 0 | 0 | Cloudy | |
| Oswego, New York | 30.01 | 762.2 | 30.36 | 771.1 | 25 | — 3.9 | 87 | SE | 21 | 9.4 | | 10ck | 0 | W | | 0 | 0 | Cloudy | |
| Pembina, Dakota | 29.59 | 751.6 | 30.46 | 776.2 | —18 | —27.8 | 100 | NW | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Philadelphia, Pa | 30.64 | 778.2 | 30.70 | 779.8 | 23 | — 5.0 | 73 | NE | 4 | 1.8 | | 2cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Phœnix, Arizona | 28.79 | 731.3 | 30.57 | 776.5 | 60 | 15.6 | 34 | E | 3 | 1.3 | | 2cs | 0 | SW | | 0 | 0 | Fair | |
| Pike's Peak, Colorado | 17.60 | 447.0 | 29.81 | 757.2 | 10 | —12.2 | 100 | SW | 8 | 3.6 | | | 10n | | SW | 0.04 | 1.0 | Light snow | |
| Ploche, Nevada | 24.07 | 611.4 | 29.84 | 757.9 | 25 | — 3.9 | 88 | N | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.55 | 750.6 | 30.41 | 772.4 | 35 | 1.7 | 61 | S | 7 | 3.1 | | 5c | 0 | W | | 0 | 0 | Fair | |
| Port Huron, Michigan | 29.40 | 746.7 | 30.08 | 764.0 | 36 | 2.2 | 90 | S | 16 | 7.2 | | | 10s | | Calm | 0.04 | 1.0 | Cloudy | |
| Portland, Maine | 30.09 | 779.5 | 30.75 | 781.0 | 15 | — 9.4 | 65 | NW | 8 | 3.6 | | 5k | 0 | Calm | | 0 | 0 | Fair | |
| Portland, Oregon | 30.01 | 762.2 | 30.12 | 765.0 | 37.0 | 2.8 | 86 | NW | 3 | 1.3 | | Haze | 0 | Calm | | 0 | 0 | Clear | |
| Prescott, Arizona | 24.61 | 625.1 | 29.97 | 761.2 | 42 | 5.6 | 58 | W | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.15 | 740.4 | 29.98 | 761.5 | 50 | 10.0 | 78 | SE | 28 | 12.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Punta Rassa, Florida | 30.30 | 769.6 | 30.32 | 770.1 | 61 | 16.1 | 77 | NE | 16 | 7.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Red Bluff, California | 29.65 | 753.1 | 30.02 | 762.5 | 42 | 5.6 | 50 | N | 5 | 2.2 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Rio Grande City, Texas | 29.90 | 759.4 | 30.12 | 765.0 | 64 | 17.8 | 88 | SE | 12 | 5.4 | | | 10s | | SE | 0 | 0 | Cloudy | |
| Rochester, New York | 29.61 | 752.1 | 30.26 | 768.6 | 31 | — 0.6 | 89 | SW | 12 | 5.4 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Roseburg, Oregon | 29.46 | 748.3 | 30.05 | 763.3 | 33.0 | 0.6 | 95 | W | 1 | 0.4 | | Haze | 1s | | Calm | 0 | 0 | Fair | |
| Sacramento, California | 29.91 | 759.7 | 29.99 | 761.7 | 48 | 6.1 | 67 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.66 | 753.4 | 30.25 | 768.3 | 48 | 8.9 | 49 | S | 12 | 5.4 | | | 10s | | W | 0 | 0 | Cloudy | |
| St. Marks, Florida | 30.45 | 773.4 | 30.47 | 773.9 | 41 | 5.0 | 82 | NE | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.52 | 749.8 | 30.44 | 773.2 | 10 | —12.2 | 58 | NW | 6 | 2.7 | | 8cs | 0 | NW | | 0.13 | 3.3 | Fair | |
| Salt Lake City, Utah | 25.75 | 654.0 | 30.08 | 764.0 | 29 | — 1.7 | 45 | NE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| San Antonio, Texas | 29.43 | 747.5 | 30.01 | 762.2 | 64 | 17.8 | 89 | SE | 4 | 1.8 | | | 10ks | | SE | Inap. | Inap. | Cloudy | |
| San Diego, California | 29.97 | 761.2 | 30.04 | 763.0 | 56 | 13.3 | 81 | Calm | 0 | 0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.58 | 750.0 | 30.22 | 767.6 | 41 | 5.0 | 57 | SW | 19 | 8.5 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Sandy Hook, New Jersey | 30.07 | 779.0 | 30.70 | 779.8 | 27 | — 2.8 | 76 | SE | 16 | 7.2 | | | 10ks | | S | 0 | 0 | Cloudy | |
| San Francisco, California | 29.93 | 760.2 | 30.00 | 762.0 | 49.7 | 9.8 | 75 | S | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 23.24 | 590.3 | 29.78 | 756.4 | 38 | 3.3 | 54 | E | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Savannah, Georgia | 30.48 | 774.2 | 30.58 | 776.7 | 41 | 5.0 | 82 | NE | 12 | 5.4 | | | 10s | | NE | 0 | 0 | Cloudy | |
| Shreveport, Louisiana | 30.09 | 764.3 | 30.31 | 769.9 | 55 | 12.8 | 68 | SE | 6 | 2.7 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Silver City, New Mexico | 24.30 | 617.2 | 30.57 | 776.5 | 40 | 4.4 | 40 | Calm | 0 | 0 | | 0 | 2s | | Calm | 0 | 0 | Fair | |
| Smithville, North Carolina | 30.60 | 777.2 | 30.64 | 778.2 | 32 | 0.0 | 79 | N | 12 | 5.4 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | | | | | | | | | | | | | | | | | | | |
| Stockton, Texas | 27.00 | 685.8 | 30.00 | 762.0 | 49 | 9.4 | 71 | SE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Thatcher's Island, Mass. | 30.66 | 778.8 | 30.73 | 780.5 | 23 | — 5.0 | 60 | SW | 4 | 1.8 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Toledo, Ohio, | 29.46 | 748.3 | 30.16 | 766.1 | 40 | 4.4 | 56 | S | 20 | 8.9 | | | 10s | | Calm | Inap. | Inap. | Cloudy | |
| Tucson, Arizona | 27.55 | 699.8 | 30.10 | 764.5 | 50 | 10.0 | 44 | S | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.83 | 757.7 | 30.36 | 771.1 | 31.5 | — 0.3 | 89 | SE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Unalashka, Aleutian Islands | | | | | 22 | — 5.6 | 86 | W | | | 6 | | 10s | | NW | | | Cloudy | |
| Uvalde, Texas | 29.23 | 742.4 | 30.04 | 763.0 | 62 | 16.7 | 77 | SE | 8 | 3.6 | | | 10s | | S | Inap. | Inap. | Cloudy | |
| Vicksburg, Mississippi | 30.17 | 766.3 | 30.44 | 773.2 | 47 | 8.3 | 70 | SE | 12 | 5.4 | | 0 | 8s | | SE | 0 | 0 | Fair | |
| Virginia City, Montana | 24.30 | 617.2 | 29.78 | 756.4 | 15 | — 9.4 | 65 | SE | 1 | 0.4 | | 0 | 0 | | | 0.12 | 3.0 | Clear | |
| Visalia, California | 29.65 | 753.1 | 30.03 | 762.8 | 42.5 | 5.8 | 77 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Washington, D. C. | 30.59 | 777.0 | 30.72 | 780.3 | 26 | — 3.3 | 75 | SE | 1 | 0.4 | | 2cs | Fog | SE | SE | 0 | 0 | Fair | |
| Wickenburg, Arizona | | | | | 45 | 7.2 | 61 | NW | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.52 | 775.2 | 30.61 | 777.5 | 27 | — 2.8 | 76 | N | 7 | 3.1 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Winnemucca, Nevada | 25.77 | 654.6 | 30.13 | 765.3 | 19 | — 7.2 | 85 | E | 13 | 5.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Wood's Holl, Mass. | 30.08 | 779.3 | 30.72 | 780.3 | 27 | — 2.8 | 77 | N | 3 | 1.3 | | | 10ks | | NE | Inap. | Inap. | Cloudy | |
| Yankton, Dakota | 29.25 | 742.9 | 30.74 | 780.8 | — 1 | —18.3 | 84 | NW | 12 | 5.4 | | 10k | 0 | SW | | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.70 | 755.9 | 29.92 | 760.0 | 58 | 14.4 | 53 | W | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark. | 28.62 | 726.9 | 30.03 | 762.8 | 53 | 11.7 | 93 | | | | | | | | | | | | J. B. Gordon. |
| Havana, Cuba, W. I. | 30.14 | 765.5 | 30.19 | 766.8 | 73 | 22.8 | 71 | NE | 4.8 | 2.1 | | 4k | 4ks | NE | NE | 0 | 0 | Cloudy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | | | | | | | | | | | | | | | | | | | James Gall. |
| Medellin, Colombia, S. A. | 25.24 | 641.1 | | | 63.5 | 17.5 | 79 | Calm | 0 | 0 | | 3c;cs | 1s | | | 0.01 | 0.3 | | Thomas Herran. |
| Navassa, W. I. | 29.94 | 760.5 | 30.02 | 762.5 | 77 | 25.0 | | S | | | | | | | | 0.02 | 0.5 | Partly cl'dy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 29.98 | 761.5 | 29.98 | 761.5 | 81 | 27.2 | 74 | NE | | | 3 | 3c | 5k | E | | 0 | 0 | Fair | O. J. Hering |
| Santiago de Cuba, W. I. | | | | | | | | | | | | | | | | | | | Robert Mason. |
| St. Thomas, W. I. | | | | | | | | | | | | | | | | | | | G. O. Gellich. |
| York Factory, B. A. | 30.22 | 767.6 | 30.27 | 768.8 | —28.0 | —33.3 | | W | 7 | 3.1 | | 2ck | 1s | NW | W | 0 | 0 | Fair | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,676 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m., Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,890 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.855 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.39 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.45 in. The instrumental error of the barometer at Medellin is not known.

## UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.92 | 760.0 | 47 | 8.3 | 47 | 8.3 | 62 | SE | 5 | 2.2 | ..... | ..... | 5 | ..... | SE | 0 | 0 | ..... | ..... | Fair | |
| Navy Yard, Pensacola, Fla. | 30.52 | 775.2 | 48 | 8.9 | 48 | 8.9 | 78 | NE | 16 | 7.2 | ..... | ..... | 10 | ..... | NE | 0 | 0 | ..... | ..... | Threatening | |
| Navy Yard, Portsmouth, N.H | 30.70 | 779.8 | 54 | 12.2 | 16 | — 8.9 | 83 | NNW | ... .. | ..... | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Naval Hospital, Yokohama, Japan.....* | 30.03‡ | 762.8‡ | ..... | ..... | 55 | 12.8 | 97 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | W | 0.48 | 12.2 | ..... | ..... | Raining | |
| Adams. Panama ..... | 30.00 | 762.0 | 77 | 25.0 | 76 | 24.4 | 95 | NW | ..... | ..... | 1 | ..... | 5 | ..... | N; W | ..... | ..... | ..... | ..... | Fair | |
| Alaska. Pichilinque Bay, Mexico | 30.12 | 765.0 | 73 | 22.8 | 62 | 16.7 | 83 | SSE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | Smooth | ..... | Blue sky | |
| Alliance, Villafranca, France..... | 29.95‡ | 760.7‡ | ..... | ..... | 55 | 12.8 | 44 | SSW | ..... | ..... | 0-1 | ..... | 2 | ..... | S; W | ..... | ..... | Light | S | Clear | |
| Ashuelot, Hong-Kong, China. ..... | 29.94‡ | 760.5‡ | ..... | ..... | 69 | 15.0 | 88 | E | ..... | ..... | 4 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Rainy | |
| Canonicus, New Orleans, La..... | 30.35 | 770.9 | 42 | 5.6 | 60 | 10.0 | 93 | NE | ..... | ..... | 2 | ..... | 5 | ..... | NE | ..... | ..... | ..... | ..... | Fair | |
| Colorado, New York, N. Y..... | 30.64 | 778.2 | 24 | — 4.4 | 23 | — 5.0 | 100 | E | 5 | 2.2 | ..... | ..... | 10 | ..... | SSE | 0 | 0 | ..... | ..... | Overcast | |
| Constitution, Lisbon, Portugal..... | 30.11‡ | 764.8‡ | ..... | ..... | 54 | 12.2 | 87 | ENE | ..... | ..... | 1 | ..... | 4 | ..... | Calm | ..... | ..... | ..... | ..... | Light haze | |
| Despatch, Constantinople, Turkey | 29.71‡ | 754.6‡ | ..... | ..... | 62 | 16.7 | 51 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | NW | ..... | ..... | Smooth | ..... | Cloudy | |
| Franklin, Norfolk, Va..... | 30.85 | 783.6 | 72 | 22.8 | 35 | 1.7 | 80 | N | 38 | 2.1 | ..... | ..... | 10 | ..... | E | 0 | 0 | ..... | ..... | Cloudy | |
| Gettysburg, Genoa, Italy ..... | 29.88‡ | 758.9‡ | ..... | ..... | 56 | 13.3 | 75 | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | D. clouds | |
| Hartford, Montevideo, Uruguay... | 29.93 | 760.2 | 76 | 24.4 | 78 | 25.6 | 61 | NW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0 | 0 | Smooth | ..... | Fair | |
| Lackawana, Panama.....*... | 29.75‡ | 755.6‡ | ..... | ..... | 75 | 23.9 | 95 | NNW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Michigan, Erie, Pa.....† | 30.09 | 764.3 | ..... | ..... | 36 | 2.2 | 90 | S | ..... | ..... | 6 | ..... | 5 | ..... | S | ..... | ..... | ..... | ..... | Cloudy | |
| Monocacy. Ning Po, China... .....* | 30.32‡ | 770.1‡ | ..... | ..... | 39 | 3.9 | 75 | NNW | ..... | ..... | 2-5 | ..... | 10 | ..... | NW | ..... | ..... | ..... | ..... | Cloudy | |
| Monongehela, Yokohama, Japan ....*.. | 29.91‡ | 759.7‡ | ..... | ..... | 56 | 13.3 | 81 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Mod'ate | Mod'ate | ..... | ..... | Raining | |
| New Hampshire, Port Royal, S. C..... | 30.55 | 776.0 | 40 | 4.4 | 39 | 3.9 | 90 | N | 19 | 8.5 | ..... | ..... | 8 | ..... | NNE | ..... | ..... | ..... | ..... | Cloudy | |
| Onward, Callao, Peru.....† | 30.01 | 762.2 | ..... | ..... | 67 | 19.4 | 95 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Foggy | |
| Palos, Tientsin, China..... | 30.35 | 770.9 | 32 | 0.0 | 25 | — 3.9 | 100 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 25 | — 3.9 | 62 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy | |
| Pensacola, S. 38° 28′, W. 80° 04′..... | 29.82‡ | 757.4‡ | ..... | ..... | 65 | 18.3 | 89 | SW | 6 | 2.7 | ..... | ..... | 8 | ..... | SW | 0.1 | 3. | Smooth | W | Fair | |
| Powhatan, Key West, Fla..... | 30.21‡ | 767.3‡ | ..... | ..... | 70 | 21.1 | 75 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Mod'ate | NE | Clear | |
| Quinnebaug, Villafranca, France..... | 29.96‡ | 761.0‡ | ..... | ..... | 54 | 12.2 | 55 | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear | |
| Ranger. Kobe, Japan.....*... | 29.98‡ | 761.5‡ | ..... | ..... | 62 | 16.7 | 77 | WNW | ..... | ..... | 1 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | ..... | Fair | |
| Richmond, Naples, Italy..... | 29.91‡ | 759.7‡ | ..... | ..... | 54 | 12.2 | 54 | NNW | ..... | ..... | 1 | ..... | 5 | ..... | NNW | 0 | 0 | Smooth | SSE | Fair | |
| Rio Bravo, Brownsville, Texas..... | 30.10 | 764.5 | 68 | 20.0 | 67 | 19.4 | 95 | SE | ..... | ..... | 2 | ..... | 10 | ..... | SE | ..... | ..... | ..... | ..... | Misty | |
| Santee, Annapolis, Md... ..... | 30.71‡ | 780.0‡ | ..... | ..... | 34 | 1.1 | ..... | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Saratoga, Washington, D. C..... | 30.78 | 781.8 | ..... | ..... | 23 | — 5.0 | 86 | Calm | ..... | ..... | 0 | ..... | 1 | ..... | Calm | 0 | 0 | ..... | ..... | D. clouds | |
| St. Louis, League Island, Pa ..... | 30.49 | 774.4 | 43 | 6.1 | 26 | — 3.3 | ..... | ESE | 4 | 1.8 | ..... | ..... | 5 | ..... | SE | 0 | 0 | ..... | ..... | Fair | |
| Supply, N. 23° 19′, W. 63° 56′..... | 30.10‡ | 764.5‡ | ..... | ..... | 78 | 25.6 | 86 | S | ..... | ..... | 4 | ..... | 5 | ..... | NNW | ..... | ..... | Smooth | ..... | Fair | |
| Trenton, Villafranca, France..... | 29.90‡ | 759.4‡ | ..... | ..... | 55 | 12.8 | 62 | SSW | ..... | ..... | 0-1 | ..... | 2 | ..... | SW | 0 | 0 | Mod'ate | S | Clear | |
| Tuscarora, Acapulco, Mexico..... | 29.98‡ | 761.5‡ | ..... | ..... | 78 | 25.6 | 69 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Cloudy | |
| Wabash, Boston, Mass..... | 30.76‡ | 781.8‡ | ..... | ..... | 13 | —10.6 | 62 | NW | 2 | 0.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy | |
| Wyoming, Smyrna, Turkey..... | 29.77‡ | 756.1‡ | ..... | ..... | 64 | 17.8 | 75 | S | ..... | ..... | 1-2 | ..... | 10 | ..... | ..... | ..... | ..... | Smooth | S | ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

# UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | CHARACTER. | DIRECTION FROM— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Dakota, Capt. Morse | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | |
| S. S. Granada, | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| N. 15° 22′, W. 94° 02′ †* | | 30.15‡ | 765.‡ | 72 | 22.2 | 95 | N | | | 6 | | 0 | | | 0 | Short chop | NNW | Hazy | Capt. Austin. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia | | | | | | | | | | | | | | | | | | | R. O. Ghest, 1st Officer |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation, no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, Hong-Kong, China * | | 29.82‡ | 757.4‡ | 60 | 15.6 | 88 | ENE | | | 5 | | cs | | NE | | Mod'ate | NE | Raining | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 38° 10′, W. 176° 35′ † | | 29.97‡ | 761.2‡ | 60 | 15.6 | ?? | SE | | | 5 | | kn | | SE | Heavy | Swell | W | Raining | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 26° 46′, W. 24° 05′ | | 30.20‡ | 767.1‡ | 70.5 | 21.4 | 59 | NE | | | 5 | | 8 | | NE | | Mod'ate | NNW | Fine | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 39° 55', W. 65° 25' | | 30 61‡ | 777.5‡ | 40 | 4.4 | | NE | | | 6 | | 9 | | NE | 0 | Smooth | NE | Cloudy | Captain Sargent. |
| S. S. Ohio, | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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**ALLAN LINE MARINE SERIES.**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.**

Furnished by the coöperation of the Observer named.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

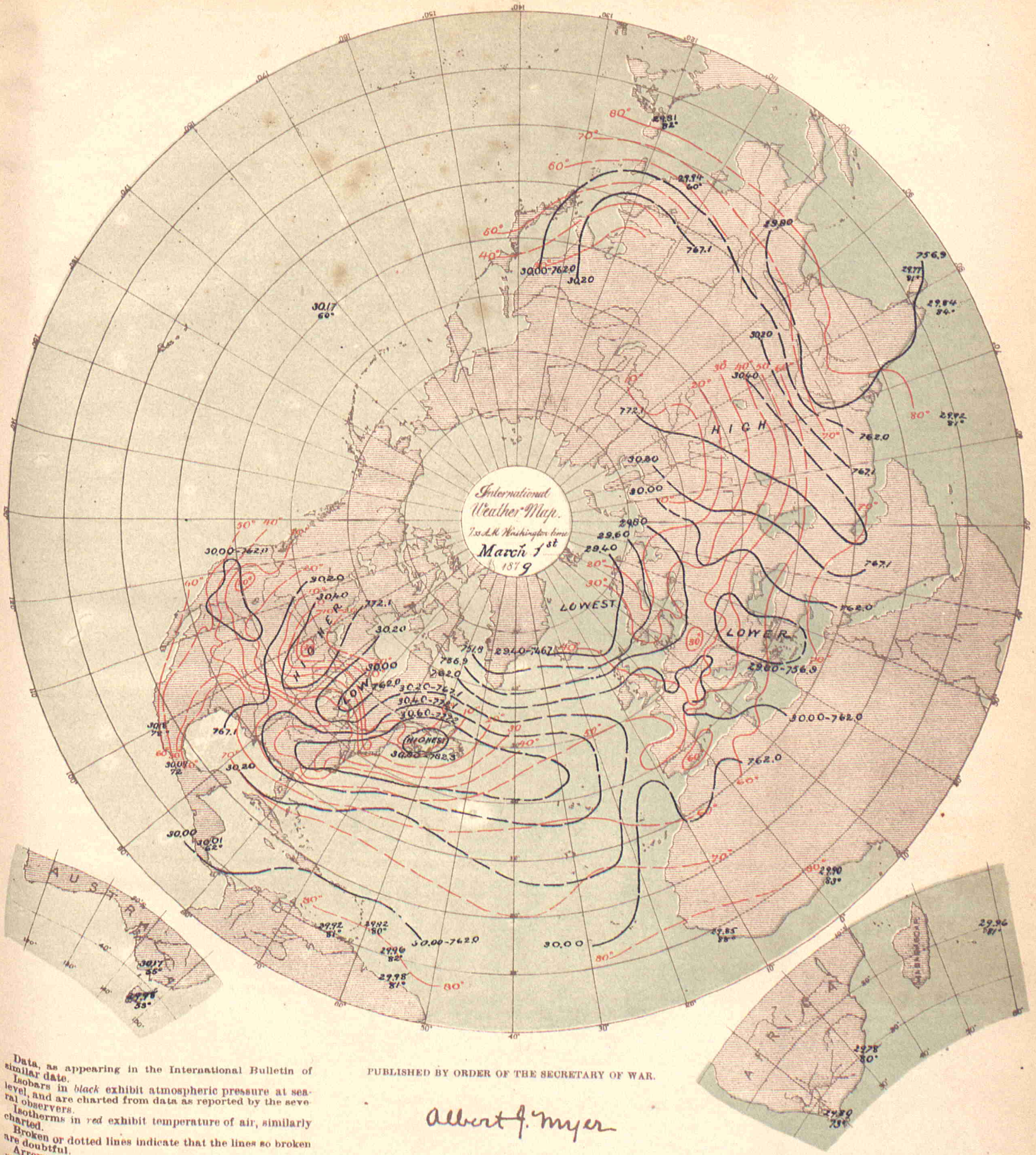
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer. U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE RUSSELL PRINTING CO. 270 DEVONSHIRE ST. BOSTON

# BULLETIN

## OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 2, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 29.98 | 761.4 | 56.8 | 13.8 | 80 | SW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | Foggy | |
| Nemours | ..... | ..... | 29.91 | 759.7 | 59.9 | 15.5 | 91 | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Kesxuche. |
| Algiers | ..... | ..... | 29.97 | 761.1 | 60.1 | 15 6 | 56 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Tourillere. |
| La Calle | ..... | ..... | 30.04 | 763.0 | 60.1 | 15.6 | 71 | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.524 | 13.3 | Cloudy | Foufrede. |
| Tunis | ..... | ..... | 30.12 | 765.0 | 57.2 | 14.0 | 79 | NW | ..... | ..... | 4 | ..... | 10, | ..... | ..... | 0.079 | 2.0 | Rainy | Jacques. |
| Sfax | ..... | ..... | 30.08 | 764.0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 29.97 | 761.1 | 59.9 | 15.5 | 13 | SW | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Herbin. |
| Tebessa | ..... | ..... | 30.11 | 764.9 | 51.8 | 11.0 | 23 | E | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Watrin. |
| Geriville | ..... | ..... | 29.95 | 760.6 | 56.3 | 13.5 | 95 | S | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Brugniaux. |
| Laghouat | ..... | ..... | 30.13 | 765.3 | 53.2 | 11.8 | 40 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bertrand. |
| Biskra | ..... | ..... | 30.10 | 764.5 | 60.6 | 19.2 | 31 | WNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.37 | 746.0 | 29.93 | 760.3 | 44.1 | 6.7 | 70 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.189 | 4.8 | ..... | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.08 | 738.7 | 29.88 | 759.0 | 32.7 | 0.4 | 89 | NNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.075 | 1.9 | ..... | Dr. Wierzbiski |
| Eperies | 28.90 | 734.0 | 29.81 | 757.2 | 33.4 | 0.8 | 85 | N | ..... | ..... | 1 | ..... | 10s | ..... | S | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.70 | 729.0 | 29.98 | 761.6 | 40.3 | 4.6 | 61 | NW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.32 | 719.4 | 29.81 | 757.1 | 32.7 | 0.4 | 94 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.069 | 1.60 | Snowing | Prof. A. Gottschling. |
| Kremsmünster | 28.70 | 729.1 | 30.11 | 764.7 | 34.3 | 1.3 | 72 | WNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. C. Waguer. |
| Lemberg | 28.77 | 730.8 | 29.80 | 756.8 | 32.7 | 0.4 | 90 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.008 | 0.2 | ..... | Dr. T. Stanecki. |
| Pola | 29.80 | 757.0 | 29.92 | 759.9 | 49.6 | 9.8 | 64 | WNW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office. |
| Szathmar | 29.43 | 747.6 | 29.91 | 759.7 | 36.3 | 2.4 | 82 | W | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Julius Osics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 29.82 | 757.4 | 29.92 | 760.0 | 46.2 | 7.9 | 75 | NNW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | P. Busin. |
| Vienna | 29.27 | 743.5 | 30.02 | 762.5 | 33.1 | 0.6 | 85 | NNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.134 | 3.4 | Snowing | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Royal Observatory |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. E. de Cae. |
| Maeseyck | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Pierrot |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:9, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum't'al error and temperature. Inches. | Barometer. Corrected for instrum't'al error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.64 | 760.3 | 29.64 | 762.8 | 43.8 | 6.6 | ..... | SSW | 22 | 9.8 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | Blue sky | W. Boswell. |
| Ardrossan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.86 | 758.4 | 45.5 | 7.5 | ..... | SSW | 29 | 13.0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.01 | 762.2 | 46.0 | 7.8 | ..... | SW | 27 | 12.1 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.99 | 761.7 | 43.9 | 6.6 | ..... | SW | 18 | 8.0 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D, clouds | Thomas Mackereth. |
| Bradford, Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.93 | 760.2 | 29.96 | 761.0 | 81.5 | 27.5 | ..... | NE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 30.13 | 765.3 | 48.0 | 8.9 | ..... | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | H. Todd. [C. |
| Cardington | ..... | ..... | 30.10 | 764.5 | 45.0 | 7.2 | ..... | WSW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | John McLaren. |
| Chatham, School M. E. | 30.02 | 762.5 | 30.15 | 765.8 | 50.1 | 10.1 | ..... | SW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Corpl. Daly, R. E. |
| Dartmoor | 28.63 | 727.2 | 30.13 | 765.3 | 42.0 | 5.6 | ..... | N | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Fine | Alexander Watt. |
| Donaghadee | 29.79 | 756.7 | 29.83 | 757.7 | 47 | 8.3 | ..... | SW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 30.13 | 765.3 | 30.16 | 766.1 | 43 | 6.1 | ..... | WNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Misty | J. Costello. |
| Falmouth, Observatory | 29.95 | 760.7 | 30.19 | 766.8 | 45.9 | 7.7 | ..... | WSW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| Fort Napier, (Natal) | 27.42 | 696 5 | 29.74 | 755.4 | 91.0 | 32.8 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.61 | 752.1 | 29.84 | 757.9 | 88 | 31.1 | ..... | E | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.83 | 757.7 | 47 | 8.3 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.92 | 760.0 | 29.97 | 761 2 | 57.5 | 14.2 | ..... | E | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.86 | 758.8 | 29.76 | 755.9 | 43.0 | 6.1 | ..... | SW | ..... | ..... | 8 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | D. G. Maclean. |
| Great Yarmouth | 30.10 | 764.5 | 30.10 | 764.5 | 44 | 6.7 | ..... | W | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | Misty | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.98 | 761.5 | 30.15 | 765.8 | 47.8 | 8.8 | ..... | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | The Staff, for G. B. Airy |
| Guernsey | 29.96 | 761.0 | 30.18 | 766.6 | 47.5 | 8.6 | ..... | SSW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F.R.S |
| Helston | 30.01 | 762.2 | 30.14 | 765.5 | 47 | 8.3 | ..... | S | ..... | ..... | 0 | ..... | 1c | ..... | ..... | 0 | 0 | Fine | M. P. Moyle. |
| Holyhead | 29.93 | 760.2 | 29.98 | 761.5 | 45 | 7.2 | ..... | SSW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | John Tilston. |
| Jersey | 29.93 | 760.2 | 30.23 | 767.8 | 45.3 | 7.4 | ..... | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Misty | J. Fisher. |
| Kew, Observatory | 30.13 | 765.3 | 30.16 | 766.1 | 45.4 | 7.4 | ..... | W | 7 | 3.1 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | The Meteorological Of. |
| Leicester, Museum | 29.83 | 757.7 | 30.10 | 764.5 | 43.5 | 6.4 | ..... | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.83 | 757.7 | 29.91 | 759.7 | 62 | 16.7 | ..... | NW | ..... | ..... | 3 | ..... | 4k | ..... | ..... | ..... | ..... | D. clouds | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.44 | 747.8 | 29.53 | 750.0 | 49 | 9.4 | ..... | WSW | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | ⅜ clouded | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.24 | 768.1 | 70.0 | 21.1 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | C. S. Duncombe. |
| Nottingham, Observatory | 29.87 | 758.7 | 30.07 | 763.8 | 45.4 | 7.4 | ..... | SW | ..... | ..... | 4 | ..... | 1c;k | ..... | SW | 0 | 0 | Blue sky | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.55 | 750.6 | 30.06 | 764.0 | 47.0 | 8.3 | ..... | SW | ..... | ..... | 4-5 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.13 | 765.3 | 45 | 7.2 | ..... | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | H. E. Bellamy. |
| Plymouth | 30.10 | 764.5 | 30.18 | 766.6 | 44.2 | 6.8 | ..... | WNW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | John Merrifield. |
| Roche's Point | 30.02 | 762.5 | 30.06 | 762.5 | 47 | 8.3 | ..... | SW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | ⅜ clouded | W. Kennedy. |
| Saint Ann's Head | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys. | ..... | ..... | 29.34 | 745.2 | 47.4 | 8.6 | ..... | SSW | 25 | 11.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Dr. H skins. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 29.65 | 753.1 | 43.8 | 6.6 | ..... | N | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | W. H. Lyne. |
| Sheffield | 29.76 | 755.9 | 30.04 | 763.0 | 46.5 | 8.1 | ..... | S | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0.06 | 1.5 | Blue sky | W. F. Cooper. |
| Silloth Rectory | 29.80 | 756.9 | 29.83 | 757.7 | 45.7 | 7.6 | 82 | SW | ..... | ..... | 8 | ..... | 6 | ..... | ..... | 0.055 | 1.40 | D. clouds | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.59 | 751.6 | 29.99 | 761.7 | 43.4 | 6.3 | ..... | SW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | Misty | Rev. S. J. Perry. |
| Stratfield Turgiss | 29.94 | 760.5 | 30.16 | 766.1 | 47.9 | 8.8 | ..... | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | C.H.Griffith, F. R.S. |
| Thurso | 29.40 | 746.7 | 29.46 | 748.3 | 46 | 7.8 | ..... | SW | ..... | ..... | 8 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | John Trotter. |
| Truro, Royal Institution | 30.08 | 764.0 | 30.15 | 765.8 | 51 | 10.6 | ..... | SW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | W. Newcombe. |
| Valencia, Observatory | 29.94 | 760.5 | 29.97 | 761.2 | 48.3 | 9.1 | ..... | S | 33 | 14.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.04 | 763.0 | 30.08 | 764.0 | 62 | 16.7 | 96 | S | 18 | 8.0 | ..... | 0 | 4 | ..... | ..... | 0.152 | 3.86 | Raining | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.05 | 763.3 | 57.0 | 14.0 | 82 | S | ..... | ..... | 1 | ..... | 10k | ..... | ..... | 0 | 0 | Cloudy | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.76 | 755.9 | 48.4 | 9.1 | ..... | W | ..... | ..... | 3 | ..... | 9k | ..... | ..... | 0.02 | 0.5 | Cloudy | Andrew Gibb. |
| Mauritius, Observatory | 29.77 | 756.1 | 29.96 | 761.0 | 80.2 | 26.8 | 55 | E | 4.5 | 2.0 | ..... | 0 | 6 | ..... | NW | 0 | 0 | Fine | C. Meldrum. |
| Melbourne, Observatory | 30.03 | 762.7 | 30.12 | 765.0 | 55.0 | 12.8 | 85 | SSE | 2 | 0.9 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | Very fine | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 29.40 | 746.7 | 47 | 8.3 | ..... | WSW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.30 | 744.2 | 40 | 4.4 | ..... | SW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; Freetown reduced to freezing but not to sea-level. Amount of cloudiness for Holyhead by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day,) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day,) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Barometer. Corrected for instrum't'al error and temperature. Inches. | Barometer. Corrected for instrum't'al error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. Fawn | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Brig Alliance, N. 18° 35', W. 39° 05' | ..... | ..... | 30.09‡ | 764.3‡ | 77.5 | 25.3 | ..... | ENE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Capt. W. Scott. |
| S. S. Amanda, N. 11° 42', E. 60° 50' | ..... | ..... | 29.97‡ | 761.2‡ | 78.5 | 25.8 | ..... | NE | ..... | ..... | 5 | ..... | 4 | ..... | ..... | ..... | ..... | Misty | Capt. B. Boyes. |
| Barque Belle Isle, N. 23° 10', W. 35° 30' | ..... | ..... | 30.15 | 765.8 | 73 | 22.8 | ..... | NE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 6 | NE | D. clouds | Capt. A. J. Brown. |
| Ship British Commodore, N. 44° 45', W. 30° 25' | ..... | ..... | 30.36 | 771.1 | 58 | 14.4 | ..... | W | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 4 | w & nw | D. clouds | Capt. J. W. Thorne. |
| Barque City of Agra, S. 4° 42', W. 27° 01' | ..... | ..... | 29.95‡ | 760.7‡ | 80.8 | 27.1 | ..... | SE | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Capt. Thos. Young. |
| Barque Commewyne, N. 12° 16', W. 56° 14' | ..... | ..... | 30.00‡ | 762.0‡ | 82.5 | 28.1 | ..... | ENE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | Capt. A. Buchan. |
| ——Denbighshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Murdoch. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole, N. 39° 34' W. 15° 09' | ..... | ..... | 30.08‡ | 764.0‡ | 53 | 11.7 | ..... | NE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven, N. 6° 01', E. 79° 54' | ..... | ..... | 29.77‡ | 756.1‡ | 82 | 27.8 | ..... | WSW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Capt. C. W. Pearson. |
| S. S. Wyberton, N. 7° 10', E. 75° 04' | ..... | ..... | 29.89‡ | 759.2‡ | 84.5 | 29.2 | ..... | W | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 2 | ..... | D. clouds | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.25 | 666.7 | 29.97 | 761.2 | 65.3 | 18.5 | 85 | NE | ..... | ..... | 1 | 4cs;s | ..... | NE | ..... | 0 | 0 | ..... | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.91 | 759.6 | 29.95 | 760.8 | 35.2 | 1.8 | 84 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 29.93 | 760.2 | 29.95 | 760.7 | 34.5 | 1.4 | 94 | W | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.58 | 751.2 | 29.62 | 752.3 | 9 0 | —12.8 | 80 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Faröe) | 28.87 | 733.2 | 28.90 | 734.1 | 34.9 | 1.6 | 98 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | |
| Vestervig | 29.70 | 754.3 | 29.87 | 758.6 | 34.9 | 1.6 | 96 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.71 | 754.5 | 30.26 | 768.5 | 40.3 | 4.6 | 93 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Collignon, Director. |
| Amiens, Normal School | 30.07 | 763.8 | 30.19 | 766.8 | 41.4 | 5.2 | 84 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered... | Bonvallet, Director. |
| Avignon, Normal School | 29.98 | 761.4 | 30.06 | 763.4 | 53.6 | 12 | 54 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | M. Giraud, Director. |
| Bar-sur-Seine | 29.64 | 752.9 | 30.22 | 767.6 | 41.9 | 5.5 | 94 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | C. Saillard, Director. |
| Beauvais, Normal School | 29.95 | 760.7 | 30.24 | 768.2 | 43.5 | 6.4 | 80 | ENE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.26 | 743.2 | 30.18 | 766.6 | 43.9 | 6.6 | 82 | S | ..... | ..... | 2 | ..... | 2 | ..... | SW | 0 | 0 | Slightly cl'dy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.31 | 744.5 | 30.22 | 767.6 | 46.6 | 8.1 | 81 | N | ..... | ..... | 1 | ..... | 2 | N | N | 0 | 0 | Slightly cl'dy | M. Marlot, Director. |
| Bourges, Normal School | 29.60 | 751.8 | 30.16 | 766.1 | 47.8 | 8.8 | 84 | N | ..... | ..... | 4 | ..... | 8 | N | N | 0 | 0 | Foggy | A. Waquet, Director. |
| Brest, Naval Observatory | 29.88 | 759.0 | 30.13 | 765.2 | 51.1 | 10.6 | 74 | SE | ..... | ..... | 1 | ..... | 1 | ..... | Calm | 0.039 | 1.00 | ..... | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.54 | 750.4 | 29.96 | 760.9 | 57.6 | 14.2 | 67 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | September, Director. |
| Caen, Normal School | 30.12 | 765.1 | 30.20 | 767.1 | 46.8 | 8.2 | 70 | SSE | ..... | ..... | 1 | ..... | 5 | ..... | SSE | 0 | 0 | Cloudy | M. Lair, Director. |
| Chartres, Normal School | 29.58 | 751.2 | 30.19 | 766.7 | 48.4 | 8 | 91 | E | ..... | ..... | 1 | ..... | 8 | ..... | W | 0.04 | 1. | ..... | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.92 | 760.0 | 30.25 | 768.4 | 45.0 | 7.2 | 85 | NE | ..... | ..... | 2 | ..... | 8 | NE | NE | 0 | 0 | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.77 | 730.8 | 30.15 | 765.7 | 49.5 | 9.7 | 64 | NE | ..... | ..... | 1 | ..... | 8 | ..... | NW | 0.008 | 0.2 | Misty | Alluard, Director. |
| Commercy, Normal School | 29.33 | 744.9 | 30.22 | 767.6 | 40.1 | 4.5 | 99 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.47 | 12. | Covered | Dr. Coulet, Director. |
| Commune de Grésque* | 28.93 | 734.8 | 30.07 | 763.8 | 52.7 | 11.5 | 33 | NW | ..... | ..... | 2 | ..... | 2 | ..... | SW | 0 | 0 | ¼ covered | M. Kina, Director. |
| Grenoble, Normal School | 29.40 | 746.7 | 30.19 | 766.7 | 42.4 | 5.8 | 78 | ESE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear. | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.97 | 761.2 | 30.19 | 766.7 | 51.8 | 11.0 | 73 | N | ..... | ..... | 1 | ..... | 5 | ..... | ESE | 0 | 0 | Cloudy | Mouillot, Director |
| Le Mans, Normal School | 29.92 | 759.9 | 30.24 | 768 1 | 41.2 | 5.1 | 94 | ESE | ..... | ..... | 1 | ..... | 8 | ..... | E | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.26 | 743.1 | 30.24 | 768.0 | 43.8 | 6.3 | 74 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear. | Baudry, Director. |
| Lorient, Naval Observatory | 30.10 | 764.5 | 30.20 | 767.1 | 49.6 | 9.8 | 79 | SE | ..... | ..... | 2 | ..... | ..... | ..... | SE | 0 | 0 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Mirecourt, Normal School | 29.13 | 740.0 | 30.24 | 768.1 | 42.3 | 5.7 | 91 | N | ..... | ..... | 1 | ..... | n | ..... | S | 0.51 | 13. | ..... | M. Barbier, Director. |
| Nîmes, Normal School | 29.87 | 758.6 | 30.07 | 763.8 | 55.0 | 12.8 | 53 | N | ..... | ..... | 4 | ..... | 2 | ..... | NW | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 29.13 | 739.8 | 30.21 | 767.3 | 50.0 | 10 | 50 | N | ..... | ..... | 1 | ..... | cn | N | N | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 25.18 | 639.6 | ..... | ..... | 27.9 | — 2.3 | 100 | E | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.13 | 765.3 | 30.16 | 766.1 | 45.7 | 7.6 | 94 | E | ..... | ..... | 1 | ..... | 2 | E | E | 0 | 0 | ¼ covered | Lt. Decante, Director. |
| Rouen, Normal School | 30.16 | 766.0 | 30.24 | 768.2 | 44.8 | 7.1 | 68 | NW | ..... | ..... | 1 | ..... | 8 | ..... | SW | 0 | 0 | Very cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs' | 30.20 | 767.0 | 30.23 | 767.8 | 48.9 | 9.4 | 86 | SSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 30.06 | 763.5 | 30.23 | 767.7 | 44.6 | 7.0 | 76 | NE | ..... | ..... | 1 | ..... | ..... | ..... | NW | 0 | 0 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 29.11 | 739.5 | 30.22 | 767.6 | 48.2 | 9 | 61 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Huguet, Director. |
| Versailles Observatory | 29.71 | 754.7 | 30.21 | 767.2 | 44.1 | 6.7 | ..... | SE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.002 | 0.04 | ..... | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.45 | 748.1 | 30.19 | 766.7 | 50.5 | 10.3 | 76 | NNE | ..... | ..... | 1 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.92 | 760.0 | 29.95 | 760.7 | 75.2 | 24 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.32 | 8. | ..... | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 29.54 | 750.3 | 30.17 | 766.3 | 47.8 | 8.8 | 68 | NNE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | Cloudy | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 24.84 | 630.8 | 30.15 | 765.8 | 40.1 | 4.5 | 86 | SW | 7.4 | 3.3 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | 30.03 | 762.8 | 55.0 | 12.8 | 70 | WSW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.94 | 760.5 | ..... | ..... | 41.0 | 5.0 | 80 | W | ..... | ..... | 1 | ..... | 9 | ..... | W | 0.004 | 0.1 | ..... | Marié Davy, Director. |
| Perpignan | 30.00 | 762.0 | 30.11 | 764.7 | 51.8 | 11.0 | 68 | SE | 5.6 | 2.5 | ..... | ..... | 1 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.45 | 570.3 | ..... | ..... | 33.8 | 1.0 | ..... | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | Fair | Genil de Nansouty. |
| Toulouse, Observatory | 29.40 | 746.8 | 30.12 | 765.1 | 47.5 | 8.6 | 82 | ENE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | M. Mercadier Juller. |
| Tours | 30.07? | 763.8? | 30.19? | 766.8? | 45.3 | 7.4 | 81 | E | ..... | ..... | 1 | ..... | 8 | ..... | E | 0 | 0 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.32 | 770.0 | 30.34 | 770.6 | 37.9 | 3.3 | 75 | NE | 12.8 | 5.7 | ..... | clr | 10 | W | ..... | 0.008 | 0.2 | Covered | Marc Dechevrens, S. J. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
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| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Grenoque on the scale 0 to 4 and Brest on the scale 0 to 10; Mirecourt apparently gives cloud direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–1 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.24 | 742.8 | 30.09 | 764.2 | 35.1 | 1.7 | 75 | W | | | 3 | | 6 | | | 0.039 | 1.0 | | Prof. Dr. Hoh. |
| Berlin | 29.91 | 759.8 | 30.09 | 764.3 | 37.4 | 3.0 | 70 | NW | | | 1 | | 3 | | | 0.055 | 1.4 | Snowing | Prof. Arndt. |
| Breslau | 29.47 | 748.4 | 30.00 | 761.9 | 31.8 | — 0.1 | 93 | NW | | | 4 | | 10 | | | 0.163 | 4.13 | | Royal University Obs'y |
| Carlsruhe | 29.75 | 755.6 | 30.19 | 766.9 | 40.3 | 4.6 | 90 | SW | | | 2 | | 10 | | | 0.63 | 16. | | Albert Senz. |
| Cassel | 29.67 | 751.0 | 30.18 | 766.5 | 36.3 | 2.4 | 66 | SSE | | | 2 | | 10 | N | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 30.03 | 762.7 | 30.19 | 766.8 | 34.7 | 1.5 | 86 | SW | | | 3 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.87 | 758.8 | 30.26 | 768.5 | 38.5 | 3.6 | | NNE | | | 1 | | 10 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.71 | 729.3 | 30.11 | 764.8 | 38.1 | 3.4 | 71 | SE | | | 1 | | 10 | S | | 0.016 | 0.4 | Raining | M. Wilhelm. |
| Hamburg | 30.03 | 762.7 | 30.10 | 764.6 | 35.8 | 2.1 | 84 | W | | | 1 | | 10 | | | 0.008 | 0.2 | | Captain F. Hegemann. |
| Kiel | 30.02 | 762.6 | 30.04 | 763.0 | 36.7 | 2.6 | 94 | W | | | 3 | | 10 | | | 0.012 | 0.31 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.82 | 757.5 | 29.91 | 759.7 | 32.4 | 0.2 | 76 | SE | | | 2 | | 2 | | | 0.004 | 0.1 | Snowing | Prof. E. Luther. |
| Köslin | | | 29.92 | 759.9 | 32.5 | 0.3 | | NW | | | 2 | | 4 | | | 0.063 | 1.6 | | H. Müller. |
| Leipsic, Observatory | 29.73 | 755.2 | 30.17 | 766.3 | 36.7 | 2.6 | 63 | NW | | | 3 | | 8 | NW | | 0.146 | 3.7 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.86 | 758.5 | 29.91 | 759.7 | 28.8 | — 1.8 | 100 | Calm | | | 0 | | 0 | | | | | | Skalweit. |
| Neufahrwasser | 29.92 | 759.9 | 29 93 | 760.3 | 32.9 | 0.5 | 76 | NE | | | 1 | | 9 | | | 0.012 | 0.3 | | A. Lothes. |
| Posen | 29.72 | 754.8 | 30.02 | 762.5 | 34.5 | 1.4 | 79 | NW | | | 4 | | 10 | | | 0.240 | 6.1 | Snowing | Dr. Magener. |
| Strassburg (in Alsace) | 29.66 | 753.4 | 30.23 | 767.9 | 40.3 | 4.6 | 90 | S | | | 1 | | 10 | | | 0.015 | 0.37 | | Imp. University Observatory. |
| Stuttgart | 29.20 | 741.6 | 30.15 | 765.9 | 39.6 | 4.2 | 70 | W | | | 1 | | 10 | | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | | | | | | | | | | | | | | | | | | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.61 | 726.6 | 30.18 | 766.6 | 34.6 | 1.4 | 80 | W | 1.1 | 0.5 | | | 10 | | W | 0.067 | 1.7 | | Dr. Van Bebber. |
| Wustrow, Naval School | 30.00 | 761.9 | 30.02 | 762.5 | 32.7 | 0.4 | 92 | WSW | | | 3 | | 8s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.30 | 744.2 | 29.69 | 754.2 | 58.1 | 14.5 | | NE | | | 1.0 | | | | | | | ⅛ Clear | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the cooperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Deesa | 29.37 | 746.1 | 29.86 | 758.4 | 68.2 | 20.1 | 34 | WSW | 15.0 | 6.7 | | | 9 | SW | | 0 | 0 | D. clouds | |
| Bombay | 29.89 | 759.1 | 29.92 | 760.0 | 76.7 | 24.8 | 67 | NW | 14 | 6.3 | | | 3 | | WSW | 0 | 0 | D. clouds | |
| Lahore | 28.93 | 734.8 | 29.69 | 754.1 | 66.6 | 19.2 | 13 | NW | 5.9 | 2.6 | | | 10 | | | 0 | 0 | D. clouds | |
| Belgaum | 27.32 | 693.8 | 29.82 | 757.5 | 81.8 | 27.7 | 51 | W | 17.0 | 7.6 | | | 1 | | | 0 | 0 | | |
| Roorkee | 28.86 | 733.1 | 29.79 | 756.7 | 62.8 | 17.1 | 57 | SW | 3.3 | 1.5 | | | 10 | | | 0 | 0 | Gloomy | |
| Agra | 29.24 | 742.8 | 29.82 | 757.4 | 69.7 | 20.9 | 53 | E | | | | | 10 | | E | 0 | 0 | | |
| Nagpur | 28.73 | 729.7 | 29.75 | 755.7 | 89.0 | 31.7 | 33 | W | 2.7 | 1.2 | | | | | | 0 | 0 | D. clouds | |
| Lucknow | 29.46 | 748.2 | 29.84 | 758.0 | 70.3 | 21.3 | 53 | ENE | 1.4 | 0.6 | | | 10 | | | 0 | 0 | Overcast | |
| Allahabad | 29.49 | 749.0 | 29.80 | 757.0 | 79.1 | 26.2 | 42 | NE | 1.8 | 0.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.61 | 752.0 | 29.79 | 756.6 | 82.5 | 28.1 | 55 | W | 0.8 | 0.4 | | | 4 | W | W | 0 | 0 | D. clouds | |
| Hazaribagh | 27.78 | 705.6 | 29.78 | 756.5 | 79.6 | 26.4 | 23 | NW | 4.9 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.67 | 753.6 | 29.75 | 755.6 | 91.1 | 32.8 | 25 | WSW | 1.2 | 0.5 | | | | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.75 | 755.7 | 29.77 | 756.2 | 81.4 | 27.4 | 53 | N | 1.0 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.35 | 745.6 | 29.74 | 755.5 | 77.9 | 25.5 | 41 | NE | 6.4 | 2.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.73 | 755.2 | 29.83 | 757.6 | 78.5 | 25.8 | 85 | S | 5.8 | 2.6 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.49 | 749.1 | 29.84 | 757.8 | 65.9 | 18.8 | 81 | ENE | 0.8 | 0.4 | | | 10 | W | W | 0.05 | 1.3 | Overcast | |
| Jubbulpore | 28.42 | 721.9 | 29.78 | 756.3 | 82.8 | 28.2 | 35 | Calm | 2.4 | 1.1 | | | 1 | | | 0 | 0 | D. clouds | |
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Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,551 ft., or 411.5 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.51 | 749.5 | 29.93 | 760.2 | 47.7 | 8.7 | 61 | SE | 0.7 | 0.3 | | | 8 | | | 0 | 0 | | Prof. Giovanni Clodig. |
| Padua | 29.38 | 746.2 | 29.91 | 759.6 | 52.3 | 11.3 | 48 | W | | | 4 | | 1 | W | | 0 | 0 | | Prof. Dott. Lorenzoni |
| Milan | 29.79 | 756.6 | 29.90 | 759.5 | 48.2 | 9.0 | 63 | W | 3.8 | 1.7 | | | 3 | N | | 0 | 0 | | Prof. Schiaparelli. |
| Moncalieri | 29.07 | 738.4 | 30.06 | 762.0 | 46.6 | 8.1 | 61 | SSW | 1.8 | 0.8 | | | 1 | | | 0 | 0 | | Prof. P. F. Denza. |
| Mondovi | 29.82 | 757.5 | 30.02 | 762.5 | 52.3 | 11.3 | 55 | SW | 2.5 | 1.1 | | | 0 | | | 0 | 0 | | Prof. D. C. Bruno. |
| Genoa | 28.02 | 711.8 | 28.98 | 761.6 | 44.2 | 6.8 | 36 | W | | | 2 | | 0 | | | 0 | 0 | | Prof. G. M. Garibaldi. |
| Florence | 29.86 | 758.4 | 29.91 | 759.7 | 51.1 | 10.6 | 58 | N | 5.6 | 2.5 | | | 4 | | | 0 | 0 | | Cav. F Meucci. |
| Leghorn | 29.74 | 755.4 | 30.00 | 762.1 | 50.0 | 10.0 | 62 | W | | | 2 | | 2 | | | 0 | 0 | | Prof. P. Monte. |
| Pesaro | 29.92 | 759.9 | 30.00 | 762.1 | 52.0 | 11.1 | 70 | WSW | | | 4 | | 4 | | | 0 | 0 | | Prof. Luigi Guidi. |
| Rome | 29.82 | 757.3 | 30.00 | 761.9 | 53.6 | 12.0 | 36 | NE | 4.3 | 1.9 | | | 0 | | | 0 | 0 | | Prof. P. S. Ferrari. |
| Lecce | 29.63 | 752.7 | 29.90 | 759.4 | 51.6 | 10.9 | 46 | N | 35.3 | 15.8 | | | 8 | N | | 0 | 0 | | Prof. C. De Giorgi. |
| Cagliari | 29.08 | 737.3 | 29.93 | 760.3 | 52.7 | 11.5 | 73 | NW | 3.1 | 1.4 | | | 6 | | | 0 | 0 | | Prof. A. Pacinotti. |
| Cosenza | 29.82 | 757.4 | 30.02 | 762.4 | 55.9 | 13.3 | 48 | W | | | 2 | | 3 | W | | 0 | 0 | | Prof. D. Conti. |
| Palermo | 29.77 | 756.2 | 30.03 | 762.8 | 54.3 | 12.4 | 51 | WNW | 4.3 | 1.9 | | | 8 | NW | | 0.043 | 1.1 | | Prof. G. Cacciatore. |
| Syracuse | 29.90 | 759.5 | 29.97 | 761.3 | 54.7 | 12.6 | 46 | N | 2.5 | 1.1 | | | 8 | W | | 0.008 | 0.2 | | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.41 | 747.0 | 29.96 | 761.1 | 54.0 | 12.2 | 41 | NNE | 2.5 | 1.1 | | | 3 | | | 0 | 0 | | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.23 | 767.8 | 30.25 | 768.3 | 42.3 | 5.7 | 75 | NNE | 7.3 | 3.3 | | | 1cs | | | 0 | 0 | Fair | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.96 | 761.0 | 30.17 | 766.3 | 45.1 | 7.3 | 72 | NE | 5.5 | 2.5 | | | 0 | | | 0 | 0 | | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 30.19 | 766.8 | 30.26 | 768.6 | 44.7 | 7.1 | 97 | NE | 6.8 | 3.0 | | | 10n | | | 1.140 | 28.95 | Raining | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | | | | | | | | | | | | | | | | | | | P. Ceballos. |
| Guadalajara | 25.20 | 640.2 | 30.32 | 770.1 | 45.0 | 7.2 | 48 | NE | | | 1 | 0 | 0 | | | 0 | 0 | Clear | Prof. L. Perez. |
| Leon | 24.58 | 624.4 | 30.27 | 769.0 | 48.9 | 9.4 | 76 | S | | | 1 | 0 | 0 | | | 0 | 0 | Clear | Prof. M. Leal |
| Mexico, Central Obs'y | 23.19 | 589.0 | 30.46 | 773.6 | 41.0 | 5.0 | 83 | Calm | 0 | 0 | | 0 | 2k | | | 0 | 0 | Fine | The Staff. |
| Pabellon, (Aguascalientes) | | | | | 48.2 | 9.0 | 77 | W | | | 1 | 0 | 0 | | | 0 | 0 | Clear | M. V. de Leon, M. E. |
| Tlacotalpam | | | | | | | | | | | | | | | | | | | M. M. Cházaro. |
| San Luis Potosi | 24.33 | 618.1 | 30.36 | 771.1 | 48.0 | 8.9 | 68 | E | | | 1 | 0 | 9 | | E | 0 | 0 | Covered | G. Barroeta, M. D. |
| Vera-Cruz | | | | | | | | | | | | | | | | | | | Prof. J. Rossell. |
| Zacatecas | | | | | | | | | | | | | | | | | | | T. G. de la Cadena. |
| Puebla, (Catholic Institute | 23.48 | 596.5 | 30.25 | 768.8 | 36.5 | 2.5 | 9 | WNW | 1.3 | 0.6 | | 0 | 0 | | | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | | | | | | | | | | | | | | | | | | | M. V. de Leon, C. E. |
| Colima | 28.45 | 722.3 | 30.12 | 765.1 | 72.3 | 22.4 | 65 | NE | | | 1 | 0 | 1 | | SW | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | | | | | | | | | | | | | | | | | | | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1893 m., or 6210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2201m., or 7220.9 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 532 m., or 1745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.19 | 766.8 | 30.19 | 766.8 | 41.0 | 5.0 | | WSW | | | | | | | | 0.024 | 0.6 | | |
| Groningen | 30.05 | 763.3 | 30.11 | 764.7 | 38.1 | 3.4 | | WSW | | | 2 | | | | | 0.063 | 1.6 | | |
| Helder | 30.10 | 764.6 | 30.10 | 764.6 | 37.6 | 3.1 | | SW | | | 4 | | | | | 0.035 | 0.9 | | |
| Hellevoetsluis | 30.17 | 766.3 | 30.17 | 766.3 | 37.9 | 3.3 | | SW | | | 2 | | | | | | | | |
| Utrecht | 30.14 | 765.6 | 30.19 | 766.8 | 35.1 | 1.7 | | WSW | | | 2 | | 10 | | | 0 | 0 | Dull | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instru-m'tal error and temperature. Inches. | Millimeters. | Reduced to sea-level. Inches. | Millimeters. | Temperature of the Air. Fahrenheit. | Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Velocity. Miles per hour. | Meters per second. | Force. 0—10. | Clouds. Amount. Up'er 0—10. | Low'r 0—10. | Direction. Upper. From— | Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.57 | 751.0 | 29.62 | 752.4 | 39.2 | 4.0 | 93 | S | 18.3 | 8.2 | | | 10 | | | 0.906 | 23.0 | Rain & fog | |
| Brõno | 29.24 | 742.6 | 29.28 | 743.6 | 39.2 | 4.0 | 84 | SW | 27 | 12 | | | 10 | | | 0.197 | 5.0 | | |
| Christiania | 29.56 | 750.8 | 29.71 | 754.7 | 23.2 | — 4.9 | 95 | Calm | 0 | 0 | | | 10 | | | 0 | 0 | Light fog | |
| Tromsö | 28.86 | 733.1 | 28.91 | 734.2 | 35.1 | 1.7 | 88 | SSW | 38 | 17 | | | 10 | | | 0 | 0 | | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| STATIONS. | Bar. corr. Inches. | Millimeters. | Sea-level Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | Wind From— | Miles per hour. | Meters per second. | Force. | Up'er | Low'r | Upper From— | Lower From— | Rain Inches. | Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.27 | 768.8 | 30.46 | 773.7 | 56.5 | 13.( | 76 | NE | 10.5 | 4.7 | | | 5 | | | 0 | 0 | | Dr. J. A. Sampaio. |
| Campo Major | 28.96 | 735.5 | 29.99 | 761.8 | 55.4 | 13.( | 51 | SSE | 3.1 | 1.4 | | | 6 | | | 0 | 0 | | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 29.82 | 757.5 | 29.91 | 759.7 | 54.9 | 12.7 | 81 | NE | 2.5 | 1.1 | | | 10 | | | 0.661 | 16.8 | | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.60 | 751.7 | 29.96 | 761.0 | 51.1 | 10.6 | 74 | NNE | 6.3 | 2.8 | | | 10 | SW | | 0 | 0 | | The Staff. |
| Ponta Delgada, (Azores) | 30.35 | 771.0 | 30.43 | 772.8 | 59.7 | 15.4 | 64 | NE | 14.3 | 6.4 | | | 4 | | | 0.028 | 0.7 | | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h 6 m., p. m.

| Portuguese Naval Series. Vessels. | Bar. corr. Inches. | Millimeters. | Sea-level Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | Wind From— | Miles per hour. | Meters per second. | Force. | Up'er | Low'r | Upper From— | Lower From— | Sea or swell. Height scale 0–9 | Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | | | | | | | | | | | | | | | | | | | A. G. da Silva Costa, Com'd.t. |
| D. Fernando | | | | | | | | | | | | | | | | | | | A. M. de Sande, Comd't. |
| India | | | | | | | | | | | | | | | | | | | A. D. Pedroso, Com'd't. |
| Mindello | | | | | | | | | | | | | | | | | | | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | | | 29.85 | 758.1 | 82.8 | 28.2 | | W | | | 4 | | 10 | | WSW | 2 | W | Overcast | A. J. de Mattos, Com'd't. |
| Rio Douro | | | | | | | | | | | | | | | | | | | J. T. d'Oliveria, Com'd't |
| Rio Lima, Capt. S. C. da SilvaCosta. Porto Praya, Cape Verd Islands. | | | 30.06 | 763.6 | 73.0 | 22.8 | | NNE | | | 4 | | 3 | | NNE | 3 | NNE | D. clouds | A. Ferreira, 2nd Lt. |
| Sá da Bandeira, St. Paul de Loando | | | 29.74 | 755.5 | 87.4 | 30.7 | | WSW | | | 3 | | 5 | | | | | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | | | | | | | | | | | | | | | | | | | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | | | 29.98 | 761.5 | 62.6 | 17.( | | NNW | | | 2 | | 8 | | NNW | 1 | | Gloomy | J. M. T. Guimaraes, Com'd't. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| STATIONS. | Bar. corr. Inches. | Millimeters. | Sea-level Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | Wind From— | Miles per hour. | Meters per second. | Force. | Up'er | Low'r | Upper From— | Lower From— | Rain Inches. | Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.46 | 748.3 | 29.90 | 759.5 | 29.3 | — 1.5 | 80 | W | 2 | 1 | | | 10n | | | | | Snowing | Astronomical Obs |
| Wilna | 29.34 | 745.2 | 29.77 | 756.2 | 32.0 | 0.0 | 96 | NW | 2 | 1 | | | 10 | | | | | Heavy clouds | Astronomical Obs. |
| Dorpat | 29.69 | 754.0 | 29.94 | 760.4 | 33.4 | 0.8 | 92 | NNE | 2 | 1 | | | 10n | | | | | | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.95 | 760.8 | 29.97 | 761.2 | 33.1 | 0.6 | 83 | SE | 7 | 3 | | | 7ks;n | | | | | | Central Physical Obs. |
| Kieff | 28.85 | 732.8 | 29.49 | 749.0 | 40.8 | 4.9 | 92 | ESE | 4 | 2 | | | 10ks;n | | | | | Raining | Physical Cabinet. |
| Nikolaiev | 29.46 | 748.2 | 29.53 | 750.0 | 48.4 | 9.1 | 83 | W | 9 | 4 | | | 10n | | | | | | Kurdakof. |
| Kertch | 29.94 | 760.5 | 29.96 | 761.0 | 53.2 | 11.8 | 88 | S | 7 | 3 | | | 4 | | | | | | Lagorio. |
| Moscow | 29.56 | 750.8 | 30.13 | 765.4 | 30.6 | — 0.8 | 92 | E | 4 | 2 | | | 10s | | | | | | Meteorological Obs. |
| Lugan | 29.49 | 749.1 | 29.70 | 754.3 | 50.0 | 10.0 | 62 | ENE | 13 | 6 | | | 8 | | | | | | Meteorological Obs. |
| Archangel | 29.91 | 759.7 | 29.93 | 760.2 | 33.1 | 0.6 | 85 | SW | 9 | 4 | | | 10 | | | | | | Capt. Sseliwerstow. |
| Tiflis | 28.48 | 723.5 | 29.88 | 759.0 | 61.1 | —16.0 | 36 | E | 4 | 2 | | | 4s | | | | | | Physical Observatory |
| Astrakhan | 30.07 | 763.8 | 29.99 | 761.7 | 44.4 | 6.9 | 67 | E | 9 | 4 | | | 10 | | | | | Light clouds | Capt. Wisganow. |
| Krotkowo* | 29.64 | 752.8 | 30.13 | 765.3 | 32.2 | 0.1 | 85 | NNE | 2 | 1 | | | 10 | | | | | | Cand. Fatjanow. |
| Kasan | 29.89 | 759.2 | 30.17 | 766.4 | 25.7 | — 3.5 | 87 | NE | 2 | 1 | | | 10 | | | | | | Physical Cabinet. |
| Ekaterinburg | 29.30 | 744.3 | 30.37 | 771.4 | 3.6 | —15.8 | 75 | ESE | 9 | 4 | | | 7ck;cs | | | | | | Meteorological Obs. |
| Nukuss | 29.90 | 759.5 | 30.14 | 765.5 | 49.3 | 9.6 | 14 | SSE | 11 | 5 | | | 9s | | | | | | |
| Tashkend | 28.62 | 727.0 | 30.40 | 772.1 | 43.2 | 6.2 | 49 | Calm | 0 | 0 | | | 8 | | | | | | Teich, A. M. |
| Barnaul | 30.04 | 763.1 | 30.61 | 777.4 | 3.4 | 15.9 | 77 | Calm | 0 | 0 | | | 10 | | | | | | Meteorological Obs. |
| Yeniseisk | 30.29 | 769.4 | 30.62 | 777.7 | 6.4 | —14.2 | 81 | NW | 4 | 4 | | | 0 | | | | | | Marks. |
| Peking, (China) | 30.17 | 766.2 | 30.31 | 769.8 | 29.8 | — 1.2 | 48 | SW | 4 | 4 | | | 2c | | | | | | Physical Observatory. |
| Nertchinsk | | | | | | | | | | | | | | | | | | | Meteorological Obs. |
| Vladivostock | | | | | | | | | | | | | | | | | | | |
| Nikolaievsk, on the Amoor | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend 455? m, or 1,492.7? ft., Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| STATIONS. | Bar. corr. Inches. | Millimeters. | Sea-level Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | Wind From— | Velocity. | Velocity. | Force. | Up'er | Low'r | Upper From— | Lower From— | Rain Inches. | Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.96 | 761.0 | 30.07 | 763.7 | 55.0 | 12.8 | 61 | SSE | 2.9 | 1.28 | | | 6 | | | 0 | 0 | | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 29.99 | 761.7 | 30.04 | 763.1 | 59.9 | 15.5 | 90 | SE | 2.0 | 0.91 | | 2 | 6 | SW | | Inap. | Inap. | Almost cov'd | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.06 | 687.4 | | | 50.0 | 10.0 | 74 | N | 8.2 | 1.44 | | 0 | 0 | | | 0 | 0 | Clear | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.76 | 705.0 | | | 55.0 | 12.8 | 45 | SE | 25.4 | 11.33 | | 1 | 1 | SE | | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.90 | 759.5 | 30.05 | 763.8 | 62.6 | 17.0 | 63 | ENE | 3.0 | 1.33 | | 2 | 5 | NW | | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.06 | 738.2 | 29.97 | 761.3 | 49.5 | 9.7 | 76 | E | 9.4 | 4.2 | | | 10 | | | 0.209 | 5.3 | Covered | R. Gil Villanueva, Dir. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 30.15 | 765.9 | 30.22 | 767.6 | 71.3 | 21.6 | 70 | NE | 16.6 | 7.4 | | | 8k | | ENE | 0.118 | 3.0 | Fair | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.78 | 756.5 | 29.83 | 757.8 | 83.7 | 28.7 | 70 | SE | 4.0 | 1.8 | | 0 | 0 | | | 0 | 0 | Fair | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.88 | 758.9 | 29.98 | 761.4 | 60.8 | 16.0 | 61 | ESE | 12.4 | 5.6 | | 0 | 10 | | E | 0 | 0 | | Capt. C. Pujazon, R. N. Dir. |
| San Juan de Porto Rico, W.I. | 29.92 | 759.9 | 30.01 | 762.2 | 75.2 | 24.0 | 90 | Calm | 0 | 0 | | 3s | 0 | | | 0 | 0 | Clear | Leonardo de Tejeda, Ch'f. Engr. |

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.50 | 749.3 | 29.54 | 750.3 | 25.9 | — 3.4 | ..... | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.56 | 750.9 | 29.61 | 752.2 | 27.0 | — 2.8 | 92 | SW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.54 | 750.4 | 29.60 | 751.7 | 29.2 | — 1.2 | 96 | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.134 | 3.4 | ..... | |
| Stockholm | 29.65 | 753.0 | 29.82 | 757.5 | 30.6 | — 0.8 | 86 | S | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0.055 | 1.4 | ..... | |
| Wisby | 29.78 | 756.3 | 29.84 | 757.8 | 36.3 | 2.4 | 82 | WSW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0.051 | 1.3 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.71 | 754.6 | 29.78 | 756.5 | 27.1 | — 2.7 | 92 | SSW | 11.0 | 4.9 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.72 | 729.4 | 30.19 | 766.8 | 38.8 | 3.8 | 62 | N | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Zurich | 28.52 | 724.5 | 30.21 | 767.2 | 41.0 | 5.0 | 65 | S | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.024 | 0.6 | Cloudy | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +4.0 mm.; Thermometer, —2.1 Cent.; Relative Humidity, —3 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.69 | 754.1 | 43.5 | 6.4 | 85 | N | 13 | 6.0 | ..... | ..... | 10 | ..... | N | 0.299 | 7.6 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.41 | 772.3 | 64.4 | 18.0 | ..... | NW | ..... | ..... | 0 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.85 | 758.3 | 49.6 | 9.8 | ..... | NW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0.04 | 1. | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.66 | 753.4 | 29.78 | 756.3 | 67.1 | 19.5 | 49 | S | ..... | ..... | 6 | ..... | 10n | ..... | SW | 0 | 0 | Squally | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson |
| Brockville, Ontario | 30.34 | 770.6 | 30.38 | 772.3 | 5 | —16.0 | ..... | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | W. R. Bigg. |
| *Chatham, N. B | 30.17 | 766.3 | 30.23 | 767.8 | 17 | — 8.3 | 74 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.14 | 3.6 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 30.08 | 764.0 | 30.12 | 765.0 | 27 | — 2.8 | 94 | W | 7 | 3.1 | ..... | ..... | 10k | ..... | Calm | 0.300 | 7.62 | Light snow | H. J. Cundall, C. E. |
| Cornwall, Ontario | 30.43 | 772.9 | 30.65 | 778.5 | — 1.0 | —18.3 | 100 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | W. H. Bevis. |
| *Father Point, Quebec | 30.33 | 770.4 | 30.35 | 770.9 | 11 | —11.7 | 66 | W | 25 | 11.2 | ..... | 5cs | 0 | Calm | ..... | 0.50 | 12.7 | Fair | J. McWilliams. |
| Fredericton, N. B | 30.24 | 768.1 | 30.30 | 769.6 | 20.0 | — 6.7 | 56 | NW | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | Prof. Harrison. |
| *Fort Garry Manitoba | 29.52 | 749.8 | 30.47 | 773.9 | — 6 | —21.1 | 97 | S | 8 | 3.6 | ..... | 2c | 2s | NW | NW | 0 | 0 | Fair | James Stewart. |
| Granton, Ontario | 29.44 | 747.8 | 30.65 | 778.5 | 14 | —10.0 | ..... | N | ..... | ..... | 1 | 1cs | 0 | N | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 30.01 | 762.2 | 30.15 | 765.8 | 20 | — 6.7 | 76 | NW | 20 | 8.9 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Fair | F. Allison, M. A. |
| Hamilton, Ontario | 29.26 | 743.2 | 29.66 | 753.4 | 16.1 | — 8.8 | 88 | SW | ..... | ..... | 1 | 10cs | 0 | SW | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 30.30 | 769.6 | 30.68 | 779.3 | 6 | —14.4 | 91 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.03 | 762.8 | 30.07 | 763.8 | 25.8 | — 3.4 | 91 | W | 12 | 5.4 | ..... | 8k | 0 | W | ..... | 0 | 0 | Cloudy | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 30.40 | 772.1 | 30.62 | 777.7 | 11 | —11.7 | 72 | W | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0.30 | 7.6 | Clear | C. H. McLeod, C. E |
| *Parry Sound, Ontario | 29.93 | 760.2 | 30.74 | 780.8 | — 9 | —22.8 | 58 | NE | 4 | 1.8 | ..... | 2cs | 0 | NE | ..... | 0.20 | 5.1 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 29.84 | 757.9 | 30.68 | 779.3 | 9.7 | —12.4 | 65 | Calm | ..... | ..... | ..... | 0 | 5ks | ..... | ..... | 0 | 0 | Fair | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.87 | 758.7 | 30.63 | 778.0 | 16 | — 8.9 | 81 | NE | 5 | 2.2 | ..... | 9ck | 0 | NW | ..... | 0 | 0 | Fair | H. Morgan. |
| Port Hastings, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Peter Grant. |
| Port Stanley, Ontario | 29.92 | 760.0 | 30.63 | 778 0 | 20 | — 6.7 | 85 | N | 8 | 3.6 | ..... | 2k | 5ks | W | W | 0 | 0 | Cloudy | M. Payne. |
| *Quebec, Quebec | 30.18 | 766.6 | 30.54 | 775.7 | 7 | —13.9 | 65 | NW | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0.23 | 5.8 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 30.16 | 766.1 | 30.70 | 779.8 | 10 | —12.2 | 89 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | W | 0.18 | 4.6 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 30.20 | 767.1 | 30.26 | 768.8 | 24 | — 4.4 | 75 | N | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | Dr. Gove. |
| St. John, N. B | 30.11 | 764.8 | 30.29 | 769.4 | 26 | — 3.3 | 69 | W | 16 | 7.2 | ..... | 0 | 7ks | ..... | ..... | 0.05 | 1.3 | Fair | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.88 | 758 9 | 30.69 | 779.5 | 5 | —15.0 | 80 | N | 1 | 0.4 | ..... | 5cs | 0 | ..... | ..... | 0.03 | 0.8 | Fair | K. Stewart. |
| Stayner, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. J. Cole. |
| Stratford, Ontario | 29.23 | 742.4 | 30.64 | 778.2 | 15.2 | — 9.3 | 88 | E | 4.5 | 2.0 | ..... | 0 | 8s | ..... | ..... | 0 | 0 | Cloudy | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.09 | 764.3 | 30.14 | 765.5 | 23 | — 5.0 | 92 | W | 1 | 0.4 | ..... | ..... | 10n | ..... | ..... | 0.05 | 1.3 | Light snow | T. C. Hill. |
| *Toronto, Ontario | 30.24 | 768.1 | 30.67 | 779.0 | 12 | —11.1 | 96 | N | 4 | 1.8 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | Magnetic Observatory. |
| Windsor, N. S | 30.06 | 763.5 | 30.16 | 766.1 | 30.0 | —1.1 | 80 | N | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | Prof. John E. Oram |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 25.0 | — 3.9 | 88 | NE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.70 | 17.8 | Fair | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters, Stratford, 1,182 ft., or 360.3 meters.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 30.33 | 770.4 | 30.59 | 777.0 | 21 | — 6.1 | 71 | NW | 10 | 4.5 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| Alpena, Michigan | 29.98 | 761.5 | 30.71 | 780.0 | 8 | —13.3 | 78 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Atlanta, Georgia | 29.28 | 743.7 | 30.47 | 773.9 | 48 | 8.9 | 63 | SE | 10 | 4.5 | ..... | 2c | Sm'e | Calm | Calm | 0 | 0 | Smoky | |
| Atlantic City, New Jersey | 30.49 | 774.4 | 30.50 | 774.7 | 34 | 1.1 | 79 | NW | 5 | 2.2 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Augusta, Georgia | 30.33 | 770.4 | 30.52 | 775.2 | 35 | 1.7 | 70 | NW | 3 | 1.3 | ..... | 0 | 2s;fg | ..... | NW | 0 | 0 | Fair | |
| Baltimore, Maryland | 30.49 | 774.4 | 30.54 | 775.7 | 40 | 4.4 | 73 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Threatening | |
| Barnegat, New Jersey | 30.46 | 773.7 | 30.48 | 774.2 | 35 | 1.7 | 70 | N | 9 | 4.0 | ..... | 8ck | Haze | NW | Calm | 0 | 0 | Fair | |
| Bismarck, Dakota | 28.49 | 723.6 | 30.34 | 770.6 | — 4 | —20.0 | 100 | E | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boerne, Texas | 28.95 | 735.3 | 30.33 | 770.4 | 44 | 6.7 | 100 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.02 | 686.3 | 29.98 | 761.5 | 41 | 5.0 | 56 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boston, Massachusetts | 30.27 | 768.8 | 30.43 | 772.9 | 29 | — 1.7 | 56 | NW | 17 | 7.6 | ..... | 1ck | 0 | NW | ..... | 0 | 0 | Clear | |
| Brackettville, Texas | 29.23 | 742.4 | 30.28 | 769.1 | 58 | 14.4 | 94 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 29.48 | 748.8 | 30.67 | 779.0 | —18 | —27.8 | 93 | SE | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Brownsville, Texas | 30.27 | 768.8 | 30.34 | 770.6 | 66 | 18.3 | 94 | E | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Buffalo, New York | 29.86 | 758.4 | 30.63 | 778.0 | 22 | — 5.6 | 72 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 26 | Calm | ..... | ..... | 0 | 1k | 0 | E | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 30.31 | 769.9 | 30.64 | 778.2 | 12.5 | —10.8 | 70 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.06 | 0 | Clear | |
| Cairo, Illinois | 29.95 | 760.7 | 30.35 | 770.9 | 46 | 7.8 | 84 | NW | 1 | 0.4 | ..... | ..... | 10s | ..... | NW | 0.06 | 1.5 | Cloudy | |
| Camp Apache, Arizona | ... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.32 | 643.1 | 30.12 | 765.0 | 51 | 10.6 | 40 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 36 | 2.2 | 53 | NW | ..... | ..... | ..... | 2 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.49 | 698.2 | 30.06 | 763.5 | 29 | — 1.7 | 77 | E | 4 | 1.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.47 | 773.9 | 30.48 | 774.2 | 38 | 3.3 | 100 | Calm | 0 | 0 | ..... | ..... | 0 | Fog | ..... | 0 | 0 | Foggy | |
| Cape Henry, Virginia | 30.42 | 772.6 | 30.44 | 773.2 | 33 | 0.6 | 79 | Calm | 0 | 0 | ..... | ..... | 0 | Haze | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.47 | 773.9 | 30.49 | 774.4 | 39 | 3.9 | 100 | NE | 7 | 3.1 | ..... | 2c | Fog | Calm | ..... | 0 | 0 | Foggy | |
| Cape May, New Jersey | 30.46 | 773.7 | 30.49 | 774.4 | 35 | 1.7 | 80 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Castroville, Texas | 29.61 | 752.1 | 30.34 | 770.6 | 56 | 13.3 | 75 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 30.44 | 773.2 | 30.50 | 774.7 | 42 | 5.6 | 74 | N | 1 | 0.4 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 24.23 | 615.4 | 30.17 | 766.3 | 15 | — 9.4 | 82 | W | 4 | 1.8 | ..... | 0 | 5s | ..... | W | 0.04 | 1.0 | Fair | |
| Chicago, Illinois | 29.74 | 755.4 | 30.49 | 774.4 | 30 | — 1.1 | 78 | NE | 13 | 5.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Cincinnati, Ohio | 29.74 | 755.4 | 30.42 | 772.6 | 39 | 3.9 | 82 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | 0.17 | 4.3 | Light rain | |
| Cleveland, Ohio | 29.79 | 756.7 | 30.57 | 776.5 | 27 | — 2.8 | 76 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Coleman City, Texas | 28.68 | 728.5 | 30.48 | 774.2 | 33 | 0.6 | 61 | N | 14 | 6.3 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Columbus, Ohio | 29.54 | 750.3 | 30.43 | 772.9 | 33 | 0.6 | 89 | NE | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.16 | 4.1 | Heavy snow | |
| Concho, Texas | 28.56 | 725.4 | 30.30 | 769.6 | 33 | 0.6 | 61 | NE | 12 | 5.4 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Corsicana, Texas | 30.04 | 763 0 | 30.54 | 775.7 | 36 | 2.2 | 90 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.05 | 1.3 | Threatening | |
| Davenport, Iowa | 29.83 | 757.7 | 30.52 | 775.2 | 25 | — 3.9 | 87 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.3 | Light snow | |
| Deadwood, Dakota | 25.52 | 648.2 | ..... | ..... | 17 | — 8.3 | 83 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Decatur, Texas | 29.38 | 746.2 | 30.65 | 778.5 | 30 | — 1.1 | 92 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Denison, Texas | 29.72 | 754.9 | 30.58 | 776.7 | 32 | 0.0 | 89 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | 0.05 | 1.3 | Cloudy | |
| Denver, Colorado | 25.00 | 635.0 | 30.22 | 767.6 | 22 | — 5.6 | 72 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Clear | |
| Des Moines, Iowa | 29.64 | 752.8 | 30.60 | 777.2 | 21 | — 6.1 | 86 | N | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.1 | 4.6 | Light snow | |
| Detroit, Michigan | 29.86 | 758.4 | 30.59 | 777.0 | 24 | — 4.4 | 74 | NE | 8 | 3.6 | ..... | 10k | 0 | NE | ..... | 0 | 0 | Cloudy | |
| Dodge City, Kansas | 27.89 | 708.4 | 30.43 | 772.9 | 16 | — 8.9 | 83 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.83 | 757.7 | 30.60 | 777.2 | 24 | — 4.4 | 87 | NE | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light snow | |
| Duluth, Minnesota | 29.88 | 758.9 | 30.65 | 778.5 | 4 | —15.6 | 74 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | ( | Clear | |
| Eagle Pass, Texas | 29.53 | 750.0 | 30.27 | 768.8 | 63 | 17.2 | 89 | SE | ..... | ..... | 3 | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Eastport, Maine | 30.20 | 767.1 | 30.27 | 768.8 | 24 | — 4.4 | 74 | NW | 18 | 8.0 | ..... | 5k | 0 | NW | ..... | 0.06 | 1.5 | Fair | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 66 | 18.9 | 89 | Calm | ..... | ..... | 0 | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.45 | 671.8 | ..... | ..... | 45 | 7.2 | 34 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.84 | 757.9 | 30.61 | 777.5 | 24 | — 4.4 | 87 | NE | 10 | 4.5 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.95 | 760 7 | 30.72 | 780.3 | — 5 | —20.6 | 63 | N | 7 | 3.1 | ..... | 0 | 5s | ..... | N | 0 | 0 | Fair | |
| Florence, Arizona | 28.57 | 725.7 | 30.17 | 766.3 | 51 | 10.6 | 34 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 28.14 | 714.7 | ..... | ..... | 2 | —16.7 | 72 | SE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.73 | 653.5 | 29.80 | 756.9 | 35 | 1.7 | 44 | N | 1 | 0.4 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort Davis, Texas | 25.47 | 646.9 | 30.43 | 772.9 | 40 | 4.4 | 63 | NE | 5 | 2.2 | ..... | ..... | 10ks | ..... | NE | 0 | 0 | Cloudy | |
| Fort Gibson, Indian Ter | 29.99 | 761.7 | 30.58 | 776.7 | 29 | — 1.7 | 83 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | NW | 0.12 | 3.0 | Cloudy | |
| Fort Griffin, Texas | 29.25 | 742.9 | 30.63 | 778.0 | 32 | 0.0 | 59 | NW | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort Keogh, Montana | 27.58 | 700.5 | ..... | ..... | — 9 | —22.8 | 19 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort McKavett, Texas | 28.19 | 716.0 | 30.24 | 768.1 | 36 | 2.2 | 80 | E | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 29.34 | 745.2 | 30.57 | 776.5 | 22 | — 5.6 | 86 | N | 6 | 2.7 | ..... | 0 | 5s | ..... | Calm | Inap. | Inap. | Fair | |
| Fort Stevenson, Dakota | 28.44 | 722.4 | ..... | ..... | 7 | —13.9 | 77 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fredericksburg, Texas | 28.72 | 729.5 | 30.38 | 771.6 | 42 | 5.6 | 83 | N | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 30.37 | 771.4 | 30.41 | 772.4 | 60 | 15.6 | 94 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Graham, Texas | 29.42 | 747.2 | 30.57 | 776.5 | 31 | — 0.6 | 58 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 29.88 | 758.9 | 30.59 | 777.0 | 21 | — 6.1 | 71 | E | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Indianapolis, Indiana | 29.52 | 749.8 | 30.34 | 770.6 | 36 | 2.2 | 80 | E | 3 | 1.3 | ..... | ..... | 10n | ..... | Calm | 0.46 | 11.7 | Light rain | |
| Indianola, Texas | 30.36 | 771.1 | 30.39 | 771.9 | 63 | 17.2 | 94 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | Inap. | Inap. | Cloudy | |
| Jacksboro, Texas | 29.30 | 746.5 | 30.62 | 777.7 | 29 | — 1.7 | 67 | N | 16 | 7.2 | ..... | 0 | 8s | ..... | NE | 0 | 0 | Cloudy | |
| Jacksonville, Florida | 30.45 | 773.4 | 30.48 | 774.2 | 49 | 9.4 | 71 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.76 | 755.9 | 30.42 | 772.6 | 25 | — 3.9 | 93 | NE | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.20 | 5.1 | Light snow | |
| Key West, Florida | 30.24 | 768.1 | 30.28 | 769.1 | 67 | 19.4 | 74 | NE | 18 | 8.0 | ..... | 5cs | Haze | E | Calm | Inap. | Inap. | Fair | |
| Kittyhawk North Carolina | 30.43 | 772.9 | 30.46 | 773.7 | 33 | 0.6 | 100 | NE | 1 | 0.4 | ..... | 0 | Fog | ..... | E | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.44 | 747.8 | 30.51 | 774.9 | 34.5 | 1.4 | 85 | NE | 3 | 1.3 | ..... | Haze | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 29.82 | 757.4 | 30.65 | 778.5 | 14 | —10.0 | 82 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 26.27 | 667.2 | 30.42 | 772.6 | 40 | 4.4 | 56 | Calm | 0 | 0 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Laredo, Texas | 29.86 | 758.4 | 30.20 | 767.1 | 66 | 18.9 | 84 | E | 6 | 2.7 | ..... | 10ck | 0 | SE | ..... | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.67 | 753.6 | 30.59 | 777.0 | 24 | — 4.4 | 87 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | N | 0.09 | 2.3 | Cloudy | |
| Los Angeles, California | 29.77 | 756 1 | 30.11 | 764.8 | 54.5 | 12.5 | 87 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Louisville, Kentucky | 29.76 | 755.9 | 30.34 | 770.6 | 42 | 5.6 | 66 | E | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.07 | 1.8 | Light rain | |
| Lynchburg, Virginia | 29.78 | 756 4 | 30.51 | 774.9 | 36 | 2.2 | 62 | Calm | 0 | 0 | ..... | 0 | 8ks | ..... | Calm | 0 | 0 | Cloudy | |
| Madison, Wisconsin | 29.52 | 749.8 | 30.59 | 777.0 | 25 | — 3.9 | 87 | NE | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Marquette, Michigan | 29.86 | 758.4 | 30.64 | 778.2 | 15 | — 9.4 | 65 | SW | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0.02 | 0.5 | Fair | |
| Mason, Texas | 28.80 | 731.5 | 30.69 | 779.5 | 35 | 1.7 | 90 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 30.03 | 762.8 | 30.36 | 771 1 | 56 | 13.3 | 93 | NW | 5 | 2.2 | ..... | ..... | 10n | ..... | NW | Inap. | Inap. | Light rain | |
| Milwaukee, Wisconsin | 29.78 | 756.4 | 30.57 | 776.5 | 27 | — 2.8 | 88 | NE | 16 | 7.2 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Mobile, Alabama | 30.44 | 773.2 | 30.48 | 774.2 | 49 | 9.4 | 93 | S | 3 | 1.3 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 30.26 | 768.6 | 30.51 | 774.9 | 45 | 7.2 | 84 | E | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Morgantown, West Virginia | 29.38 | 746.2 | 30.50 | 774.7 | 37 | 2.8 | 90 | N | 3 | 1.3 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Mt. Washington, N. H. | 23.68 | 601.5 | 30.04 | 763.0 | 1 | —17.2 | 72 | NW | 72 | 32.2 | ..... | 0 | sks | ..... | NW | 0 | 0 | Clear | |
| Nashville, Tennessee | 29.82 | 757.4 | 30.36 | 771.1 | 54 | 12.2 | 67 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | SW | Inap. | Inap. | Cloudy | |
| New Haven, Connecticut | 30.36 | 771.1 | 30.48 | 774.2 | 33 | 0.6 | 79 | N | 7 | 3.1 | ..... | 5ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| New London, Connecticut | 30.40 | 772.1 | 30.45 | 773.4 | 35 | 1.7 | 70 | N | 5 | 2.2 | ..... | 1ck | Haze | W | Calm | 0 | 0 | Fair | |
| New Orleans, Louisiana | 30.39 | 771.9 | 30.46 | 773.7 | 53 | 11.7 | 93 | E | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Newport, Rhode Island | 30.40 | 772.1 | 30.46 | 773.7 | 33.5 | 0.8 | 75 | NW | 7 | 3.1 | ..... | 4c | 6s | W | Calm | 0 | 0 | Fair | |
| New York, New York | 30.33 | 770.4 | 30.52 | 775.2 | 34 | 1.1 | 79 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 30.40 | 772.1 | 30.47 | 773.9 | 36 | 2.2 | 90 | S | 2 | 0.9 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.48 | 698.0 | 30.33 | 770.4 | 14 | —10.0 | 100 | SW | 4 | 1.8 | | | Fog | | Calm | Inap. | Inap | Foggy | |
| Olympia, Washington Ter. | 29.83 | 757.7 | 29.87 | 758.7 | 39.2 | 4.0 | 82 | S | 5 | 2.2 | | | 10s | | | 0.04 | 1.0 | Cloudy | |
| Omaha, Nebraska | 29.38 | 746.2 | 30.00 | 777.2 | 10 | — 7.2 | 85 | N | 4 | 1.8 | | | 10s | | Calm | 0.05 | 1.3 | Cloudy | |
| Oswego, New York | 30.32 | 770.1 | 30.07 | 779.0 | 20 | — 6.7 | 85 | NE | 12 | 5.4 | | 8cs;k | 0 | Calm;NE | | Inap. | Inap. | Fair | |
| Pembina, Dakota | 29.55 | 750.6 | 30.51 | 774.9 | —10 | —23.3 | 100 | SE | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Philadelphia, Pa | 30.46 | 773.7 | 30.52 | 775.2 | 37 | 2.8 | 81 | N | 8 | 3.6 | | | 10s;sme | | NW;Calm | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.92 | 734.6 | 30.76 | 781.3 | 50 | 10.0 | 52 | N | 1 | 0.4 | | 2c | 0 | W | | 0 | 0 | Fair | |
| Pike's Peak, Colorado | 17.84 | 453.1 | 30.05 | 763.3 | 7 | —13.9 | 31 | W | 24 | 10.7 | | 5cs | 0 | W | | 0.25 | 6.3 | Fair | |
| Ploche, Nevada | 24.09 | 611.9 | 29.86 | 758.4 | 41 | 5.0 | 25 | S | 6 | 2.7 | | 0 | 5s | | SW | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 29.66 | 753.4 | 30.52 | 775.2 | 34 | 1.1 | 90 | NE | 3 | 1.3 | | | 10n | | Calm | 0.09 | 2.3 | Light snow. | |
| Port Huron, Michigan | 29.88 | 758.9 | 30.62 | 777.7 | 21 | — 6.1 | 86 | NE | 10 | 4.5 | | 5ck | 5ks | W | Calm | 0 | 0 | Cloudy | |
| Portland, Maine | 30.37 | 771.4 | 30.42 | 772.6 | 28 | — 2.2 | 77 | NW | 20 | 8.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Portland, Oregon | 29.82 | 757.4 | 29.92 | 760.0 | 41.0 | 5.0 | 87 | S | 8 | 3.6 | | 0 | 5s | | SW | 0.07 | 1.8 | Fair | |
| Prescott, Arizona | 24.86 | 631.4 | 30.22 | 767.6 | 30 | — 1.1 | 57 | N | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.17 | 740.9 | 29.99 | 761.7 | 51 | 10.6 | 78 | SE | 12 | 5.4 | | 5k | 5s | S | SE | 0 | 0 | Cloudy | |
| Punta Rassa, Florida | 30.37 | 771.4 | 30.39 | 771.9 | 60 | 15.6 | 77 | N | 13 | 5.8 | | 10k | 0 | NE | | 0 | 0 | Cloudy | |
| Red Bluff, California | 29.60 | 751.8 | 29.97 | 761.2 | 50 | 10.0 | 86 | SE | 16 | 7.2 | | 0 | 5s | | Calm | Inap. | Inap. | Fair | |
| Rio Grande City, Texas | 30.13 | 765.3 | 30.35 | 770.9 | 66 | 18.9 | 89 | E | 8 | 3.6 | | | 10s | | SE | 0 | 0 | Cloudy | |
| Rochester, New York | 29.98 | 761.5 | 30.06 | 778.8 | 22 | — 5.6 | 72 | E | 8 | 3.6 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Roseburg, Oregon | 29.43 | 747.5 | 30.01 | 762.2 | 36.5 | 2.5 | 93 | W | 4 | 1.8 | | | 10n | | | 0.28 | 7.1 | Light rain | |
| Sacramento, California | 29.94 | 760.5 | 30.02 | 762.5 | 51 | 10.6 | 79 | SE | 2 | 0.9 | | | 10s | | W | 0 | 0 | Cloudy | |
| St. Louis, Missouri | 29.74 | 755.4 | 30.36 | 770.9 | 34 | 1.1 | 90 | NW | 8 | 3.6 | | | 10n | | Calm | 0.64 | 16.3 | Light rain | |
| St. Marks, Florida | 30.46 | 773.7 | 30.46 | 774.2 | 41 | 5.0 | 100 | NE | 4 | 1.8 | | 0 | Fog | | Calm | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.69 | 754.1 | 30.63 | 778.0 | 8 | —13.3 | 78 | Calm | 0 | 0 | | 5cs | 0 | Calm | | 0 | 0 | Fair | |
| Salt Lake City, Utah | 25.67 | 652.0 | 30.00 | 762.0 | 39 | 3.9 | 38 | SW | 4 | 1.8 | | 0 | 4s | | Calm | 0 | 0 | Fair | |
| San Antonio, Texas | 29.71 | 754.6 | 30.31 | 769.9 | 67 | 19.9 | 87 | NW | 8 | 3.6 | | | 10s | | Calm | Inap. | Inap. | Threatening | |
| San Diego, California | 30.07 | 763.8 | 30.14 | 765.5 | 56 | 13.3 | 84 | NE | 4 | 1.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.85 | 758.2 | 30.58 | 776.7 | 30 | — 1.1 | 78 | E | 24 | 10.7 | | | 10s | | E | 0.01 | 0.3 | Cloudy | |
| Sandy Hook, New Jersey | 30.47 | 773.9 | 30.50 | 774.7 | 34 | 1.1 | 70 | N | 18 | 8.0 | | 8k | Haze | W | Calm | 0 | 0 | Hazy | |
| San Francisco, California | 29.97 | 761.2 | 30.04 | 763.0 | 53 | 11.7 | 80 | S | 14 | 6.3 | | | 10n | | Calm | 0.06 | 1.5 | Light rain | |
| Santa Fé, New Mexico | 23.45 | 595.6 | 29.90 | 761.7 | 35 | 1.7 | 53 | E | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Savannah, Georgia | 30.40 | 772.1 | 30.50 | 774.7 | 39 | 3.9 | 91 | E | 5 | 2.2 | | | Fog | | Calm | 0 | 0 | Foggy | |
| Shreveport, Louisiana | 30.20 | 767.1 | 30.42 | 772.6 | 60 | 15.6 | 88 | W | 4 | 1.8 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Silver City, New Mexico | 24.47 | 621.5 | 30.78 | 781.8 | 40 | 4.4 | 64 | NW | 1 | 0.4 | | 8k | 0 | Calm | | 0 | 0 | Fair | |
| Smithville, North Carolina | 30.46 | 773.7 | 30.50 | 774.7 | 39 | 3.9 | 100 | N | 4 | 1.8 | | 0 | Fog | | Calm | 0 | 0 | Clear | |
| Springfield, Massachusetts | 30.34 | 770.6 | 30.48 | 774.2 | 32 | 0.0 | 79 | N | 12 | 5.4 | | 10c | 0 | N | | 0 | 0 | Cloudy | |
| Stockton, Texas | 27.35 | 694.7 | 30.36 | 770.9 | 39 | 3.9 | 91 | E | 12 | 5.4 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Thatcher's Island, Mass | 30.39 | 771.9 | 30.45 | 773.4 | 28 | — 2.2 | 54 | N | 32 | 14.3 | | 2c | 0 | N | | 0 | 0 | Fair | |
| Toledo, Ohio | 29.83 | 757.7 | 30.57 | 776.5 | 27 | — 2.8 | 76 | E | 20 | 8.9 | | | 10s | | E | 0 | 0 | Cloudy | |
| Tucson, Arizona | 27.64 | 702.0 | 30.19 | 766.8 | 50 | 10.0 | 44 | S | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.50 | 749.3 | 30.00 | 762.0 | 41.0 | 5.0 | 74 | SE | 6 | 2.7 | | | 10s | | W | 0 | 0 | Cloudy | |
| Unalashka, Aleutian Islands | | | | | 21 | — 6.1 | 100 | NW | | | 4 | | 10s | | NW | 0 | 0 | Cloudy | |
| Uvalde, Texas | 29.44 | 747.8 | 30.25 | 768.3 | 65 | 18.3 | 78 | E | 2 | 0.9 | | 2ck | 2s | Calm | E | 0 | 0 | Fair | |
| Vicksburg, Mississippi | 30.26 | 768.3 | 30.50 | 774.7 | 55 | 12.8 | 87 | SW | 4 | 1.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Virginia City, Montana | 24.15 | 613.4 | 29.63 | 752.6 | 22 | — 5.6 | 72 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Visalia, California | 29.07 | 738.6 | 30.04 | 763.0 | 51 | 10.6 | 65 | SE | 3 | 1.3 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Washington, D. C. | 30.38 | 771.6 | 30.51 | 774.9 | 36 | 2.2 | 76 | Calm | 0 | 0 | | | Fog | | Calm | 0 | 0 | Foggy | |
| Wickenburg, Arizona | | | | | 44 | 6.7 | 68 | NW | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.37 | 771.4 | 30.46 | 773.7 | 34 | 1.1 | 90 | Calm | 0 | 0 | | | Fog | | Calm | 0 | 0 | Dense fog | |
| Winnemucca, Nevada | 25.49 | 647.4 | 29.85 | 758.2 | 30 | — 1.1 | 57 | E | 6 | 2.7 | | 0 | 2s | | Calm | 0 | 0 | Fair | |
| Wood's Holl, Mass | 30.38 | 771.6 | 30.42 | 772.6 | 32 | 0.0 | 79 | NW | 16 | 7.2 | | 2cs | 5s | SW | SW | 0 | 0 | Cloudy | |
| Yankton, Dakota | 29.25 | 742.9 | 30.70 | 779.8 | 13 | —10.6 | 81 | Calm | 0 | 0 | | 10ck | 0 | Calm | | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.88 | 758.9 | 30.05 | 763.3 | 67 | 13.9 | 58 | W | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark. | 28.88 | 733.5 | 30.41 | 772.4 | 25 | — 3.9 | 100 | | | | | | | | | | | | J. B. Gordon. |
| Havana, Cuba, W. I. | 30.17 | 766.3 | 30.22 | 767.6 | 72 | 22.2 | 71 | NE | 2.4 | 1.1 | | 4k | 4n | NE | NE | 0.06 | 1.5 | Cloudy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | | | | | | | | | | | | | | | | | | | James Gall. |
| Medellin, Colombia, S. A. | 25.22 | 640.6 | | | 65.0 | 18.3 | 77 | Calm | 0 | 0 | | 4k | 3ks | | | 0 | 0 | | Thomas Herran. |
| Navassa, W. I. | 29.94 | 760.5 | 30.02 | 762.5 | 77 | 25.0 | | NE | 20 | 8.9 | | | | | | 0 | 0 | Partly clo'dy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 29.99 | 761.7 | 29.99 | 761.7 | 81 | 27.2 | 74 | E | | | 2 | 4c | 5k | E | | 0 | 0 | Fair | C. J. Heilig |
| Santiago de Cuba, W. I. | | | | | | | | | | | | | | | | | | | Robert Mason. |
| St. Thomas, W. I. | | | | | | | | | | | | | | | | | | | G. O. Gellich. |
| York Factory, B. A. | | | | | | | | | | | | | | | | | | | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,480 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,116.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft., or 4,313.1 m.; Ploche, 5,778.0 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m., Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,642 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,336.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.83 m.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

## UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | BAROMETER. As read off. Inches. | BAROMETER. As read off. Millimeters. | BAROMETER. Attached Thermometer. Fahrenheit. | BAROMETER. Attached Thermometer. Centigrade. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Up'er From— | CLOUDS. Direction. Low'r From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | SEA-SWELL. Character. | SEA-SWELL. Direction from— | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.95 | 760.7 | 63 | 11.7 | 48 | 8.9 | 92 | W | 21 | 9.4 | .... | ..... | 10 | ..... | W | 0.03 | 0.8 | ..... | ..... | Raining ..... | |
| Navy Yard, Pensacola, Fla. | 30.55 | 776.0 | 63 | 11.7 | 53 | 11.7 | 86 | NE | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 30.65 | 778.5 | 52 | 11.1 | 28 | — 2.2 | 77 | NW | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan.....*... | 30.19‡ | 766.8‡ | ..... | ..... | 46.5 | 8.1 | 96 | NNE | ..... | ..... | 4 | ..... | 10n | ..... | NNE | 1.01 | 25.7 | ..... | ..... | Light rain ... | |
| Adams. Panama ..... | 30.00 | 762.0 | 77 | 25.0 | 77 | 25.0 | 91 | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Fair ..... | |
| Alaska, N. 22° 32', W. 109° 44'..... | 30.12 | 765.0 | 72 | 22.2 | 66 | 18.9 | 89 | SSW | ..... | ..... | 4 | ..... | 8 | ..... | SE | ..... | ..... | Mod'ate | NW | Hazy..... | |
| Alliance, Villafranca, France..... | 30.01‡ | 762.2‡ | ..... | ..... | 57 | 13.9 | 41 | SSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Ashuelot, Hong-Kong, China. ..... | 29.91‡ | 759.7‡ | ..... | ..... | 58 | 14.4 | 88 | E | ..... | ..... | 5 | ..... | 10 | ..... | Calm | ..... | ..... | Mod'ate | E | Showery..... | |
| Canonicus, New Orleans, La..... | 30.42 | 772.6 | 43 | 6.1 | 51 | 10.6 | 93 | NE | ..... | ..... | 2 | ..... | 2 | ..... | NE | ..... | ..... | ..... | ..... | Fair ..... | |
| Colorado, New York, N. Y..... | 30.47 | 773.9 | 31 | — 0.6 | 35 | 1.7 | ?? | NW | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Hazy ..... | |
| Constitution, Lisbon, Portugal..... | 29.95‡ | 760.7‡ | ..... | ..... | 54 | 12.2 | 93 | NE | ..... | ..... | 1 | ..... | 8 | ..... | Calm | ..... | ..... | ..... | ..... | Light haze.. | |
| Despatch, Constantinople, Turkey | 29.76‡ | 755.9‡ | ..... | ..... | 45 | 7.2 | 92 | NNW | ..... | ..... | 3 | ..... | 10 | ..... | N | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Franklin, Norfolk, Va..... | 30.61 | 777.5 | 39 | 3.9 | 38 | 3.3 | 82 | Calm | 0 | 0 | ... .. | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Gettysburg, Genoa, Italy ..... | 29.96‡ | 761.0‡ | ..... | ..... | 54 | 12.2 | 87 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds..... | |
| Hartford, Montevideo, Uruguay... | 29.93 | 760.2 | 75 | 23.9 | 74 | 23.3 | 59 | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Lackawana, Panama.....*... | 29.73‡ | 755.1‡ | ..... | ..... | 75 | 23.9 | 95 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Michigan, Erie, Pa.....†... | 30.25 | 768.3 | ..... | ..... | 25 | — 3.9 | 87 | NE | ..... | ..... | 6 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monocacy. Ning Po, China.... ....* | 30.29‡ | 769.4‡ | ..... | ..... | 43 | 6.1 | 75 | NNE | ..... | ..... | 2-3 | ..... | 10 | ..... | NNE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongehela, Yokohama, Japan ....*.. | 30.23‡ | 767.8‡ | ..... | ..... | 47 | 8.3 | 70 | N | ..... | ..... | 3 | ..... | 10 | ..... | ..... | Heavy | Heavy | ..... | ..... | Raining..... | |
| New Hampshire, Port Royal, S. C..... | 30.60 | 777.2 | 47 | 8.3 | 46 | 7.8 | 92 | N | 3 | 1.3 | ..... | ..... | ..... | ..... | N | 0 | 0 | ..... | ..... | Cloudy..... | |
| Onward, Callao, Peru.....†... | 30.05 | 763.3 | ..... | ..... | 67 | 19.4 | 89 | SSE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Palos, Tientsin, China..... | 30.32 | 770.1 | 39 | 3.9 | 31 | — 0.6 | 68 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 37 | 2.8 | 71 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Pensacola, S. 38° 15', W. 78° 50'..... | 29.96‡ | 761.0‡ | ..... | ..... | 66 | 18.9 | 94 | NW | 10 | 4.5 | ..... | ..... | 5 | ..... | NW | ..... | ..... | Smooth | W | Fair..... | |
| Powhatan, Key West, Fla..... | 30.30‡ | 769.6‡ | ..... | ..... | 68 | 20.0 | 79 | NE | ..... | ..... | 4 | ..... | 5 | ..... | NE | 0 | 0 | Mod'ate | NE | Fair ..... | |
| Quinnebaug, Villafranca, France..... | 30.01‡ | 762.2‡ | ..... | .... .... | 56 | 13.3 | 51 | SW | ..... | ..... | 2 | ..... | 0 | .... | ..... | ..... | ..... | Smooth | ..... | Clear. ..... | |
| Ranger. Kobe, Japan.....*... | 30.28‡ | 769.1‡ | ..... | ..... | 53 | 11.7 | 80 | Calm | ..... | ..... | 0 | ..... | 10 | .. ..... | Calm | ..... | ..... | Smooth | ..... | Overcast..... | |
| Richmond, Naples, Italy..... | 29.98‡ | 761.5‡ | ..... | ..... | 56 | 13.3 | 41 | NNW | ..... | ..... | 1 | ..... | 2 | ..... | NNW | 0 | 0 | Smooth | ..... | Clear..... | |
| Rio Bravo, Brownsville, Texas..... | 30.26 | 768.6 | 68 | 20.0 | 66 | 18.9 | 100 | SE | ..... | ..... | 1 | ..... | 10 | ..... | S | 0 | 0 | ..... | ..... | Foggy ..... | |
| Santee, Annapolis, Md... ..... | 30.57‡ | 776.5‡ | ..... | ..... .. | 37 | 2.8 | 81 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast.... | |
| Saratoga, Washington, D. C..... | 30.61 | 777.5 | ..... | ..... | 37 | 2.8 | 81 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | SE | 0 | 0 | ..... | ..... | Foggy..... | |
| St. Louis, League Island, Pa ..... | 30.35 | 770.9 | 59 | 15.0 | 37 | 2.8 | 81 | NNE | 5 | 2.2 | ..... | ..... | 10 | ..... | NW | 0 | 0 | ..... | ..... | Misty..... | |
| Supply, N. 23° 43', W. 65° 02'..... | 30.05‡ | 763.3‡ | ..... | ..... .. | 74 | 23.3 | 86 | S | ..... | ..... | 3 | ..... | 5 | ..... | S | ..... | ..... | Long | NW | Fair ..... | |
| Trenton Villafranca, France.... .... | 30.04‡ | 763.0‡ | ..... | ..... | 61 | 16.1 | 55 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Mod'ate | S | Clear ..... | |
| Tuscarora, Acapulco, Mexico..... | 29.98‡ | 761.5‡ | ..... | ..... | 78 | 25.6 | 69 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | Calm | 0 | 0 | Smooth | ..... | Clear..... | |
| Wabash, Boston, Mass..... | 30.37‡ | 771.4‡ | ..... | .. ..... | 30 | — 1.1 | 79 | NW | 3 | 1.3 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Fair..... | |
| Wyoming, Smyrna, Turkey..... | 29.63‡ | 752.6‡ | ..... | ..... | 56 | 13.3 | 87 | Var. | ..... | ..... | 0-1 | ..... | 10 | ..... | ..... | ..... | ... .... | Smooth | S | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From — | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| N. 7° 09′, W. 81° 35′ †‡ | | 29.96 | 761.0 | 81 | 27.2 | 83 | NNE | | | 3 | | 5 | | Calm | 0 | Small | NE | D. clouds | Capt. Connolly. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Austin. |
| S. S. Dakota, Capt. Morse | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |
| S. S. Granada, San José, Guatemala *† | | 30.14 | 765.5 | 78 | 25.6 | ?? | NNW | | | 3 | | 0 | | | 0 | Light | S | Hazy | |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | |
| S. S. Zealandia | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation, no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, Hong-Kong, China *‡ | | 29.81 | 757.2 | 60 | 15.6 | 88 | ENE | | | 5 | | 08 | | NE | | Mod'ate | NE | Raining | J. A. Thompson, 2d Off't |
| S. S. Gaelic, N. 38° 10′, E. 178° 04′ †‡ | | 29.76 | 755.6 | 56 | 13.3 | 94 | Var. | | | 4 | | Fog | | | | Heavy | Smooth | Rain & fog | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 26° 23′, W. 29° 07′ | | 30.31 | 769.9 | 75.0 | 23.9 | 53 | NE | | | 4 | | 0 | | | | Mod'ate | NNW | Fine | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 40° 41', W. 59° 58'. | | 30.13‡ | 765.8‡ | 55 | 12.8 | | N | | | 6 | | 8 | | N | 0 | Mod'ate | ENE | Cloudy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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**ALLAN LINE MARINE SERIES.**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 3, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 30.03 | 762.7 | 66.3 | 19.6 | 78 | W | ..... | ... | 2 | ..... | ..... | ..... | ..... | 0.748 | 19.0 | Hazy | |
| Nemours | ..... | ..... | 29.89 | 759.3 | 59.9 | 15.5 | 89 | WNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Kesxuche. |
| Algiers | ..... | ..... | 29.93 | 760.2 | 60.4 | 15.8 | 66 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Tourillere. |
| La Calle | ..... | ..... | 29.96 | 760.9 | 58.5 | 14.7 | 70 | ENE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Foufrede. |
| Tunis | ..... | ..... | 29.93 | 760.2 | 60.6 | 15.9 | 52 | NW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Jacques. |
| Sfax | ..... | ..... | 29.99 | 761.7 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 29.90 | 759.4 | 55.8 | 13.2 | 16 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Herbin. |
| Tebessa | ..... | ..... | 30.08 | 762 8 | 60.1 | 15 6 | 20 | WSW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Watrin. |
| Geriville | ..... | ..... | 29.84 | 758.0 | 54.9 | 12.7 | 93 | S | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Brugnlaux. |
| Laghouat | ..... | ..... | 30.05 | 763.2 | 58.6 | 14.8 | 33 | SE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bertrand. |
| Biskra | ..... | ..... | 29.99 | 761.7 | 67.6 | 19.8 | 36 | WNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.36 | 745.7 | 29.93 | 760.1 | 39.7 | 4.3 | 57 | SW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir. |
| Oracow, I. R. Observatory | 29.10 | 739.2 | 29.90 | 759.5 | 32.4 | 0.2 | 92 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0.055 | 1.4 | ..... | Dr. Wierzbiski |
| Eperies | 28.93 | 734.7 | 29.84 | 757.9 | 34.6 | 1.4 | 69 | Calm | ..... | ..... | 0 | ..... | 10cs | ..... | S | 0.063 | 1.60 | ..... | Julius Mikolik. |
| Gratz | 28.62 | 726.9 | 29.89 | 759.3 | 41.4 | 5.2 | 54 | S | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.37 | 720.6 | 29.53 | 757.7 | 38.5 | 3.6 | 54 | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.301 | 7.65 | Snowing | Prof. A. Gottschling. |
| Kremsmünster | 28.58 | 725.8 | 29.98 | 761.4 | 31.5 | — 0.3 | 90 | WNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.126 | 3.2 | ..... | Prof. C. Wagner. |
| Lemberg | 28.78 | 731.1 | 29.80 | 756.9 | 35.1 | 1.7 | 69 | NW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.83 | 757.7 | 29.87 | 758.6 | 47.3 | 8.5 | 48 | WSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office. |
| Szathmar | 29.40 | 746.8 | 29.88 | 759.0 | 38.1 | 3.4 | 66 | NW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 29.88 | 758.9 | 29.95 | 761.5 | 44.6 | 7.0 | 66 | W | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Almost clear | F. Busin. |
| Vienna | 29.18 | 741.1 | 29.92 | 760.0 | 33.8 | 1.0 | 88 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.055 | 1.4 | Snowing | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 957 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Royal Observatory |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. E. de Cae. |
| Maeseyck | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Pierrot |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:9, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.48 | 748.8 | 29.58 | 751.3 | 41.3 | 5.2 | ..... | SW | 19 | 8.5 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Blue sky | W. Boswell. |
| Ardrossan | 29.67 | 753.6 | 29.69 | 754.1 | 41 | 5.0 | ..... | WNW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.82 | 757.4 | 39.0 | 3.9 | ..... | W | 15 | 6.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.84 | 757.9 | 43.0 | 6.1 | ..... | W | 27 | 12.1 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.85 | 758.2 | 40.5 | 4.9 | ..... | W | 48 | 21.5 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | Squally | Thomas Mackereth. |
| Bradford, Yorkshire | 29.42 | 747.2 | 29.81 | 757.2 | 43.1 | 6.2 | ..... | NW | ..... | ..... | 5 | ..... | 6 | ..... | ..... | 0.02 | 0.5 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.93 | 760.2 | 29.96 | 761.0 | 82 | 27.8 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Surgener, A. H. C. |
| Cambridge, Observatory | ..... | ..... | 29.89 | 759.2 | 43.0 | 6.1 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast | H. Todd. |
| Cardington | ..... | ..... | 29.86 | 758.4 | 45.0 | 7.2 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.78 | 756.4 | 29.92 | 760.0 | 45.1 | 7.3 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | Corpl. Daly, R. E. |
| Dartmoor | 27.94 | 709.7 | 29.42 | 747.2 | 40.0 | 4.4 | ..... | NW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | Fine | Alexander Watt. |
| Donaghadee | 29.77 | 756.1 | 29.81 | 757.2 | 44 | 6.7 | ..... | W | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | J. Mac Gowan. |
| Dover | 29.90 | 759.4 | 29.93 | 760.2 | 42 | 5.6 | ..... | WSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | J. Costello. |
| Falmouth, Observatory | 29.77 | 756.1 | 30.01 | 762.2 | 46.5 | 8.1 | ..... | NW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.54 | 699.5 | 29.86 | 758.4 | 78.2 | 25.7 | ..... | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.63 | 752.6 | 29.86 | 758.4 | 88 | 31.1 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.85 | 758.2 | 46 | 7.8 | ..... | W | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.81 | 757.2 | 29.87 | 758.7 | 58.5 | 14.7 | ..... | E | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.49 | 749.0 | 29.70 | 754.4 | 33.8 | 1.0 | ..... | WSW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | Snowing | D. G. Maclean. |
| Great Yarmouth | 29.85 | 758.2 | 29.86 | 758.4 | 43 | 6.1 | ..... | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | Raining | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.74 | 755.4 | 29.91 | 759.7 | 43.8 | 6.6 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | The Staff, for G. B. Airy |
| Guernsey | 29.77 | 756.1 | 29.99 | 761.7 | 47 | 8.3 | ..... | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F.R.S |
| Heiston | 29.95 | 760.7 | 30.07 | 763.8 | 49 | 9.4 | ..... | N | ..... | ..... | 4 | ..... | 2clk | ..... | ..... | 0.7 | 18. | Fine | M. P. Moyle. |
| Holyhead | 29.84 | 757 9 | 29.89 | 759.2 | 44 | 6.7 | ..... | WSW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | John Tilston. |
| Jersey | 29.74 | 755.4 | 30.04 | 763.0 | 45.9 | 7.7 | ..... | WSW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | J. Fisher. |
| Kew, Observatory | 29.88 | 758.9 | 29.92 | 760.0 | 43.2 | 6 2 | ..... | SW | 11 | 4.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | The Meteorological Of. |
| Leicester, Museum | 29.61 | 752.1 | 29.87 | 758.7 | 45.3 | 7.4 | ..... | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.87 | 758.7 | 29.95 | 760.7 | 60 | 15.6 | ..... | NW | ..... | ..... | 2 | ..... | 4k | ..... | ..... | ..... | ..... | D. clouds | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.42 | 747.2 | 29.51 | 749.5 | 40 | 4.4 | ..... | WNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.28 | 769.1 | 69.0 | 20.6 | ..... | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | C. S. Duncombe. |
| Nottingham, Observatory | 29.78 | 756.4 | 29.97 | 761.2 | 44.8 | 7.1 | ..... | WNW | ..... | ..... | 3 | ..... | 10k;d | ..... | WNW | 0.045 | 1.14 | Overcast | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.34 | 745.2 | 29.87 | 758.7 | 44.9 | 7.2 | ..... | W | ..... | ..... | 5 | ..... | 6 | ..... | ..... | ..... | ..... | Hazy | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.91 | 759.7 | 45 | 7.2 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | H. E. Bellamy. |
| Plymouth | 29.89 | 759.2 | 29.96 | 761.0 | 46.3 | 7.9 | ..... | NW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | John Merrifield. |
| Roche's Point | 29.93 | 760.2 | 29.98 | 761.5 | 46 | 7.8 | ..... | WNW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ cloaded | W. Kennedy. |
| Saint Ann's Head | 29.80 | 756.9 | 29.96 | 761.0 | 43 | 6.1 | ..... | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 29.42 | 747.2 | 36.8 | 2.7 | ..... | SW | 21 | 9.4 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Showery | Dr. H skins. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 29.84 | 757.9 | 49.2 | 9.6 | ..... | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | W. H. Lyne. |
| Sheffield | 29.56 | 750.8 | 29.86 | 758.4 | 43.8 | 6.6 | ..... | SW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.02 | 0.5 | Overcast | W. F. Cooper. |
| Silloth Rectory | 29.73 | 755.1 | 29.76 | 755.9 | 45.6 | 7.6 | 69 | SW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0.375 | 9.53 | Blue sky | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.42 | 747.2 | 29.82 | 757.4 | 41.5 | 5.3 | ..... | WSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds | Rev. S. J. Perry. |
| Stratfield Turgiss | 29.71 | 754.6 | 29.93 | 760.2 | 43.9 | 6.6 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | C.H.Griffith, F.M.S. |
| Thurso | 29.38 | 746.2 | 29.44 | 747.8 | 39 | 3.9 | ..... | SSW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | John Trotter. |
| Truro, Royal Institution | 29.94 | 760.5 | 30.01 | 762.2 | 49 | 9.4 | ..... | NW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | W. Newcombe. |
| Valencia, Observatory | 29.96 | 761.0 | 29.98 | 761.5 | 45.4 | 7.4 | ..... | W | 18 | 8.0 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | The Meteorological Of. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.02 | 762.5 | 30.06 | 763.5 | 72.2 | 22.3 | 51 | SSE | 25 | 11.2 | ..... | 2 | 4 | ..... | ..... | 0 | 0 | Fine | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.98 | 761.5 | 56.0 | 13.0 | 83 | S | ..... | ..... | 3 | ..... | 10k | ..... | ..... | 0 | 0 | Cloudy | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.69 | 754.1 | 54.2 | 12.3 | ..... | W | ..... | ..... | 5 | ..... | 5k | ..... | ..... | 0 | 0 | Cloudy | Andrew Gibb. |
| Mauritius, Observatory | 29.82 | 757.4 | 30.00 | 762.1 | 77.4 | 25.2 | 72 | SE | 8.0 | 3.6 | ..... | ..... | 10 | ..... | SE | 0 | 0 | Cloudy | C. Meldrum. |
| Melbourne, Observatory | 29.79 | 756.6 | 29.88 | 758.9 | 61.3 | 16.3 | 71 | SE | 4 | 1.8 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | Lunar halo | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 29.48 | 748.8 | 40 | 4.4 | ..... | W | ..... | ..... | 8 | 5 | 5 | W | ..... | 0 | 0 | ..... | J. Youngehause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.31 | 744 5 | 38 | 3.3 | ..... | SW | ..... | ..... | 7 | 3 | 7 | SW | ..... | ..... | ..... | Sleeting | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; Freetown reduced to freezing but not to sea-level. Amount of cloudiness for Holyhead by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day,) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day,) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fown," N. 35° 54', E. 14° 30' | ..... | ..... | 29.94‡ | 760.6‡ | 60 | 15.6 | ..... | NW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | Showery | Capt. W. J. L. Wharton. |
| Brig Alliance, N 16° 56', W. 40° 57' | ..... | ..... | 30.06‡ | 764.0‡ | 77.3 | 25.2 | ..... | E | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle Isle, N. 22° 35', W. 86° 30' | ..... | ..... | 30.22 | 767.6 | 77 | 25.0 | ..... | E | ..... | ..... | 6 | ..... | 8 | ..... | ..... | 6 | NE | Showery | Capt. A. J. Brown. |
| Ship British Commodore, N. 45° 30', W. 31° 25' | ..... | ..... | 29.97 | 761.2 | 58 | 14.4 | ..... | SW | ..... | ..... | 6 | ..... | 4 | ..... | ..... | 6 | sw&nw | D. clouds | Capt. J. W. Thorne. |
| Barque City of Agra, S. 3° 03', W. 27° 57' | ..... | ..... | 29.95‡ | 760.7‡ | 78.5 | 25.8 | ..... | NNE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | NE | Gloomy | Capt. Thos. Young. |
| Barque Commewyne, N. 14° 35', W. 56° 23' | ..... | ..... | 30.12‡ | 765.0‡ | 82.5 | 28.1 | ..... | ENE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | Capt. A. Buchan. |
| ——Denbighshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Murdoch. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole, N. 40° 01' W. 17° 23' | ..... | ..... | 30.29‡ | 769.4‡ | 56.8 | 13.8 | ..... | N | ..... | ..... | 5 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven, N. 6° 47', E. 76° 33' | ..... | ..... | 29.80‡ | 756.9‡ | 83 | 28.3 | ..... | WNW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Capt. C. W. Pearson. |
| S. S. Wyberton, N. 7° 59', E. 72° 04' | ..... | ..... | 29.86‡ | 758.9‡ | 83.5 | 28.6 | ..... | N | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | | | | | | | | | | | | | | | | | | | Mr. Ansart. |
| San José | 26.27 | 667.2 | 29.99 | 761.7 | 65.3 | 18.5 | 88 | NE | | | 4 | 2cs | | E | | 0 | 0 | | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.76 | 756.0 | 29.81 | 757.2 | 34.0 | 1.1 | 96 | SW | | | 2 | | 10 | | | | | Foggy | |
| Fanöe | 29.75 | 755.6 | 29.77 | 756.1 | 32.7 | 0.4 | 100 | SSW | | | 4 | | 10 | | | | | Foggy | |
| Godthaab, (Greenland) | 29.49 | 749.1 | 29 54 | 750.2 | 4.8 | —15.1 | 68 | N | | | 2 | | 9 | | | | | | |
| Stykkisholm, (Iceland) | | | | | | | | | | | | | | | | | | | |
| Thorshavn, (Faröe) | 29.05 | 737.8 | 29.08 | 738.7 | 39.2 | 4.0 | 50 | SW | | | 5 | | 4 | | | | | Sleeting | |
| Vestervig | 29.49 | 749.1 | 29.66 | 753.4 | 35.2 | 1.8 | 95 | S | | | 2 | | 6 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.54 | 750.3 | 30.09 | 764.3 | 37.4 | 3 | 96 | SW | | | 1 | | 10 | | | 0.012 | 0.3 | Foggy | Collignon, Director. |
| Amiens, Normal School | 29.88 | 758.9 | 29.99 | 761.7 | 45.7 | 7.6 | 79 | WSW | | | 1 | | 2 | | E | 0 | 0 | Slightly cl'dy | Bonvallet, Director. |
| Avignon, Normal School | 29.87 | 758.8 | 29.95 | 760.8 | 56.5 | 13.6 | 47 | N | | | 1 | | 0 | | | 0 | 0 | Very clear | M. Giraud, Director. |
| Bar-sur-Seine | 29.47 | 748.6 | 30.06 | 763.4 | 35.4 | 1.9 | 93 | SSE | | | 1 | | 10 | | | 0 | 0 | Covered | G. Saillard, Director. |
| Beauvais, Normal School | 29.74 | 755.4 | 30.03 | 762.8 | 45.7 | 7.6 | 67 | SW | | | 1 | | 5 | | WSW | 0 | 0 | Cloudy | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.10 | 739.1 | 30.01 | 762.3 | 41.7 | 5.4 | 78 | E | | | 2 | | 0 | | | 0 | 0 | Clear | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.19 | 741.4 | 30.10 | 764.4 | 34.7 | 1.5 | 93 | NW | | | 1 | | | | | 0 | 0 | Foggy | M. Marlot, Director. |
| Bourges, Normal School | 29.48 | 748.7 | 30.04 | 763.0 | 45.0 | 7.2 | 79 | NE | | | 2 | | 1 | NE | NE | 0.008 | 0.2 | Clear | A. Waquet, Director. |
| Brest, Naval Observatory | 29.73 | 755.2 | 29.98 | 761.4 | 51.1 | 10.6 | 80 | WSW | | | 3 | | 9 | | WSW | 0 | 0 | | M. de Rermarec, Director |
| Carcassonne, Normal School | 29.57 | 751.1 | 29.98 | 761.6 | 56.1 | 13.4 | 58 | W | | | 1 | | 0 | | | 0 | 0 | Clear | September, Director. |
| Caen, Normal School | 29.95 | 760.8 | 30.03 | 762.7 | 42.8 | 6 | 82 | N | | | 1 | | 0 | | | 0 | 0 | Clear | M. Lair, Director. |
| Chartres, Normal School | 29.41 | 747.1 | 30.02 | 762.4 | 47.5 | 8.6 | 78 | NW | | | 1 | | 1 | | SE | 0 | 0 | | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.75 | 755.7 | 30.09 | 764.2 | 37.4 | 3.0 | 93 | SE | | | 2 | | 10 | | | 0 | 0 | Covered | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.61 | 726.6 | 29.97 | 761.3 | 49.8 | 9.9 | 60 | NE | | | 1 | | 0 | | | 0 | 0 | Misty | Alluard, Director. |
| Commercy, Normal School | 29.17 | 740.8 | 30.03 | 762.7 | 33.6 | 0.9 | 92 | W | | | 1 | | 10 | | | 0 | | Covered | Dr. Coulet, Director. |
| Commune de Grèasque* | 28.81 | 731.8 | 29.95 | 760.8 | 56.3 | 13.5 | 68 | W | | | 1 | | 5 | | W | 0 | 0 | ½ covered | M. Kina, Director. |
| Grenoble, Normal School | 29.23 | 742.4 | 30.01 | 762.2 | 46.4 | 8 | 72 | WNW | | | 1 | 2c | | N | | 0 | 0 | Slightly cl'dy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.87 | 758.6 | 30.09 | 764.2 | 45.7 | 7.6 | 91 | N | | | 1 | | 0 | | | 0 | 0 | Clear | Mouillot, Director |
| Le Mans, Normal School | 29.75 | 755.7 | 30.08 | 763.9 | 41.5 | 5.3 | 94 | WSW | | | 2 | | 2 | | WSW | 0 | 0 | Slightly cl'dy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.12 | 739.6 | 30.06 | 763.6 | 34.5 | 1.4 | 93 | SW | | | 2 | | 10 | | | 0 | 0 | Covered | Baudry, Director. |
| Lorient, Naval Observatory | 29.98 | 761.4 | 30.08 | 763.9 | 49.6 | 9.8 | 81 | WSW | | | 3 | | | | SW | 0.024 | 0.60 | | Lt T. Carré, Director. |
| Mâcon, Normal School | | | | | | | | | | | | | | | | | | | M. Galzin, Director |
| Mirecourt, Normal School | 28.94 | 735.0 | 30.03 | 762.8 | 32.9 | 0.5 | 92 | N | | | 1 | | n | | S | 0 | 0 | | M. Barbier, Director. |
| Nîmes, Normal School | 29.74 | 755.3 | 29.94 | 760.5 | 60.4 | 15.8 | 36 | NE | | | 1 | | 0 | | | 0 | 0 | Clear | Boyer, Director. |
| Privas, Normal School | 28.94 | 735.1 | 30.01 | 762.3 | 54.5 | 12.5 | 43 | N | | | 1 | | 1 | N | N | 0 | 0 | Clear | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 25 04 | 636.1 | | | 29.3 | — 1.5 | 100 | E | | | 2 | | 1 | | | 0 | 0 | Almost clear | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.04 | 763.0 | 30.07 | 763.8 | 51.6 | 10.9 | 85 | NNW | | | 1 | | 0 | | | 0 | 0 | Clear | Lt. Decante, Director. |
| Rouen, Normal School | 29.94 | 760.5 | 30.03 | 762.7 | 46.2 | 7.9 | 75 | ENE | | | 1 | | 0 | | | 0 | 0 | Clear | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.99 | 761.8 | 30.02 | 762.6 | 51.1 | 10.6 | 60 | W | | | 1 | | 1 | | W | 0 | 0 | Clear | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.89 | 759.1 | 30.05 | 763.3 | 39.7 | 4.3 | 90 | S | | | 1 | | | | S | 0 | 0 | | E. Renou, Director. |
| Tarbes, Normal School | 28.99 | 736.4 | 30.09 | 764.2 | 51.8 | 11 | 41 | SW | | | 2 | | 0 | | | 0 | 0 | Clear | T. Huguet, Director. |
| Versailles Observatory | 29.54 | 750.3 | 30.03 | 762.8 | 44.8 | 7.1 | | S | | | 1 | | 0 | | | 0.008 | 0.20 | Foggy | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.32 | 744.7 | 30.05 | 763.2 | 47.3 | 8.5 | 94 | NE | | | 1 | | 5 | | N | 0 | 0 | Cloudy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.92 | 760.0 | 29.95 | 760.7 | 75.2 | 24 | | | | | | | | | | 0.35 | 9. | | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 29.42 | 747.3 | 30.07 | 763.7 | 37.8 | 3.2 | 83 | N | | | 1 | | 10 | | | 0 | 0 | | Mr. Jays. |
| Marseilles, Observatory | | | | | | | | | | | | | | | | | | | The Staff. |
| Mont-Louis | 24.72 | 627.8 | 30.03 | 762.8 | 40.6 | 4.8 | 84 | W | 9.4 | 4.2 | | | 2 | | WNW | 0 | 0 | | M. Cave. |
| Nice | | | 29.96 | 760.9 | 56.5 | 13.6 | 67 | SE | | | 2 | | 2 | | | 0 | 0 | | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.76 | 756.0 | | | 38.1 | 3.4 | 97 | SSE | | | 2 | | 9 | | | 0 | 0 | | Marié Davy, Director. |
| Perpignan | 29.83 | 757.8 | 29.94 | 760.5 | 59.0 | 15.0 | 80 | N | 18.6 | 8.3 | | | 1 | | | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.39 | 568.7 | | | 30.2 | — 1.0 | | N | | | 1 | | 2 | | | 0 | 0 | Clear | Gen'l de Nansouty. |
| Toulouse, Observatory | 29.33 | 745.0 | 30.05 | 763.4 | 52.5 | 11.4 | 65 | WNW | | | 1 | | 2 | | | 0 | 0 | | M. Mercadier Juller. |
| Tours | 29.83 | 757.7 | 30.03 | 762.7 | 47.8 | 8.8 | 72 | N | | | 1 | | 2 | | W | 0 | 0 | | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.25 | 768.3 | 30.27 | 768.9 | 39.7 | 4.3 | 80 | N | 22.4 | 10.0 | | | 10 | | | 0.012 | 0.3 | Covered | Marc Dechevrens, S. J. |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque on the scale 0 to 4 and Brest on the scale 0 to 10; Mirecourt apparently gives cloud direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185 millimeters has been added *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instru-m'tal error and temperature. Inches. | Barometer. Corrected for instru-m'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12. | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.14 | 740.2 | 29.98 | 761.6 | 38.7 | 3.7 | 82 | W | | | 3 | | 6 | W | | 0.079 | 2.0 | | Prof. Dr. Hoh. |
| Berlin | 29.73 | 755.2 | 29.91 | 759.7 | 36.5 | 2.5 | 87 | W | | | 1 | | 10 | | | 0.449 | 11.4 | | Prof. Arndt. |
| Breslau | 29.38 | 746.2 | 29.91 | 759.6 | 34.0 | 1.1 | 79 | NW | | | 2 | | 10 | | | | | Snowy | Royal University Obs'y |
| Carlsruhe | 29.54 | 750.2 | 29.98 | 761.4 | 39.6 | 4.2 | 50 | SW | | | 1 | | 1 | SW | | 0 | 0 | | Albert Senz. |
| Cassel | 29.33 | 745.0 | 29.94 | 760.4 | 38.1 | 3.4 | 75 | S | | | 2 | | 3 | SW | | 0.012 | 0.30 | Snowing | Dr. H. Möhl. |
| Crefeld | 29.81 | 757.1 | 29.97 | 761.2 | 42.1 | 5.6 | 75 | SW | | | 4 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.84 | 758.0 | 30.22 | 767.5 | 40.3 | 4.6 | | NW | | | 1 | | 3 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.55 | 725.2 | 29.94 | 760.4 | 38.1 | 3.4 | 63 | W | | | 4 | | 4 | W | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.83 | 757.7 | 29.91 | 759.6 | 34.2 | 1.2 | 92 | SW | | | 1 | | 10 | | | 0.004 | 0.1 | | Captain F. Hegemann. |
| Kiel | 29.83 | 757.6 | 29.84 | 758 0 | 36.0 | 2.2 | 87 | W | | | 5 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.77 | 756.2 | 29.86 | 758.4 | 33.6 | 0.9 | 88 | W | | | 1 | | 8 | | | 0.012 | 0.3 | Snowing | Prof. E. Luther. |
| Köslin | | | 29.83 | 757.6 | 35.8 | 2.1 | | SW | | | 2 | | 8 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.52 | 749.7 | 29.95 | 760.8 | 37.8 | 3.2 | 80 | WSW | | | 2 | | 10 | | | 0.114 | 2.9 | | Prof. Bruhns, Privy Counsellor. |
| Memel, Naval School | 29.82 | 757.3 | 29.86 | 758.5 | 35.6 | 2.0 | 87 | Calm | | | 0 | | 10cs | | | | | | Skalweit. |
| Neufahrwasser | 29.87 | 758.8 | 29.89 | 759.2 | 36.0 | 2.2 | 72 | Calm | | | 0 | | 10 | | | 0 | 0 | | A. Lothes. |
| Posen | 29 63 | 752.7 | 29.93 | 760.3 | 35.6 | 2.0 | 80 | S | | | 2 | | 10 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.50 | 749.3 | 30.08 | 764.0 | 34.3 | 1.3 | 96 | S | | | 1 | | 6 | | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 29.04 | 737.7 | 29.97 | 761.3 | 41.7 | 5.4 | 69 | W | | | 2 | | 0 | | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | | | | | | | | | | | | | | | | | | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.46 | 723.0 | 30.03 | 762.7 | 35.8 | 2.1 | 76 | Calm | 0 | 0 | | | 10 | | | 0.056 | 1.4 | | Dr. Van Bebber. |
| Wustrow, Naval School | 29.83 | 757.6 | 29.85 | 758.2 | 32.0 | 0.0 | 100 | W | | | 2 | | Fog | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.45 | 748.1 | 29.55 | 758 1 | 57.4 | 14.1 | | NW | | | 1.0 | | | | | | | ½Clear | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Deesa | 29.46 | 748.3 | 29.94 | 760.6 | 72.7 | 22.6 | 22 | NW | 10.9 | 4.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.90 | 759.5 | 29.94 | 760.5 | 78.9 | 23.3 | 68 | NW | 28 | 12.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.18 | 741.2 | 29.94 | 760.6 | 69.7 | 20.9 | 24 | W | 3.3 | 1.5 | | | 0? | | | 0 | 0 | Gloomy? | |
| Belgaum | 27.35 | 694.6 | 29.86 | 758.4 | 81.9 | 27.7 | 53 | W | 10.0 | 4.5 | | | 1 | | | 0 | 0 | | |
| Roorkee | 28.94 | 735.2 | 29.86 | 758.5 | 69.8 | 21.0 | 40 | NW | 2.8 | 1.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Agra | 29.34 | 745.3 | 29.92 | 759.9 | 73.7 | 23.2 | 22 | W | | | | | 4 | | W | 0 | 0 | | |
| Nagpur | 28.76 | 730.5 | 29.79 | 756.6 | 87.7 | 30.9 | 31 | W | 4.9 | 2.2 | | | | | | 0 | 0 | Blue sky | |
| Lucknow | 29.46 | 748.2 | 29.84 | 757.9 | 74.3 | 23.5 | 45 | NNW | 2.0 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.52 | 749.9 | 29.84 | 758.0 | 75.9 | 24.4 | 53 | Calm | 3.7 | 1.6 | | | 9 | | | 0 | 0 | D. clouds | |
| Patna | 29.61 | 752.2 | 29.80 | 756.8 | 78.5 | 25.8 | 56 | W | 0.8 | 0.4 | | | 10 | W | W | 0 | 0 | Overcast | |
| Hazaribagh | 27.78 | 705.5 | 29.78 | 756.4 | 78.8 | 26.0 | 30 | WNW | 6.1 | 2.7 | | | 2 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.70 | 754.4 | 29.78 | 756.4 | 87.1 | 30.6 | 57 | S | 3.2 | 1.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.74 | 755.5 | 29.77 | 756.1 | 83.3 | 28.5 | 75 | WNW | 8.0 | 3.6 | | | 1 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.33 | 745.0 | 29.72 | 754.9 | 80.8 | 27.1 | 42 | Calm | 5.5 | 2.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.74 | 755.4 | 29.83 | 757.8 | 79.1 | 26.2 | 83 | S | 6.1 | 2.7 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.47 | 748.5 | 29.82 | 757.3 | 68.1 | 17.3 | 93 | ENE | 1.1 | 0.5 | | | 8 | W | W | 0.01 | 0.3 | D clouds | |
| Jubbulpore | 28.48 | 723.5 | 29.86 | 758.5 | 74.3 | 23.5 | 43 | N | 4.0 | 1.8 | | | 6 | E | | 0 | 0 | D. clouds | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,551 ft., or 411.5 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.54 | 750.2 | 29.96 | 760.9 | 44.4 | 6.9 | 53 | S | 1.3 | 0.6 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Padua | 29.42 | 747.2 | 29.95 | 760.7 | 48.2 | 9.0 | 64 | S | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Milan | 29.54 | 758 0 | 29.96 | 760.9 | 46.9 | 8.3 | 42 | S | 5.6 | 2.5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.03 | 737.4 | 29.96 | 761.1 | 46.9 | 8.3 | 69 | NNW | 2.5 | 1.1 | ..... | ..... | 6 | SSE | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 29.74 | 755.4 | 29.94 | 760.4 | 51.4 | 10.8 | 62 | NE | 1.3 | 0.6 | ..... | ..... | 6 | E | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Genoa | 28.00 | 711.2 | 29.96 | 761.0 | 42.4 | 5.8 | 64 | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Florence | 29.90 | 759.4 | 29.95 | 760.7 | 46.6 | 8.1 | 53 | E | 9.4 | 4.2 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Cav. F Meucci |
| Leghorn | 29.67 | 753.5 | 29.93 | 760.2 | 53.6 | 12.0 | 28 | W | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.82 | 757.4 | 29.91 | 759.6 | 52.5 | 11.4 | 37 | ENE | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Rome | 29.72 | 754.8 | 29.90 | 759.4 | 54.0 | 12.2 | 49 | NW | 3.1 | 1.4 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.63 | 752.7 | 29.89 | 759.3 | 47.7 | 8.7 | 70 | N | 28.0 | 12.5 | ..... | ..... | 8 | N | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 28.98 | 736.2 | 29.89 | 759.2 | 55.0 | 12.8 | 75 | NW | 1.8 | 0.8 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.68 | 753.9 | 29.88 | 758.9 | 58.6 | 14.8 | 63 | SW | ..... | ..... | 2 | ..... | 8 | N | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Palermo | 29.65 | 753.2 | 29.91 | 759.8 | 54.5 | 12.5 | 70 | ENE | 3.8 | 1.7 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.82 | 757.5 | 29.90 | 759.4 | 57.0 | 13.9 | 59 | NNE | 9.8 | 4.4 | ..... | ..... | 7 | W | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.39 | 746.5 | 29.94 | 760.6 | 52.3 | 11.3 | 51 | NW | 5.6 | 2.5 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.17 | 766.3 | 30.19 | 766.8 | 47.9 | 8.8 | 75 | N | 6.6 | 2.9 | ..... | ..... | 10ck | ..... | SW | 0.015 | 0.38 | Cloudy | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.87 | 758.7 | 30.08 | 764.0 | 50.7 | 10.4 | 76 | N | 2.8 | 1.3 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 30.15 | 765.8 | 30.22 | 767.6 | 42.9 | 6.1 | 99 | NNE | 3.5 | 1.6 | ..... | ..... | 10n | ..... | ..... | 0.440 | 11.17 | Light rain | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.25 | 641.2 | 30.44 | 773.1 | 50.0 | 10.0 | 49 | NE | ..... | ..... | 2 | 0 | 9 | ..... | SW | 0 | 0 | Very cloudy | Prof. L. Perez. |
| Leon | 24.60 | 624.9 | 30.28 | 769.3 | 50.9 | 10.5 | 73 | SW | ..... | ..... | 2 | 6c | 1k | SW | ..... | 0 | 0 | ..... | Prof. M. Leal |
| Mexico, Central Obs'y | 23.23 | 590.0 | 30.53 | 775.5 | 39.2 | 4.0 | 74 | NW | 0.9 | 0.4 | ..... | 0 | ks | ..... | ..... | 0 | 0 | Foggy | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 46.4 | 8.0 | 82 | SW | ..... | ..... | 1 | 4os | 0 | SW | ..... | 0 | 0 | Clear | M. V. de Leon, M. E. |
| Tlacotalpam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. M. Cházaro. |
| San Luis Potosi | 24.17 | 613.7 | 30.19 | 766.7 | 47.0 | 8.3 | 66 | E | ..... | ..... | 1 | 6 | 4 | E | W | 0 | 0 | Covered | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | T. G. de la Cadena. |
| Puebla, (Catholic Institute) | 23.48 | 596.5 | 30.25 | 768.3 | 38.1 | 3.4 | 84 | N | 1.8 | 0.8 | ..... | ..... | 4 | ..... | Calm | 0 | 0 | Light clouds | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.47 | 722.3 | 30.13 | 765.4 | 73.9 | 23.3 | 63 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,263.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1893 m., or 6210.4 ft.; Zacatecas, 2,496 m., or 8,188.8 ft.; Puebla, Catholic Institute, 2201m., or 7220.9 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 532 m., or 1745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.95 | 760.8 | 29.95 | 760.8 | 41.0 | 5.0 | ..... | WSW | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.012 | 0.3 | ..... | ..... |
| Groningen | 29.84 | 758.0 | 29.90 | 759.4 | 35.8 | 2.1 | ..... | SW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Helder | 29.86 | 758.4 | 30.86 | 758.4 | 39.4 | 4.1 | ..... | SSW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.043 | 1.1 | ..... | ..... |
| Hellevoetsluis | 29.93 | 760.1 | 29.93 | 760.1 | 43.3 | 6.3 | 85 | SW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Utrecht | 29.91 | 759.7 | 29.96 | 760.9 | 36.7 | 2.6 | 93 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 047 | 1.2 | Dull | H. v. d. Brink. |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.46 | 748.2 | 29.51 | 749.6 | 33.4 | 0.8 | 96 | S | 9.8 | 4.4 | ..... | ..... | 10 | ..... | ..... | 0.717 | 18.2 | Snowing..... | |
| Brönö | 29.35 | 745.5 | 29.39 | 746.5 | 39.6 | 4.2 | 68 | SSW | 27 | 12 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.46 | 748.2 | 29.61 | 752.0 | 34.7 | 1.5 | 98 | SSW | 9 | 4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Light fog..... | |
| Tromsö | 29.23 | 742.4 | 29.27 | 743.5 | 39.2 | 4.0 | 67 | SW | 25 | 11 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.27 | 768.8 | 30.46 | 773.7 | 56.1 | 13.4 | 86 | SSW | 3.8 | 1.7 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.95 | 735.4 | 29.98 | 761.5 | 60.6 | 15.9 | 87 | NNE | 11.9 | 5.3 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.07 | 763.8 | 30.16 | 766.0 | 60.8 | 16.0 | 60 | SW | 6.3 | 2.8 | ..... | ..... | 8 | ..... | ..... | 0.169 | 4.3 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.66 | 753.3 | 30.02 | 762.5 | 56.7 | 13.7 | 55 | NNE | 21.0 | 9.4 | ..... | ..... | 3 | E | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.42 | 772.6 | 30.49 | 774.4 | 63.0 | 17.2 | 52 | NE | 6.3 | 2.8 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | A. G. da Silva Costa Com'd.t. |
| D. Fernando | ..... | ..... | ..... | A. M. de Sande, Comd't. |
| India | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | 2 | W | D. Clouds ... | A. J. de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | J. T. d'Oliveria, Com'd't |
| Rio Lima, Capt. S. C. da SilvaCosta, Porto Praya, Cape Verd Islands. | 3 | NE | D. clouds..... | A. Ferreira, 2nd Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | D. clouds..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | 1 | ..... | Overcast..... | J. M. T. Guimaraes, Com'd't. |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.42 | 747.3 | 29.86 | 758.5 | 30.2 | — 1.0 | 92 | NW | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing..... | Astronomical Obs |
| Wilna | 29.39 | 746 6 | 29.83 | 757.6 | 36.9 | 2.7 | 91 | SE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds .. | Astronomical Obs. |
| Dorpat | 29.74 | 755.5 | 30.00 | 761.9 | 35.4 | 1.9 | 88 | ESE | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weibrauch. |
| St. Petersburg | 30.04 | 763.1 | 30.06 | 763.5 | 33.8 | 1.0 | 83 | SE | 13 | 6 | ..... | ..... | 2ks | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.01 | 736.9 | 29.67 | 753.6 | 32.0 | 0.0 | 100 | E | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Raining..... | Physical Cabinet. |
| Nikolaiev | 29.68 | 753.9 | 29.75 | 755.7 | 36.0 | 2.2 | 85 | NW | 18 | 8 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.78 | 756.3 | 29.80 | 756.8 | 48.9 | 9.4 | 89 | NW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds. ; | Lagorio. |
| Moscow | 29.72 | 755.0 | 30.31 | 769.9 | 28.4 | — 2.0 | 84 | SE | 9 | 4 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.69 | 754.1 | 29.89 | 759.3 | 46.6 | 8.1 | 61 | ENE | 31 | 14 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Archangel | 30.11 | 764.8 | 30.13 | 765.3 | 36.3 | 2.4 | 75 | SSW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | .. ..... | Capt. Sseliwerstow. |
| Tiflis | 28.41 | 721.5 | 29.79 | 756.7 | 64.0 | 17.8 | 28 | Calm | 0 | 0 | ..... | ..... | 7k | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.06 | 763.4 | 29.97 | 761.3 | 45.7 | 7.6 | 29 | ENE | 16 | 7 | ..... | ..... | 8s | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.85 | 758.1 | 30.35 | 770.8 | 27.3 | — 2.6 | 75 | N | 11 | 5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 30.10 | 764.4 | 30.38 | 771.7 | 25.5 | — 3.6 | 80 | NNE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Ekaterinburg | 29.41 | 747.1 | 30.46 | 773.8 | 15.6 | — 9.1 | 54 | Calm | 0 | 0 | ..... | ..... | 1cs | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.80 | 756.9 | 30.04 | 762.9 | 54.7 | 12.6 | 16 | SSE | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.62 | 726.8 | 30.37 | 771.3 | 47.3 | 8.5 | 41 | NW | 13 | 6 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 30.14 | 765.5 | 30.70 | 779.8 | 3.9 | —15.6 | 74 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.48 | 774.3 | 30.52 | 782.7 | 2.7 | —16.3 | 75 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 30.33 | 770.3 | 30.47 | 773.9 | 30.2 | — 1.0 | 54 | Calm | 0 | 0 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend 455? m., or 1,492.7? ft., Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E. 48° 34'.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.84 | 757.9 | 29.95 | 760.6 | 53.6 | 12 | 62 | NE | 4.0 | 1.81 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 30.06 | 763.5 | 30.12 | 765.0 | 54.0 | 12.2 | 84 | NE | 1.7 | 0.78 | ..... | 1 | 8 | E | ..... | Inap. | Inap. | Rainy..... | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.05 | 687.0 | ..... | ..... | 46.8 | 8.2 | 75 | NE | 5.3 | 2.36 | ..... | 0 | 7 | ..... | ..... | 0 | 0 | Cloudy..... | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.72 | 704.0 | ..... | ..... | 56.8 | 13.8 | 47 | NE | 8.9 | 4.00 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | D. clouds..... | The Staff. |
| Murcia, Met. Obs'y | 29.79 | 756.6 | 29.94 | 760.4 | 63.0 | 17.2 | 62 | E | 1.9 | 0.86 | ..... | 7 | 2 | S | ..... | 0 | 0 | Cloudy..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y. | 29.15 | 740.4 | 30.05 | 763.3 | 54.3 | 12.4 | 65 | NE | 5.6 | 2.5 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | Almost clear | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 30.18 | 766.6 | 30.25 | 768.3 | 70.8 | 21.6 | 70 | ENE | 8.1 | 3.6 | ..... | 6ck | 2k | E | ..... | 0 | 0 | Fair ..... | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.78 | 756.5 | 29.83 | 757.8 | 83.5 | 28.6 | 82 | SW | 12.3 | 5.5 | ..... | 0 | 1s | ..... | ..... | 0 | 0 | Fair..... | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.83 | 757.7 | 29.93 | 760 2 | 61.9 | 16.6 | 55 | ESE | 8.9 | 4.0 | ..... | 0 | 10 | ..... | E | 0.012 | 0.3 | ..... | Capt. C. Pujazon, R. N. Dir. |
| San Juan de Porto Rico, W. I. | 29.94 | 760.4 | 30.03 | 762.7 | 76.3 | 24.6 | 89 | Calm | 0 | 0 | ..... | 6k | 3k | S | S | 0.266 | 6.75 | Cloudy..... | Leonardo de Tejeda, Ch'f. Eng'r |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.71 | 754.7 | 29.78 | 755.7 | 29.5 | — 1.4 | ..... | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.68 | 753.9 | 29.73 | 755.2 | 30.9 | — 0.6 | 100 | SW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.043 | 1.1 | ..... | |
| Hernosand | 29.61 | 752.1 | 29.66 | 753.4 | 33.4 | 0.8 | 96 | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.62 | 752.3 | 29.80 | 756.8 | 31.8 | — 0.1 | 87 | SSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.75 | 755.7 | 29.81 | 757.2 | 35.6 | 2 0 | 82 | SSW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.71 | 754.5 | 29.78 | 756.4 | 31.5 | — 0.3 | 96 | S | 11.9 | 5.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.55 | 725.2 | 30.02 | 762.4 | 41.4 | 5.2 | 61 | N | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Zurich | 28.35 | 720.1 | 30.04 | 763.0 | 39.2 | 4.0 | 67 | E | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —0.2 mm.; Thermometer, —0.8 cent.; Relative Humidity, —4 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.90 | 759.4 | 46.9 | 8.3 | 63 | NE | 9 | 4.0 | ..... | ..... | 7 | ..... | NE | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.32 | 770.0 | 63.7 | 17.6 | ..... | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.84 | 757.9 | 54.0 | 12.2 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.66 | 753.4 | 29.78 | 756.4 | 57.6 | 14.2 | 85 | SW | ..... | ..... | 3 | ..... | 10n | ..... | SW | 0.54 | 13.7 | Raining | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.45 | 773 4 | 30.52 | 775.2 | 10.6 | —11.9 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Hon. J. Ferguson |
| Brockville, Ontario | 30.33 | 770.4 | 30.37 | 770.0 | 4 | —15 6 | ..... | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. R. Bigg. |
| *Chatham, N B | 30.43 | 772.9 | 30.49 | 774.4 | 6 | —14.4 | 83 | Calm | 0 | 0 | ..... | 9ck | 0 | SW | ..... | 0 | 0 | Fair | G. A. Blair. |
| Charlottetown, P. E. Island | 30.37 | 771.4 | 30.42 | 772.6 | 17 | — 8.3 | 83 | NW | 8 | 3.6 | ..... | ..... | 8s | ..... | Calm | 0 | 0 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 30.40 | 772.1 | 30.62 | 777.7 | — 5.4 | —20.8 | 100 | W | ..... | ..... | 1 | 0 | Fog | ..... | ..... | 0 | 0 | Fair | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | W. H. Bevis. |
| *Father Point, Quebec | 30.46 | 773.7 | 30.48 | 774.2 | 16 | — 9.4 | 65 | N | 20 | 8.9 | ..... | 5k | 2s | NW | NW | 0 | 0 | Fair | J. McWilliams. |
| Fredericton, N. B | 30.48 | 774.2 | 30.45 | 773.4 | 15.1 | — 9.4 | 81 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Overcast | Prof. Harrison. |
| *Fort Garry Manitoba | 28.95 | 735.3 | 29.81 | 757.2 | 26 | — 3.9 | 95 | S | 22 | 9.8 | ..... | 5k | 5ks | Calm | Calm | 0 | 0 | Cloudy | James Stewart. |
| Granton, Ontario | 29.43 | 747.5 | 30.64 | 778.2 | 13 | —10.6 | ..... | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 29.97 | 761.2 | 30.11 | 764.8 | 26 | — 3.3 | 86 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | NW | 0 | 0 | Cloudy | F. Allison, M. A. |
| Hamilton, Ontario | 29.26 | 743.2 | 30.66 | 778.8 | 10.7 | —11.8 | 94 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Conteut, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 30.28 | 769.1 | 30.66 | 778.8 | 2 | —16.7 | 95 | NW | 1 | 0.4 | ..... | ..... | Fog | ..... | NW | 0 | 0 | Foggy | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.32 | 770 1 | 30.37 | 771.4 | 17.7 | — 7.9 | 92 | NW | 8 | 3.6 | ..... | 4k | 0 | NW | ..... | 0 | 0 | Fair | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 30.39 | 771.9 | 30.61 | 777.5 | 12 | —11.1 | 84 | SW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | C. H. McLeod, C. E |
| *Parry Sound, Ontario | 29.80 | 756.2 | 30.69 | 779.6 | — 8 | —22.2 | 60 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | 29.84 | 757.9 | 30.69 | 779.6 | 4.8 | —15.1 | 83 | Calm | ..... | ..... | ..... | 0 | 4ks | ..... | ..... | 0 | 0 | Fair | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.87 | 758.7 | 30.63 | 778.0 | 15 | — 9.4 | 98 | NE | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. Morgan. |
| Port Hastings, N. S | 30.31 | 760.0 | 30.37 | 771.4 | 17.7 | — 7.9 | ..... | NW | 8 | 1.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.90 | 759.4 | 30.62 | 777.7 | 11 | —11.7 | 94 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | M. Payne. |
| *Quebec, Quebec | 30.28 | 767.8 | 30.59 | 777.0 | 8 | —13.3 | 78 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 30.15 | 765.8 | 30.69 | 779.6 | — 8 | —22.2 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. McIntyre. |
| St. Andrews, N. B | 30.48 | 774.2 | 30.53 | 775.4 | 16 | — 8.9 | 73 | NW | ..... | ..... | 1 | 5k | 2ks | ..... | ..... | 0 | 0 | Fair | Dr. Gove. |
| St. John, N. B | 30.36 | 771.1 | 30.54 | 775.7 | 17 | — 8.3 | 83 | NW | 7 | 3.1 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Overcast | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.85 | 758.2 | 30.66 | 778.8 | 2 | —16.7 | 75 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | K. Stewart. |
| Stayner, Ontario | 29.80 | 756.9 | 30.67 | 779.0 | 13 | —10.6 | 92 | N | 8 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. J. Cole. |
| Stratford, Ontario | 29.22 | 742.2 | 30.68 | 779.3 | — 0.7 | —18.2 | 97 | E | 1.5 | 0.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.29 | 769.4 | 30.34 | 770.6 | 18 | — 7.8 | 81 | W | 8 | 3.6 | ..... | 10k | 2ks | NW | NW | 0.01 | 0.3 | Fair | T. C. Hill. |
| *Toronto, Ontario | 30.24 | 768.1 | 30.67 | 779.0 | 9 | —12.8 | 81 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Magnetic Observatory. |
| Windsor, N. S | 30.34 | 770.6 | 30.44 | 773.2 | 10.0 | —12.2 | 90 | W | 4 | 1.8 | ..... | 2k | 0 | ..... | ..... | 0 | 0 | Fair | Prof. John E. Oram |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 20.0 | — 6.7 | 85 | NE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.24 | 6.1 | Fair | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters, Stratford, 1,182 ft., or 360.3 meters.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 30.41 | 772.4 | 30.66 | 778.8 | 15 | — 9.4 | 82 | N | 8 | 3.6 | ..... | 1c | Haze | W | ..... | 0 | 0 | Clear | |
| Alpena, Michigan | 29.92 | 760.0 | 30.66 | 778.8 | 2 | —16.7 | 72 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Atlanta, Georgia | 29.17 | 740.9 | 30.34 | 770.6 | 45 | 7.2 | 76 | NW | 17 | 7.6 | ..... | 5k | 5s | NW | NW | 0 | 0 | Cloudy | |
| Atlantic City, New Jersey | 30.57 | 776.5 | 30.58 | 776.7 | 31 | — 0.6 | 79 | N | 7 | 3.1 | ..... | 10cs | 0 | NW | ..... | 0.05 | 1.3 | Cloudy | |
| Augusta, Georgia | 30.03 | 762 8 | 30.21 | 767.3 | 53 | 11.7 | 73 | SW | 4 | 1.8 | ..... | ..... | 10s; fg | ..... | NW;Calm | 0 | 0 | Cloudy | |
| Baltimore, Maryland | 30.56 | 776.2 | 30.61 | 777.5 | 32 | 0.0 | 89 | NE | 3 | 1.3 | ..... | ..... | 10n | ..... | Calm | 0.49 | 12.4 | Light snow | |
| Barnegat, New Jersey | 30.53 | 775.4 | 30.56 | 776.2 | 33 | 0.6 | 79 | NE | 13 | 5.8 | ..... | 5k | 5s | N | Calm | 0.01 | 0.3 | Cloudy | |
| Bismarck, Dakota | 27.84 | 707.1 | 29.69 | 754.1 | 23 | — 5.0 | 86 | NE | 3 | 1.3 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Boerne, Texas | 28.94 | 735.1 | 30.31 | 769.9 | 48 | 8.9 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Boise City, Idaho | 27.25 | 692.1 | 30.21 | 767.3 | 31 | — 0.6 | 84 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Boston, Massachusetts | 30.45 | 773.4 | 30.62 | 777.7 | 28 | — 2.2 | 54 | N | 8 | 3.6 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Brackettville, Texas | 29.23 | 742.4 | 30.29 | 769 4 | 54 | 12.2 | 93 | E | 7 | 3.1 | ..... | ..... | 10n | ..... | SE | Inap. | Inap. | Light rain | |
| Breckenridge, Minnesota | 28.90 | 734.0 | 29.94 | 760.5 | 26 | — 3.3 | 100 | SE | 42 | 18.8 | ..... | ..... | 10n | ..... | Calm | 0.03 | 0.8 | Light snow | |
| Brownsville, Texas | 30.31 | 769.9 | 30.35 | 770.9 | 64 | 17.8 | 94 | N | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Buffalo, New York | 29.86 | 758.4 | 30.64 | 778.2 | 19 | — 7.2 | 77 | NE | 6 | 2.7 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 57 | 13.9 | 5 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 30.32 | 770.1 | 30.65 | 778.5 | 11.5 | —11.4 | 70 | E | 1 | 0.4 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Cairo, Illinois | 30.19 | 766 8 | 30.61 | 777.5 | 35 | 1.7 | 80 | N | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.25 | 641.3 | 30.05 | 763.3 | 58 | 14.4 | 53 | NE | 8 | 3.6 | ..... | 0 | 5ks | ..... | S | 0 | 0 | Fair | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 40 | 4.4 | 39 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.53 | 699.2 | 30.10 | 764.5 | 30 | — 1.1 | 79 | E | 4 | 1.8 | ..... | 2k | 0 | Calm | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.32 | 770.1 | 30.33 | 770.4 | 45 | 7.2 | 100 | NE | 10 | 4.5 | ..... | 1c | 8ks;s | Calm | Calm ;NE | 0 | 0 | Cloudy | |
| Cape Henry, Virginia | 30.38 | 771.6 | 30.40 | 772.1 | 39 | 3.9 | 91 | NE | 31 | 13.9 | ..... | ..... | 10n | ..... | Calm | 0.48 | 12.2 | Light rain | |
| Cape Lookout, N. Carolina | 30.28 | 769.1 | 30.30 | 769.6 | 48 | 8.9 | 100 | E | 8 | 3.6 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 30.48 | 774.2 | 30.51 | 774.9 | 34 | 1.1 | 80 | NE | 12 | 5.4 | ..... | ..... | 10s | ... ... | NE | 0.04 | 1.0 | Cloudy | |
| Castroville, Texas | 29.62 | 752.3 | 30.36 | 771.1 | 61 | 10.6 | 93 | SE | 4 | 1 8 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Threatening | |
| Charleston, South Carolina | 30.27 | 768.8 | 30.33 | 770.4 | 53 | 11.7 | 73 | SW | 6 | 2.7 | ..... | 4ck | Haze | W | Calm | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 28.90 | 607.0 | 29.84 | 757.9 | 45 | 7.2 | 31 | SW | 12 | 5.4 | ..... | 0 | 5ks | ..... | SW | 0 | 0 | Fair | |
| Chicago, Illinois | 29.85 | 758.2 | 30.60 | 777.2 | 30 | — 1.1 | 89 | E | 2 | 0.9 | ..... | 2cs | 0 | Calm | ..... | 0.06 | 1.5 | Clear | |
| Cincinnati, Ohio | 29.86 | 758.4 | 30.57 | 776.5 | 32 | 0.0 | 79 | N | 8 | 3.6 | ..... | ..... | 10ks | ..... | N | 0.72 | 18.3 | Cloudy | |
| Cleveland, Ohio | 29.78 | 756.4 | 30.58 | 776.7 | 22 | — 5.6 | 58 | NE | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.07 | 1.8 | Clear | |
| Coleman City, Texas | 28.57 | 725.7 | 30.29 | 769.4 | 48 | 8.9 | 85 | SE | 7 | 3.1 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Columbus, Ohio | 29.62 | 752.3 | 30.52 | 775.2 | 30 | — 1.1 | 78 | N | 5 | 2.2 | ..... | ..... | 10s;fg | ..... | N; Calm | 0.26 | 6.6 | Cloudy | |
| Concho, Texas | 28.45 | 722.6 | 30.19 | 766.8 | 46 | 7.8 | 76 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Corsicana, Texas | 30.01 | 762.2 | 30.51 | 774.9 | 39 | 3.9 | 73 | NW | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Davenport, Iowa | 29.87 | 758.7 | 30.57 | 776.5 | 22 | — 5.6 | 72 | NE | 2 | 0.9 | ..... | 1cs | 0 | Calm | ..... | 0.04 | 1.0 | Clear | |
| Deadwood, Dakota | 25.04 | 636.0 | ..... | ..... | 52 | 11.1 | 35 | SW | 15 | 6.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Decatur, Texas | 29.26 | 743.2 | 30.51 | 774.9 | 36 | 2.2 | 92 | N | 5 | 2.2 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Denison, Texas | 29.67 | 753.6 | 30.52 | 775.2 | 32 | 0.0 | 79 | NE | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Denver, Colorado | 24.64 | 625.8 | 29.86 | 758.4 | 47 | 8.3 | 48 | S | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Des Moines, Iowa | 29.52 | 749.8 | 30.47 | 773.6 | 25 | — 3.9 | 87 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Detroit, Michigan | 29.86 | 758.4 | 30.60 | 777.2 | 20 | — 6.7 | 85 | NE | 7 | 3.1 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Dodge City, Kansas | 27.54 | 699.5 | 29.93 | 760.2 | 33 | 0.6 | 89 | SE | 8 | 3.6 | ..... | 2cs | 2s● | Calm | NW | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.79 | 756.7 | 30.57 | 776.5 | 15 | — 9.4 | 65 | S | 1 | 0.4 | ..... | 5c | Haze | S | Calm | 0.04 | 1.0 | Fair | |
| Duluth, Minnesota | 29.65 | 760.6 | 30.28 | 769.1 | 16 | — 8.9 | 83 | Calm | 0 | 0 | ..... | 5cs | 2s | W | Calm | 0 | 0 | Fair | |
| Eagle Pass, Texas | 29.59 | 751.6 | 30.35 | 770.9 | 54 | 12.2 | 93 | SE | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light rain | |
| Eastport, Maine | 30.47 | 773.9 | 30.54 | 775.7 | 18 | — 7.8 | 68 | NW | 8 | 3.5 | ..... | 8ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 66 | 18.9 | 89 | NE | ..... | ..... | 1 | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.38 | 670.0 | ..... | ..... | 49 | 9.4 | 57 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.06 | 1.5 | Cloudy | |
| Erie, Pennsylvania | 29.83 | 757.7 | 30.61 | 777.5 | 22 | — 5.6 | 86 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Escanaba, Michigan | 29.84 | 757.9 | 30.61 | 775.5 | — 3 | —19.4 | 66 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.57 | 725.8 | 30.17 | 766.3 | 54 | 12.2 | 61 | Calm | 0 | 0 | ..... | 8c | 0 | W | ..... | 0 | 0 | Fair | |
| Fort Buford, Dakota | 27.74 | 704.6 | ..... | ..... | 18 | — 7.8 | 68 | NW | ..... | ..... | 2 | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort Craig, New Mexico | 25.62 | 650.7 | 29.69 | 754.1 | 52 | 11.1 | 53 | SW | 4 | 1.8 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Fort Davis, Texas | 25.40 | 645.2 | 30.36 | 771.1 | 47 | 8.3 | 77 | SW | 5 | 2.2 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.92 | 760.0 | 30.50 | 774.7 | 27 | — 2.8 | 88 | E | 4 | 1.8 | ..... | 5ck | Sn'e | W | Calm | 0 | 0 | Fair | |
| Fort Griffin, Texas | 29.08 | 738.6 | 30.40 | 772.1 | 45 | 7.2 | 53 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort Keogh, Montana | 27.32 | 693.9 | ..... | ..... | 22 | — 5.6 | 85 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort McKavett, Texas | 28.08 | 713.2 | 30.06 | 763.5 | 50 | 10.0 | 100 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 29.18 | 741.2 | 30.36 | 771.1 | 37 | 2.8 | 81 | SE | 8 | 3.6 | ..... | 0 | 8s | ..... | W | 0 | 0 | Cloudy | |
| Fort Stevenson, Dakota | 27.85 | 707.4 | ..... | ..... | 11 | —11.7 | 89 | SE | 2 | 0.9 | ..... | 1ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fredericksburg, Texas | 28.62 | 726.9 | 30.23 | 767.8 | 51 | 10.6 | 93 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 30.39 | 771.9 | 30.44 | 773.2 | 55 | 12.8 | 87 | N | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Graham, Texas | 29.33 | 745.0 | 30.44 | 773.2 | 44 | 6.7 | 68 | SE | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 29.91 | 759.7 | 30.65 | 778.5 | 7 | —13.9 | 77 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.72 | 754.9 | 30.57 | 776.5 | 28 | — 2.2 | 77 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.40 | 10.2 | Cloudy | |
| Indianola, Texas | 30.42 | 772.6 | 30.45 | 773.4 | 53 | 11.7 | 86 | NE | 12 | 5.4 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 29.26 | 743.2 | 30.45 | 773.4 | 44 | 6.7 | 67 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Jacksonville, Florida | 30.35 | 770.9 | 30.38 | 771.6 | 53 | 11.7 | 86 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.86 | 758.4 | 30.54 | 775.7 | 20 | — 6.7 | 77 | E | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Key West, Florida | 30.27 | 768.8 | 30.31 | 769.9 | 67 | 19.4 | 79 | NE | 12 | 5.4 | ..... | ..... | 10s | ..... | E | Inap. | Inap. | Cloudy | |
| Kittyhawk North Carolina | 30.34 | 770.6 | 30.36 | 771.1 | 41 | 5.0 | 100 | E | 10 | 4.5 | ..... | 8cs | Fog | Calm | Calm | 0 | 0 | Fair | |
| Knoxville, Tennessee | 29.43 | 747.5 | 30.49 | 774.4 | 37 | 2.8 | 81 | NW | 4 | 1.8 | ..... | ..... | 10ks | ..... | NE | Inap. | Inap. | Cloudy | |
| La Crosse, Wisconsin | 29.66 | 753.4 | 30.47 | 773.9 | 18 | — 7.8 | 68 | S | 12 | 5.4 | ..... | c | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.20 | 665.5 | 30.35 | 770 9 | 52 | 11.1 | 66 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Laredo, Texas | 29.95 | 760.7 | 30.30 | 769.6 | 59 | 15.0 | 82 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.55 | 750.6 | 30.46 | 773.7 | 29 | — 1.7 | 89 | S | 16 | 7 2 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Los Angeles, California | 29.82 | 757.4 | 30.17 | 766.3 | 47.5 | 8.6 | 85 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.94 | 760.5 | 30.54 | 775.8 | 32 | 0.0 | 69 | N | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0.50 | 12.7 | Cloudy | |
| Lynchburg, Virginia | 29.79 | 756.7 | 30.52 | 785.2 | 36 | 2.2 | 61 | NE | 4 | 1.8 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Madison, Wisconsin | 29.49 | 749.0 | 30.60 | 777.2 | 11 | —11.7 | 80 | S | 4 | 1.8 | ..... | 0 | Fog | ..... | S | 0 | 0 | Fair | |
| Marquette, Michigan | 29.67 | 753.6 | 30.42 | 772.6 | 28 | — 2.2 | 66 | SW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Memphis, Tennessee | 30.24 | 768.1 | 30.58 | 776.7 | 35 | 1.7 | 80 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Milwaukee, Wisconsin | 29.80 | 756.9 | 30.62 | 777.7 | 15 | — 9.4 | 83 | N | 6 | 2.7 | ..... | 1c | 1s | Calm | Calm | 0 | 0 | Clear | |
| Mobile, Alabama | 30.38 | 771.6 | 30.42 | 772.6 | 55 | 12.8 | 93 | S | 6 | 2.7 | ..... | 1ck | 1s;sm' | W | Calm | 0 | 0 | Fair | |
| Montgomery, Alabama | 30.17 | 766.3 | 30.41 | 772.4 | 53 | 11.7 | 79 | NW | 8 | 3.6 | ..... | 10k | Sm'e | NW | Calm | 0 | 0 | Cloudy | |
| Morgantown, West Virginia | 29.35 | 745.5 | 30.46 | 773.7 | 37 | 2.8 | 63 | E | 10 | 4.5 | ..... | ..... | 10ks | ..... | Calm | 0.98 | 24.9 | Cloudy | |
| Mt. Washington, N. H. | 23.86 | 606.0 | 30.22 | 767.6 | 6 | —14.4 | 76 | NW | 60 | 26.8 | ..... | 0 | 2s | ..... | NW | 0 | 0 | Clear | |
| Nashville, Tennessee | 29.98 | 761.5 | 30.55 | 776.0 | 36 | 2.2 | 61 | NW | 3 | 1.3 | ..... | ..... | 10s;sm' | ..... | NW | 0 65 | 1.3 | Cloudy | |
| New Haven, Connecticut | 30.47 | 773.9 | 30.60 | 777.2 | 30 | — 1.1 | 57 | NE | 7 | 3.1 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| New London, Connecticut | 30.56 | 776.2 | 30.61 | 777.5 | 33 | 0.6 | 84 | N | 2 | 0.9 | ..... | 2ck | Haze | W | Calm | 0 | 0 | Fair | |
| New Orleans, Louisiana | 30.35 | 770.9 | 30.42 | 772.2 | 58 | 14.4 | 88 | NW | 4 | 1.8 | ..... | 0 | 2s | ..... | N | 0 | 0 | Fair | |
| Newport, Rhode Island | 30.54 | 775.7 | 30.60 | 777.2 | 32 | 0 0 | 59 | N | 8 | 3.6 | ..... | 5c | 2s | S | Calm | 0 | 0 | Fair | |
| New York, New York | 30.41 | 772.4 | 30.60 | 777.2 | 32 | 0.0 | 79 | NE | 8 | 3.6 | ..... | Haze | 5s; sm | Calm | Calm | 0 | 0 | Fair | |
| Norfolk, Virginia | 30.37 | 771.4 | 30.44 | 773.2 | 39 | 3.9 | 91 | NE | 13 | 5.8 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light rain | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.03 | 686.6 | 29.71 | 754.6 | 26 | — 3.3 | 75 | SE | 28 | 12.5 | ..... | 10c | 0 | W | ..... | 0 | 0 | Cloudy..... | |
| Olympia, Washington Ter. | 29.74 | 755.4 | 29.78 | 756.4 | 32.0 | 0.0 | 100 | SW | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0.20 | 5.1 | Dense fog.... | |
| Omaha, Nebraska | 29.11 | 739.4 | 30.28 | 769.1 | 27 | — 2.8 | 82 | SE | 21 | 9.4 | ..... | ..... | 10s | ..... | SE | Inap | Inap. | Cloudy..... | |
| Oswego, New York | 30.32 | 770.1 | 30.67 | 779.0 | 21 | — 6.1 | 70 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Pembina, Dakota | 28.99 | 736.3 | 29.86 | 758.4 | 24 | — 4.4 | 87 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy ..... | |
| Philadelphia, Pa | 30.52 | 775.2 | 30.58 | 776.7 | 32 | 0.0 | 69 | NE | 4 | 1.8 | ..... | 0 | sks;sme | ..... | Calm | 0.03 | 0.8 | Smoky..... | |
| Phœnix, Arizona | 28.87 | 733 3 | 30.68 | 779.3 | 59 | 15.0 | 54 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Pike's Peak, Colorado | 17.64 | 448.0 | 29.85 | 758.2 | 15 | — 9.4 | 100 | SW | 24 | 10.7 | ..... | ..... | 10n | ..... | Calm | 0.06 | 1.5 | Light snow. | |
| Ploche, Nevada | 24.04 | 610.6 | 29.81 | 757.2 | 36 | 2.2 | 39 | N | 3 | 1.3 | ..... | 0 | 2s | ..... | NW | 0 | 0 | Fair..... | |
| Pittsburg, Pennsylvania | 29.65 | 753.1 | 30.52 | 775.2 | 30 | — 1.1 | 78 | E | 9 | 4.0 | ..... | 0 | Sm'e | ..... | E | 0.44 | 11.2 | Clear..... | |
| Port Huron, Michigan | 29.88 | 758.9 | 30.62 | 777.7 | 20 | — 6.7 | 85 | NE | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Portland, Maine | 30.55 | 776.0 | 30.60 | 777.2 | 28 | — 2.2 | 60 | W | 8 | 3.6 | ..... | 1k | 0 | Calm | ..... | 0 | 0 | Clear..... | |
| Portland, Oregon | 29.81 | 757.2 | 29.91 | 759.7 | 38.5 | 3.6 | 68 | S | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0.24 | 6.1 | Cloudy ..... | |
| Prescott, Arizona | 24.79 | 629.6 | 30.15 | 765.8 | 35 | 1.7 | 53 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Pilot Point, Texas | 29.19 | 741.4 | 30.02 | 762.5 | 50 | 10.0 | 86 | SE | 10 | 4.5 | ..... | 2k | 0 | S | ..... | 0 | 0 | Fair ..... | |
| Punta Rassa, Florida | 30.37 | 771.4 | 30.39 | 771.9 | 64 | 17.8 | 63 | NE | 6 | 2.7 | ..... | 10k | 0 | NE | ..... | 0 | 0 | Cloudy..... | |
| Red Bluff, California | 29.83 | 757.7 | 30.20 | 767.1 | 45 | 7.2 | 61 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Rio Grande City, Texas | 30.21 | 767.3 | 30.42 | 772.6 | 62 | 16.7 | 88 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Rochester, New York | 29.95 | 760.7 | 30.63 | 778.0 | 17 | — 8.3 | 67 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Roseburg, Oregon | 29.41 | 747.0 | 30.00 | 762.0 | 36.0 | 2.2 | 90 | SW | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.20 | 5.1 | Light rain.. | |
| Sacramento, California | 30.19 | 766.8 | 30.28 | 769.1 | 41 | 5.0 | 82 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.09 | 2.3 | Clear. ..... | |
| St. Louis, Missouri | 29.96 | 761.0 | 30.58 | 776.7 | 31 | — 0.6 | 79 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy..... | |
| St. Marks, Florida | 30.37 | 771.4 | 30.38 | 771.6 | 60 | 10.0 | 100 | NW | 4 | 1.8 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear. ..... | |
| St. Paul, Minnesota | 29.40 | 746 7 | 30.20 | 769.4 | 23 | — 5.0 | 73 | SE | 18 | 8.0 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair ..... | |
| Salt Lake City, Utah | 25.67 | 652.0 | 30.00 | 762.0 | 37 | 2.8 | 63 | W | 27 | 12.1 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light snow.. | |
| San Antonio, Texas | 29.78 | 755.1 | 30.33 | 770.4 | 51 | 10.6 | 86 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| San Diego, California | 30.12 | 765.0 | 30.19 | 766.8 | 52 | 11.1 | 90 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Sandusky, Ohio | 29.86 | 758.4 | 30.59 | 777.0 | 26 | — 3.3 | 75 | NE | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear..... | |
| Sandy Hook, New Jersey | 30.54 | 775.7 | 30.57 | 776.5 | 31 | — 0.6 | 58 | NE | 11 | 4.9 | ..... | 8k | Haze | NE | Calm | 0 | 0 | Hazy. ..... | |
| San Francisco, California | 30.21 | 767.3 | 30.28 | 769.1 | 47.7 | 8.7 | 70 | W | 5 | 2.2 | ..... | Haze | 0 | Calm | ..... | 0.07 | 1.8 | Clear. ..... | |
| Santa Fé, New Mexico | 23.37 | 593.6 | 29.91 | 759.7 | 46 | 7.8 | 62 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy..... | |
| Savannah, Georgia | 30.25 | 768.3 | 30.34 | 770.6 | 56 | 13.3 | 75 | SW | 8 | 3.6 | ..... | 1cs | Sm'e | Calm | Calm | 0 | 0 | Smoky..... | |
| Shreveport, Louisiana | 30.26 | 768.6 | 30.48 | 774.2 | 43 | 6.1 | 75 | Calm | 0 | 0 | ..... | 0 | 2ks | ..... | SE | 0 | 0 | Fair..... | |
| Silver City, New Mexico | 24.80 | 617.2 | 30.49 | 774.4 | 46 | 7.8 | 69 | NE | 1 | 0.4 | ..... | 0 | 5s | ..... | Calm | Inap. | Inap. | Fair..... | |
| Smithville, North Carolina | 30.28 | 769.1 | 30.32 | 770.1 | 52 | 11.1 | 86 | N | 5 | 2.2 | ..... | 10cs | 0 | SW | ..... | 0 | 0 | Cloudy..... | |
| Springfield, Massachusetts | 30.48 | 774.2 | 30.63 | 778.0 | 26 | — 3.3 | 63 | N | 3 | 1.3 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair... ..... | |
| Stockton, Texas | 27.26 | 692.4 | 30.26 | 768.6 | 45 | 7.2 | 84 | SW | 4 | 1.8 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy ..... | |
| Thatcher's Island, Mass | 30.60 | 777.2 | 30.66 | 778.8 | 32 | 0.0 | 40 | NE | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Toledo, Ohio, | 29.85 | 758.2 | 30.00 | 777.2 | 21 | — 6.1 | 86 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear..... | |
| Tucson, Arizona | 27.59 | 700.8 | 30.14 | 765.5 | 58 | 14.4 | 58 | N | 1 | 0.4 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair... ..... | |
| Umatilla, Oregon | 29.08 | 753.9 | 30.20 | 767.1 | 31.0 | — 0.6 | 79 | E | 8 | 3.6 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy ..... | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 24 | — 4.4 | 74 | NW | ..... | ..... | 4 | ..... | 10s | ..... | N | 0 | 0 | Cloudy..... | |
| Uvalde, Texas | 29.50 | 749.3 | 30.32 | 770.1 | 50 | 13.3 | 75 | E | 3 | 1.3 | ..... | ..... | 10s | ..... | E | 0.01 | 0.3 | Cloudy..... | |
| Vicksburg, Mississippi | 30.27 | 768.8 | 30.55 | 776.0 | 45 | 7.2 | 70 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Virginia City, Montana | 24.09 | 611.9 | 29.57 | 751.1 | 28 | — 2.2 | 88 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.10 | 2.5 | Cloudy ..... | |
| Visalia, California | 29.86 | 758.4 | 30.24 | 768.1 | 42.5 | 5.8 | 67 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Washington, D. C. | 30.45 | 773.4 | 30.58 | 776.7 | 31 | — 0.6 | 89 | NE | 7 | 3.1 | ..... | ..... | 10n | ..... | Calm | 0.42 | 10.7 | Light snow.. | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 45 | 7.2 | 76 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Wilmington, N. Carolina | 30.18 | 766.6 | 30.26 | 768.6 | 51 | 10.6 | 86 | SE | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Winnemucca, Nevada | 25.74 | 653.8 | 30.10 | 764.5 | 28 | — 2.2 | 66 | SW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Wood's Holl, Mass | 30.64 | 778.7 | 30.68 | 778.7 | 32 | 0.0 | 60 | NE | 10 | 4.5 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Cloudy..... | |
| Yankton, Dakota | 28.88 | 733.5 | 30.24 | 768.1 | 26 | — 3.3 | 75 | SE | 14 | 6.3 | ..... | 5c | Haze | Calm | Calm | 0 | 0 | Fair..... | |
| Yuma, Arizona | 29.87 | 758.7 | 30.03 | 762.8 | 57 | 13.9 | 63 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.78 | 731.0 | 30.30 | 769.6 | 26 | — 3.3 | 88 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.20 | 767.1 | 30.25 | 768.3 | 72 | 22.2 | 63 | E | 2.4 | 1.1 | ..... | 8k | 0 | E | ..... | 0 | 0 | Cloudy..... | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. mes Gall. |
| Medellin, Colombia, S. A | 25.23 | 740.8 | ..... | ..... | 68.0 | 20.0 | 71 | Calm | 0 | 0 | ..... | 8cs;k | 2ks | ..... | ..... | 0 | 0 | ..... | Thomas Herran. |
| Navassa, W. I | 29.97 | 761.2 | 30.05 | 763.3 | 77 | 25.0 | ..... | NE | 23 | 10.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Partly cl'dy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.01 | 762.2 | 30.01 | 762.2 | 78 | 25.6 | 86 | E | ..... | ..... | 3 | 5k | 6ks | E | ..... | 0 | 0 | ½ clouded... | C. J. Hering |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,870 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,490 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,060 (?) ft., or 624.9(?) m.; Winnemucca, 4,385.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.555 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.64 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

## UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NavyYard, Mare Island, Cal. | 30.27 | 768.8 | 51 | 10.6 | 52 | 11.1 | 73 | W | 28 | 12.5 | ..... | ..... | 8 | ..... | W | 0 | 0 | ..... | ..... | Fair..... | |
| Navy Yard, Pensacola, Fla. | 30.50 | 774.7 | 56 | 13.3 | 56 | 13.3 | 87 | NW | 1 | 0.4 | ..... | ..... | Sm'e | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| NavyYard, Portsmouth, N.H | 30.54 | 775.7 | 56 | 13.3 | 25 | — 3.9 | 87 | NNE | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan.....* | 30.23‡ | 767.8‡ | ..... | ..... | 44.4 | 6.9 | 96 | NE | ..... | ..... | 3 | ..... | 10n | ..... | NNE | 0.61 | 15.5 | ..... | ..... | Light rain.. | |
| Adams. Panama ..... | 29.99 | 761.7 | 78 | 25.6 | 76 | 24.4 | 95 | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Fair..... | |
| Alaska, N. 23° 30', W. 111° 40'..... | 30.20 | 767.1 | 70 | 21.1 | 62 | 16.7 | 83 | NW | ..... | ..... | 5 | ..... | 2 | ..... | SE | ..... | ..... | Long | NW | D. clouds..... | |
| Alliance, Villafranca, France..... | 29.92‡ | 760.0‡ | ..... | ..... | 59 | 15.0 | 54 | SE | ..... | ..... | 0-1 | ..... | 3 | ..... | S;E | ..... | ..... | ..... | .... ... | Clear. ..... | |
| Ashuelot, Hong-Kong, China. ..... | 29.94‡ | 760.5‡ | ..... | ..... | 56 | 13.3 | 81 | NE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Canonicus, New Orleans, La..... | 30.40 | 772.1 | 45 | 7.2 | 58 | 14.4 | 94 | N | ..... | ..... | 2 | ..... | 10 | ..... | N | ..... | ..... | ..... | ..... | Foggy ..... | |
| Colorado, New York, N. Y..... | 3 .55 | 776.0 | 31 | — 0.6 | 31 | — 0.6 | 100 | NNE | 7 | 3.1 | ..... | ..... | 8 | ..... | E | 0 | 0 | ..... | ..... | Light haze.. | |
| Constitution, Lisbon, Portugal..... | 29.99‡ | 761.7‡ | ..... | ..... | 59 | 15.0 | 82 | NNE | ..... | ..... | 2 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear..... | |
| Despatch, Constantinople, Turkey | 29.90‡ | 759.4‡ | ..... | ..... | 48 | 8.9 | 70 | NE | ..... | ..... | 2 | ..... | 5 | ..... | NE | ..... | ..... | Smooth | ..... | Fair..... | |
| Franklin, Norfolk, Va..... | 30.53 | 775.4 | 63 | 17.2 | 40 | 4.4 | 82 | NE | 12 | 5.4 | ..... | ..... | 10 | ..... | E | 0.3 | 8. | ..... | ..... | Raining ..... | |
| Gettysburg, Genoa, Italy ..... | 29.87‡ | 758.7‡ | ..... | ..... | 56 | 13.3 | 87 | NNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds.... | |
| Hartford, Montevideo, Uruguay... | 30.02 | 762.5 | 74 | 23.3 | 73 | 22.8 | 59 | SSE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0.03 | 0.8 | ..... | ..... | Clear..... | |
| Lackawana, Panama.....* | 29.74‡ | 755.4‡ | ..... | ..... | 74 | 23.3 | 95 | WNW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Michigan, Erie, Pa.....† | 30.26 | 768.6 | ..... | ..... | 21.5 | — 5.8 | 93 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monocacy. Sheipoo, China... ....* | 30.23‡ | 767.8‡ | ..... | ..... | 42 | 5.6 | 83 | NNW | ..... | ..... | 3 | ..... | 10 | ..... | NNW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongehela, Yokohama, Japan ....* | 30.16‡ | 766.1‡ | ..... | ..... | 46 | 7.8 | 62 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Heavy | Heavy | ..... | ..... | Raining..... | |
| New Hampshire, Port Royal, S. C..... | 30.35 | 770.9 | 53 | 11.7 | 53 | 11.7 | 93 | WSW | 2 | 0.9 | ..... | ..... | 8 | ..... | S | 0 | 0 | ..... | ..... | Cloudy..... | |
| Onward, Callao, Peru.....† | 30.05 | 763.3 | ..... | ..... | 69 | 20.6 | 90 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Foggy ..... | |
| Palos, Tientsin, China..... | 30.53 | 775.4 | 69 | 20.6 | 29 | — 1.7 | 66 | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 31 | — 0.6 | 79 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Pensacola, S. 37° 48', W. 75° 50' ..... | 29.99‡ | 761.7‡ | ..... | ..... | 68 | 20.0 | 90 | NW | 4 | 1.8 | ..... | ..... | 5 | ..... | NW | 0 | 0 | Smooth | S | Fair..... | |
| Powhatan, Key West, Fla..... | 30.29‡ | 769.4‡ | ..... | ..... | 68 | 20.0 | 74 | NE | ..... | ..... | 4 | ..... | 10 | ..... | NE | 0 | 0 | Mod'ate | NE | Cloudy..... | |
| Quinnebaug, Villafranca, France..... | 29.94‡ | 760.5‡ | ..... | ..... | 58 | 14.4 | 58 | S | ..... | ..... | 2 | ..... | 2 | ..... | SSE | ..... | ..... | Smooth | ..... | Clear..... | |
| Ranger. Kobe, Japan.....* | 30.18‡ | 766.1‡ | ..... | ..... | 55 | 12.8 | 80 | NNW | ..... | ..... | 1-2 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Showery..... | |
| Richmond, Naples, Italy..... | 29.89‡ | 759.2‡ | ..... | ..... | 55 | 12.8 | 50 | ESE | ..... | ..... | 1 | ..... | 2 | ..... | SE | 0 | 0 | Smooth | ..... | Fair..... | |
| Rio Bravo, Brownsville, Texas..... | 30.30 | 769.6 | 66 | 18.9 | 65 | 18.3 | 94 | N | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md... ..... | 30.55‡ | 776.7‡ | ..... | ..... | 30 | — 1.1 | ..... | NE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0.5 | 13. | .... ... | ..... | Snowing..... | |
| Saratoga, Washington, D. C..... | 30.65 | 778.5 | ..... | ..... | 32 | 0.0 | 100 | NE | ..... | ..... | 2 | ..... | 10 | ..... | Calm | Heavy | Heavy | ..... | ..... | Snowing..... | |
| St. Louis, League Island, Pa ..... | 30.40 | 772.1 | 48 | 8.9 | 32 | 0.0 | ..... | Calm | 0 | 0 | ..... | ..... | 10 | ..... | W | ..... | ..... | ..... | ..... | Cloudy..... | |
| Supply, N. 24° 16', W. 67° 15'..... | 30.17‡ | 766.3‡ | ..... | ..... | 71 | 21.7 | 78 | NNE | ..... | ..... | 6 | ..... | 2 | ..... | NE | ..... | ..... | Mod'ate | NE | Clear ..... | |
| Trenton. Villafranca, France..... .... | 29.91‡ | 759.7‡ | ..... | ..... | 62 | 16.7 | 61 | E | ..... | ..... | 0-1 | ..... | 5 | ..... | S;E | 0 | 0 | Mod'ate | S | Fair..... | |
| Tuscarora, Acapulco, Mexico..... | 29.99‡ | 761.7‡ | ..... | ..... | 78 | 25.6 | 65 | E | ..... | ..... | 1 | ..... | 2 | ..... | Calm | 0 | 0 | Smooth | ..... | Clear. ..... | |
| Wabash, Boston, Mass..... | 30.62‡ | 777.7‡ | ..... | ..... | 25 | — 3.9 | 87 | N | 6 | 2.7 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Wyoming, Smyrna, Turkey..... | 29.83‡ | 757.7‡ | ..... | ..... | 53 | 11.7 | 86 | WNW | ..... | ..... | 1-2 | ..... | 10 | ..... | ..... | ..... | ..... | Smooth | NW | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | |
| S. S. Colima, N. 9° 58′, W. 84° 46′ † | | 29.96‡ | 761.0‡ | 81 | 27.2 | 78 | N | | | 3 | | 2 | | N | 0 | Small | Confused | D. clouds | Capt. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota, Capt. Morse | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | |
| S. S. Granada, La Libertad, San Salvador † | | 30.14‡ | 765.5‡ | 82 | 27.8 | 90 | E | | | 3 | | 0 | | | 0 | | | Clear. | Capt. Austin. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation. no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, Hong-Kong, China * | | 29.76‡ | 755.9‡ | 58 | 14.4 | 76 | Var. | | | 2 | | s | | E | | Smooth | E | Misty | J. A. Thompson, 2d Off't |
| S. S. Gaelic, N. 37° 30′, E. 172° 30′ † | | 29.55‡ | 750.6‡ | 50 | 10.0 | | N | | | 6 | | k | | N | | Blank | High | N | Squally | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 26° 10′, W. 34° 00′ | | 30.36‡ | 771.1‡ | 72.0 | 22.2 | 54 | E | | | 5 | | 2 | | | | Mod'ate | NNW | Fine | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | SEA-SWELL | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | CHARACTER. | DIRECTION FROM— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Lo'wr 0—10. | Upper. From— | Lower. From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 41° 17', W. 53° 34' | | 30.16‡ | 766.1‡ | 41 | 5.0 | | N | | | 7 | | 9 | | N | 0 | Mod'ate | N | Cloudy | Captain Sargent. Wm. Shackford, Chief Officer. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
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| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
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| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

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| **MARINE SERIES. (Miscellaneous.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

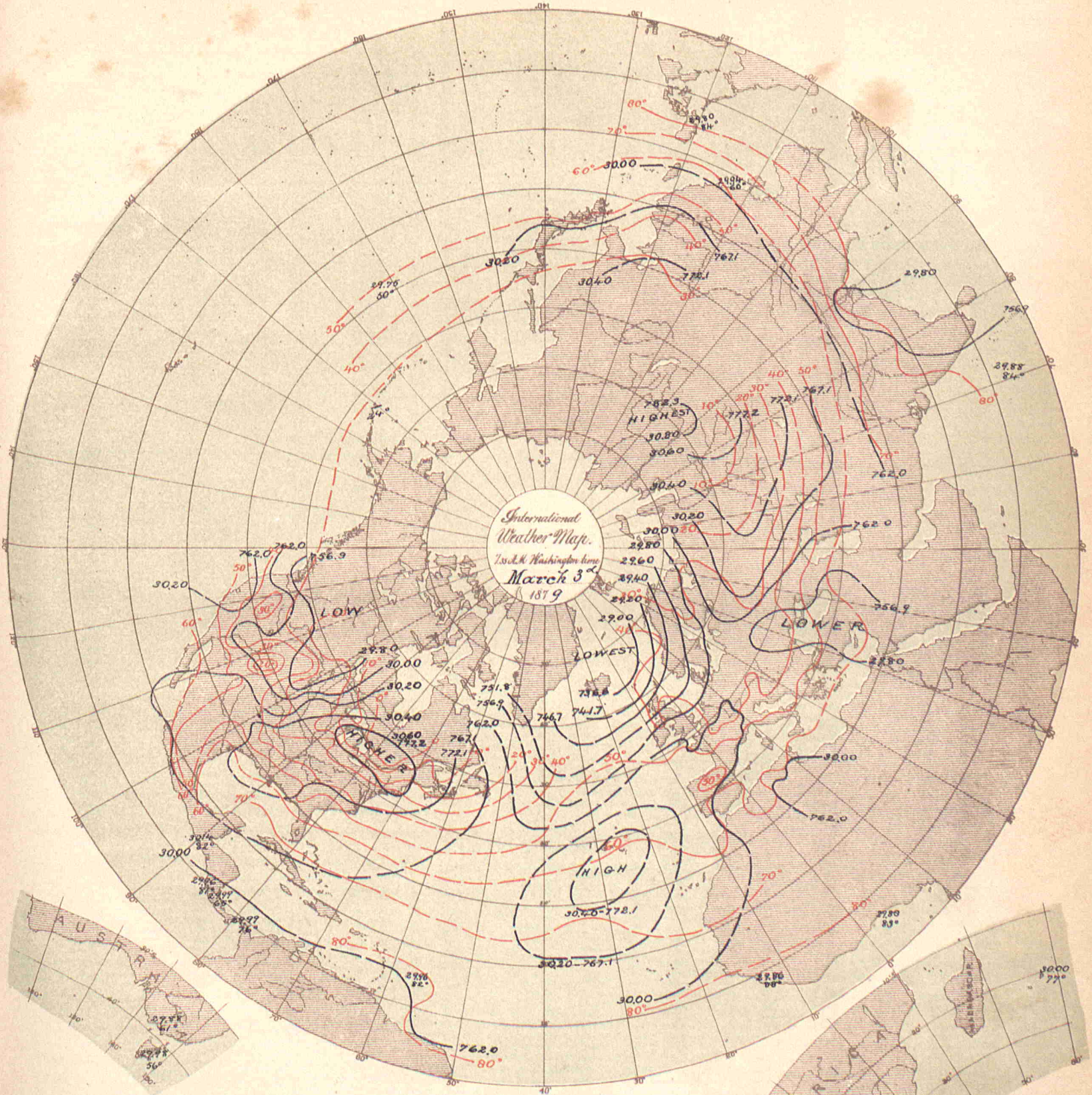
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

## OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 4, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 30.16 | 766.1 | 58.3 | 14.6 | 83 | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | |
| Nemours | ..... | ..... | 30.16 | 766.0 | 59.4 | 15.2 | 83 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.276 | 7.0 | Covered | Kesxuche. |
| Algiers | ..... | ..... | 30.09 | 764.3 | 58.6 | 14.8 | 74 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Tourillere. |
| La Calle | ..... | ..... | 29.98 | 761.5 | 63.5 | 17.5 | 73 | N | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Foufrede. |
| Tunis | ..... | ..... | 30.00 | 762.1 | 61.2 | 16.2 | 56 | NE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 30.02 | 762.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 30.04 | 763.0 | 47.3 | 18.5 | 78 | N | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Rainy | Herbin. |
| Tebessa | ..... | ..... | 30.07 | 763.7 | 57.7 | 14.3 | 33 | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Watrin. |
| Geriville | ..... | ..... | 29.94 | 760.4 | 53.1 | 11.7 | 93 | SE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Brugnlaux. |
| Laghouat | ..... | ..... | 30.06 | 763.4 | 59.7 | 15.4 | 30 | SE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Bertrand. |
| Biskra | ..... | ..... | 30.02 | 762.5 | 74.3 | 23.5 | 17 | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.36 | 746.3 | 29.94 | 760.4 | 49.1 | 9.5 | 54 | NE | ..... | ..... | 3 | 8 | ..... | ..... | ..... | Inap. | Inap. | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.24 | 742.8 | 30.05 | 763.3 | 30.9 | — 0.6 | 90 | SSE | ..... | ..... | 1 | 0 | ..... | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski |
| Eperies | 29.04 | 737.7 | 29.95 | 760.8 | 36.7 | 2.6 | 65 | N | ..... | ..... | 1 | 8s | ..... | ..... | ..... | 0.055 | 1.40 | ..... | Julius Mikolik. |
| Gratz | 28.72 | 729.6 | 30.00 | 762.1 | 42.8 | 6.0 | 43 | NW | ..... | ..... | 2 | 9 | ..... | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.43 | 722.2 | 29.91 | 759.6 | 37.6 | 3.1 | 62 | S | ..... | ..... | 1 | 8 | ..... | ..... | ..... | 0.098 | 2.50 | ..... | Prof. A. Gottschling. |
| Kremsmünster | 28.70 | 728.9 | 30.10 | 764.4 | 34.3 | 1.3 | 80 | WNW | ..... | ..... | 2 | 10 | ..... | ..... | ..... | 0.335 | 8.5 | ..... | Prof. C. Wagner. |
| Lemberg | 28.93 | 734.8 | 29.96 | 760.9 | 33.4 | 0.8 | 83 | S | ..... | ..... | 1 | 6 | ..... | ..... | ..... | 0.008 | 0.2 | ..... | Dr. T. Stanecki. |
| Pola | 29.89 | 759.3 | 30.01 | 762.2 | 49.6 | 9.8 | 56 | W | ..... | ..... | 2 | 9 | ..... | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office. |
| Szathmar | 29.49 | 749.1 | 29.97 | 761.3 | 38.8 | 3.2 | 67 | W | ..... | ..... | 1 | 6 | ..... | ..... | ..... | 0.102 | 2.6 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 29.93 | 760.3 | 30.04 | 762.9 | 46.8 | 8.2 | 79 | SW | ..... | ..... | 1 | 9 | ..... | ..... | ..... | 0 | 0 | ..... | P. Busin. |
| Vienna | 29.20 | 744.0 | 30.04 | 762.9 | 36.7 | 2.6 | 84 | NW | ..... | ..... | 2 | 10 | ..... | ..... | ..... | 0.047 | 1.2 | Rain & snow | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Royal Observatory |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. E. de Cae |
| Maeseyck | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Pierrot |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.20 | 741.7 | 29.30 | 744.2 | 49.4 | 9.7 | ..... | SW | 35 | 15.6 | ..... | ..... | 3 | ..... | ..... | 0.310 | 7.87 | Blue sky | W. Boswell. |
| Ardrossan | 29.50 | 749.3 | 29.52 | 749.8 | 48 | 8.9 | ..... | SSW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.61 | 752.1 | 51.0 | 10.6 | ..... | SSW | 34 | 15.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Squally | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.80 | 756.9 | 50.6 | 10.3 | ..... | SW | 40 | 17.9 | ..... | ..... | 3? | ..... | ..... | ..... | ..... | Overcast | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.86 | 758.4 | 48.2 | 9.0 | ..... | S | 60 | 26.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Squally | Thomas Mackereth. |
| Bradford, Yorkshire | 29.44 | 747.8 | 29.83 | 757.7 | 46.9 | 8.3 | ..... | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.90 | 759.4 | 29.93 | 760.2 | 83 | 28 3 | ..... | NE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Surgener, A. H. C. |
| Cambridge, Observatory | ..... | ..... | 30.03 | 762.8 | 47.0 | 8.8 | ..... | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | H. Todd. |
| Cardington | ..... | ..... | 29.99 | 761.7 | 48.0 | 8.9 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.99 | 761.7 | 30.12 | 765.0 | 46.9 | 8.3 | ..... | SW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Corpl. Daly, R. E. |
| Dartmoor | 28.02 | 711.7 | 29.57 | 751.1 | 42.0 | 5.6 | ..... | W | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy | Alexander Watt. |
| Donaghadee | 29.59 | 751.6 | 29.63 | 752.6 | 51 | 10.6 | ..... | SW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 30.11 | 764.8 | 30.14 | 765.5 | 44 | 6.7 | ..... | WSW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | ⅘ clouded | J. Costello. |
| Falmouth, Observatory | 29.92 | 760.0 | 30.15 | 765.8 | 49.4 | 9.7 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.47 | 697.7 | 29.79 | 756 7 | 82.0 | 27.8 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.63 | 752.6 | 29.86 | 758.4 | 89 | 31.7 | ..... | N? | ..... | ..... | 0? | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | ..... |
| Galway, Queen's College | ..... | ..... | 29.71 | 754.6 | 50 | 10.0 | ..... | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.06 | 763.5 | 30.11 | 764.8 | 61.2 | 16.2 | ..... | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.28 | 743.7 | 29.49 | 749.0 | 48.0 | 8.9 | ..... | WSW | ..... | ..... | 8 | ..... | 10 | ..... | ..... | ..... | ..... | Rain-squalls | D. G. Maclean. |
| Great Yarmouth | 30.01 | 762 2 | 30.02 | 762.5 | 47 | 8.3 | ..... | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Misty | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.93 | 760.2 | 30.10 | 764.5 | 47.5 | 8.6 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff, for G. B. Airy |
| Guernsey | 30.05 | 763.3 | 30.27 | 768.8 | 47 | 8.3 | ..... | SSW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F.R.S |
| Helston | 30.09 | 764.3 | 30.21 | 767.3 | 49 | 9.4 | ..... | SW | ..... | ..... | 4 | ..... | 3k | ..... | ..... | 0.3 | 8. | Fine | M. P. Moyle. |
| Holyhead | 29.80 | 756.9 | 29.85 | 758.2 | 47 | 8.3 | ..... | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | John Tilston. |
| Jersey | 29.95 | 760.7 | 30.25 | 768.3 | 47.2 | 8.4 | ..... | WSW | ..... | ..... | 3 | ..... | 5c | ..... | ..... | ..... | ..... | D. clouds | J. Fisher. |
| Kew, Observatory | 30.07 | 763 8 | 30.10 | 764.5 | 46.9 | 8.3 | ..... | SW | 22 | 9.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | The Meteorological Of. |
| Leicester, Museum | 29.72 | 754.9 | 29.97 | 761.2 | 47.0 | 8.3 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Wm. J. Harrison, F.G.S |
| Malta, (Mediterranean) | 29.87 | 758.7 | 29.95 | 760.7 | 59 | 15.0 | ..... | W | ..... | ..... | 1 | ..... | 4k | ..... | ..... | ..... | ..... | D. clouds | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.07 | 738.4 | 29.16 | 740.7 | 52 | 11.1 | ..... | WSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.26 | 768.6 | 71.5 | 21.9 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.75 | 755.6 | 29.94 | 760.5 | 48.6 | 9.2 | ..... | SSW | ..... | ..... | 4 | ..... | 10k;d | ..... | SW | 0 | 0 | Overcast | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.44 | 747.8 | 29.97 | 761.2 | 45.0 | 7.2 | ..... | S | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.06 | 763.5 | 47 | 8.3 | ..... | SW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | H. E. Bellamy. |
| Plymouth | 30.04 | 763.0 | 30.12 | 765.0 | 47.8 | 8.8 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Merrifield. |
| Roche's Point | 29.93 | 760.2 | 29.78? | 756.4? | 49 | 9.4 | ..... | WSW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | W. Kennedy. |
| Saint Ann's Head | 29.86 | 758.4 | 30.03 | 762.5 | 47 | 8.3 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 29.90 | 736 6 | 46.8 | 8.2 | ..... | SW | 38 | 17.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Dr. Hoskins. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.82 | 757.4 | 49.6 | 9.8 | ..... | ENE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | Blank | Blank | D. clouds | W. H. Lyne. |
| Sheffield | 29.60 | 751.8 | 29.88 | 758.9 | 47.1 | 8.4 | ..... | SW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | 0.05 | 1.3 | Overcast | W. F. Cooper. |
| Silloth Rectory | 29.64 | 752.8 | 29.66 | 753.4 | 46.3 | 7.9 | 81 | S | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0.210 | 5.33 | D. clouds | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.43 | 747.5 | 29.83 | 757.7 | 46.8 | 8.2 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. S. J. Perry. |
| Stratfield Turgiss | 29.94 | 760.6 | 30.16 | 766.1 | 47.0 | 8.3 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | C.H.Griffith, F.M.S. |
| Thurso | 28.99 | 736.3 | 29.05 | 737.9 | 50 | 10.0 | ..... | WSW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | John Trotter. |
| Truro, Royal Institution | 30.06 | 763.5 | 30.13 | 765.3 | 52 | 11.1 | ..... | SW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy | W. Newcombe. |
| Valencia, Observatory | 29.82 | 757.4 | 29.85 | 758.2 | 51.7 | 10.9 | ..... | SW | 44 | 19.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.98 | 761.5 | 30.02 | 762.5 | 74 | 23.3 | 57 | S | 23 | 10.3 | ..... | 1 | 2 | ..... | ..... | 0 | 0 | Fine | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.91 | 759.7 | 58.0 | 15.0 | 78 | NE | ..... | ..... | 3 | ..... | 4ks | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.50 | 749.3 | 50.5 | 10.3 | ..... | SW | ..... | ..... | 9 | ..... | 10s | ..... | ..... | 0.27 | 6.9 | Overcast | Andrew Gibb. |
| Mauritius, Observatory | 29.82 | 757.4 | 30.01 | 762.2 | 80.4 | 26.9 | 62 | SE | 11.0 | 4.9 | ..... | 4 | 1 | NW | ..... | 0.09 | 2.3 | Fine | C. Meldrum. |
| Melbourne, Observatory | 29.64 | 752.8 | 29.74 | 755.4 | 71.9 | 22.2 | 66 | ESE | 2 | 0.9 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Dull | R. L. J. Ellery. |
| Monach L'i-house, (Hebrides) | ..... | ..... | 29.08 | 738.6 | 50 | 10.0 | ..... | SW | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0.2 | 5. | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.10 | 739.1 | 39 | 3.9 | ..... | S | ..... | ..... | 8 | 3 | 5 | W | ..... | ..... | ..... | Sleeting | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; Freetown reduced to freezing but not to sea-level. Amount of cloudiness for Holyhead by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day,) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day,) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 35° 54', E. 14° 30' | ..... | ..... | 29.94‡ | 760.5‡ | 61 | 16.1 | ..... | NNW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Brig Alliance, N 15° 08', W. 42° 49' | ..... | ..... | 30.04‡ | 763.0‡ | 78 | 25.6 | ..... | E | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle Isle, N. 22° 45', W. 86° 05' | ..... | ..... | 30.23 | 767.8 | 75 | 23.9 | ..... | ENE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | 6 | NE | Showery | Capt. A. J. Brown. |
| Ship British Commodore, N. 45° 25', W. 33° 40' | ..... | ..... | 29.77 | 756.1 | 48 | 8.9 | ..... | NNW | ..... | ..... | 6 | ..... | 4 | ..... | ..... | 6 | sw;nw | Squally | Capt. J. W. Thorne. |
| —— City of Agra, S. 2° 19', W. 28° 12' | ..... | ..... | 29.96‡ | 761.0‡ | 82.5 | 28.1 | ..... | SE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Capt. Thos. Young. |
| Barque Commewyne, N. 16° 11', W. 56° 40' | ..... | ..... | 30.05‡ | 763.3‡ | 82 | 26.7 | ..... | ENE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | Capt. A. Buchan. |
| —— Denbighshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Murdoch. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole, N. 40° 19' W. 17° 25' | ..... | ..... | 30.39‡ | 771.9‡ | 55.7 | 13.2 | ..... | NNW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven, N. 7° 30', E. 73° 18' | ..... | ..... | 29.78‡ | 756.4‡ | 82.5 | 28.1 | ..... | NNW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Capt. C. W. Pearson. |
| S. S. Wyberton, N. 9° 11', E. 68° 48' | ..... | ..... | 29.90‡ | 759.4‡ | 82 | 27.8 | ..... | N | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | | | | | | | | | | | | | | | | | | | Mr. Ansart. |
| San José | 26.26 | 667.0 | 29.98 | 761.5 | 67.6 | 19.8 | 81 | SE | | | 4 | | 6ks | | E | 0 | 0 | | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.93 | 760.3 | 29.98 | 761.5 | 32.4 | 0.2 | 96 | NW | | | 2 | | 10 | | | | | Foggy |
| Fanöe | 29.95 | 760.8 | 29.97 | 761.3 | 35.6 | 2.0 | 93 | W | | | 4 | | 1 | | | | | |
| Godthaab, (Greenland) | 29.07 | 738.3 | 29.11 | 739.4 | 4.5 | —15.3 | 81 | SE | | | 2 | | 7 | | | | | |
| Stykkisholm, (Iceland) | | | | | | | | | | | | | | | | | | |
| Thorshavn, (Faröe) | 28.60 | 726.4 | 28.63 | 727.3 | 34.9 | 1.6 | 91 | NE | | | 5 | | 5 | | | | | Raining |
| Vestervig | 29.69 | 754.2 | 29.86 | 758.5 | 36.0 | 2.2 | 93 | S | | | 6 | | 6 | | | | | Raining |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.73 | 755.2 | 30.28 | 769.2 | 41.7 | 5.4 | 94 | SW | | | 1 | | 0 | | | 0 | 0 | Clear | Collignon, Director. |
| Amiens, Normal School | 30.03 | 762.8 | 30.14 | 765.6 | 48.9 | 9.4 | 86 | SW | | | 1 | | 10 | | | 0 | 0 | Covered | Bonvallet, Director. |
| Avignon, Normal School | 30.00 | 762.0 | 30.08 | 764.0 | 52.9 | 11.6 | 43 | N | | | 8 | | 5 | | | 0 | 0 | Cloudy | M. Giraud, Director. |
| Bar-sur-Seine | 29.69 | 754.0 | 30.26 | 768.7 | 39.7 | 4.3 | 90 | NW | | | 1 | | 10 | | | 0 | 0 | Covered | C. Saillard, Director. |
| Beauvais, Normal School | 29.97 | 761.3 | 30.27 | 768.8 | 45.1 | 7.3 | 77 | WSW | | | 1 | | 5 | | W | 0 | 0 | Cloudy | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.34 | 745.2 | 30.27 | 768.9 | 36.7 | 2.6 | 79 | S | | | 2 | | 2 | | SW | 0.008 | 0.2 | Slightly cl'dy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.36 | 745.8 | 30.27 | 768.9 | 41.5 | 5.3 | 91 | N | | | 1 | | 10ns | W | W | 0 | 0 | Covered | M. Marlot, Director. |
| Bourges, Normal School | 29.69 | 754.1 | 30.26 | 768.5 | 42.1 | 5.6 | 97 | W | | | 4 | | 10 | W | W | 0.004 | 0.1 | Foggy | A. Waquet, Director. |
| Brest, Naval Observatory | 29.91 | 759.6 | 30.15 | 765.8 | 49.6 | 9.8 | 79 | WSW | | | 2 | | 10 | | WSW | 0.010 | 0.25 | Misty | M.de Kermarec, Director |
| Carcassonne, Normal School | 29.82 | 757.5 | 30.25 | 768.3 | 59.0 | 10 | 62 | W | | | 1 | | 5 | W | W | 0 | 0 | Cloudy | September, Director. |
| Caen, Normal School | 30.17 | 766.2 | 30.24 | 768.1 | 48.6 | 9.2 | 66 | W | | | 2 | | 5 | | W | 0.047 | 1.2 | Cloudy | M. Lair, Director. |
| Chartres, Normal School | 29.64 | 752.9 | 30.23 | 767.7 | 41.7 | 5.4 | 81 | SW | | | 1 | | 9 | | | 0 | 0 | | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.94 | 760.4 | 30.27 | 768.8 | 44.4 | 6.9 | 71 | S | | | 2 | | 5 | W | W | 0 | 0 | Cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.83 | 732.2 | 30.21 | 767.4 | 46.0 | 7.8 | 61 | N | | | 1 | | 10 | | NW | 0 | 0 | | Alluard, Director. |
| Commercy, Normal School | 29.34 | 745.2 | 30.22 | 767.6 | 41.0 | 5 | 74 | WNW | | | 2 | | 2kn | | WNW | 0 | 0 | Slightly cl'dy | Dr. Coulet, Director. |
| Commune de Gréasque* | 28.86 | 733.1 | 30.00 | 762.1 | 49.5 | 9.7 | 48 | NW | | | 4 | | 5 | | NW | 0 | 0 | ¾ covered | M. Kina, Director. |
| Grenoble, Normal School | 29.38 | 746.2 | 30.17 | 766.2 | 44.6 | 7 | 83 | ENE | | | 2 | | 5ck | N | | 0 | 0 | Cloudy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 30.02 | 762.6 | 30.24 | 768.1 | 48.4 | 9.1 | 84 | N | | | 1 | | 0 | | | 0 | 0 | Clear | Mouillot, Director. |
| Le Mans, Normal School | 29.98 | 761.5 | 30.30 | 769.7 | 40.1 | 4.5 | 100 | S | | | 2 | | 10 | | | 0 | 0 | Covered | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.31 | 744.4 | 30.26 | 768.7 | 38.7 | 3.7 | 93 | N | | | 1 | | 10 | | | 0 | 0 | Covered | Baudry, Director. |
| Lorient, Naval Observatory | 30.18 | 766.5 | 30.28 | 769.0 | 52.2 | 11.2 | 77 | SW | | | 3 | | | | WSW | 0 | 0 | | Lt T. Carré, Director. |
| Mâcon, Normal School | | | | | | | | | | | | | | | | | | | M. Galsin, Director |
| Mirecourt, Normal School | 29.18 | 741.2 | 30.29 | 769.3 | 38.8 | 3.8 | 90 | N | | | 1 | | n | | S | 0 | 0 | | M. Barbier, Director. |
| Nismes, Normal School | 29.88 | 758.9 | 30.08 | 764.1 | 57.2 | 14 | 29 | N | | | 4 | | 2 | | N | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 29.08 | 738.7 | 30.17 | 766.2 | 49.1 | 9.5 | 61 | N | | | 3 | | cn | N | N | 0 | 0 | | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 25.21 | 640.3 | | | 27.9 | — 2.3 | 100 | W | | | 2 | | | | | 0 | 0 | Foggy | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.25 | 768.3 | 30.28 | 769.1 | 55 4 | 13.0 | 81 | NNW | | | 1 | | 8 | NNW | NNW | 0 | 0 | ¾ covered | Lt. Decante, Director. |
| Rouen, Normal School | 30.17 | 766.2 | 30.25 | 768.4 | 44.6 | 7.0 | 76 | WNW | | | 1 | | 1 | | W | 0.039 | 1.0 | Clear | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 30.22 | 767.5 | 30.25 | 768.8 | 48.7 | 9.3 | 66 | WNW | | | 2 | | 1 | SW | WSW | 0.066 | 1.67 | Clear | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 30.09 | 764.2 | 30.25 | 768.4 | 44.8 | 7.1 | 80 | WSW | | | 1 | | | N | WSW | 0 | 0 | | E. Renou, Director. |
| Tarbes, Normal School | 29.11 | 739.3 | 30.21 | 767.4 | 50.0 | 10 | 62 | SW | | | 2 | | 0 | | | 0 | 0 | Clear | T. Huguet, Director. |
| Versailles Observatory | 29.75 | 755.7 | 30.24 | 768.2 | 42.6 | 5 9 | | NW | | | 1 | | 10 | | | 0 | 0 | Dense fog | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.52 | 749.8 | 30.25 | 768.4 | 46.4 | 8 | 52 | NE | | | 1 | | 2 | W | NE | 0 | 0 | Slightly cl'dy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.94 | 760.5 | 29.97 | 761.2 | 75.2 | 24 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 29.58 | 751.2 | 30.20 | 767.1 | 47.5 | 8.6 | 65 | N | | | 2 | | 4cs | | | 0 | 0 | | Mr. Jays. |
| Marseilles, Observatory | | | | | | | | | | | | | | | | | | | The Staff. |
| Mont-Louis | 24.84 | 630.8 | 30.15 | 765.8 | 42.4 | 5.8 | 36 | WNW | 13.0 | 5.8 | | | 1 | | S | 0 | 0 | | M. Cave. |
| Nice | | | 29.99 | 761.7 | 57.2 | 14.0 | 69 | SW | | | 1 | | 8 | | | 0 | 0 | ¾ covered | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.97 | 761.2 | | | 46.0 | 7.8 | 76 | WSW | | | 2 | | 7 | | WSW | 0 | 0 | | Marié Davy, Director. |
| Perpignan | 30.04 | 763.0 | 30.15 | 765.7 | 55.6 | 13.1 | 53 | NE | 28.0 | 12.5 | | | 2 | | NW | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.53 | 572.3 | | | 24.8 | — 4.0 | | N | | | 2 | | 0 | | | 0 | 0 | Clear | Gen'l de Nansouty. |
| Toulouse, Observatory | 29.61 | 752.1 | 30.30 | 769.7 | 48.2 | 9.0 | 73 | NW | | | 1 | | 7 | | | 0 | 0 | | M. Mercadier Juller. |
| Tours | 30.08 | 764.1 | 30.28 | 769.1 | 43.5 | 6.4 | 85 | ESE | | | 1 | | 7 | | W | 0 | 0 | | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.24 | 768.0 | 30.26 | 768.6 | 35.6 | 2.0 | 94 | NNW | 17.7 | 7.9 | | | 10n | | | 0.575 | 14.6 | Raining | Marc Dechevrens, S. J. |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque on the scale 0 to 4 and Brest on the scale 0 to 10; Mirecourt apparently gives cloud direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1.010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–1 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.20 | 741.7 | 30.05 | 763.2 | 37.4 | 3.0 | 74 | W | | | 3 | | 3 | W | | 0.012 | 0.3 | | Prof. Dr. Hoh. |
| Berlin | 29.88 | 759.0 | 30.06 | 763.5 | 38.3 | 3.5 | 75 | NW | | | 1 | | 10 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.50 | 749.2 | 30.03 | 762.7 | 34.9 | 1.6 | 91 | NW | | | 1 | | 10 | | | 0.004 | 0.09 | Rainy | Royal University Obs'y |
| Carlsruhe | 29.75 | 755.7 | 30.20 | 767.0 | 38.6 | 3.8 | 83 | SW | | | 1 | | 5 | N | | 0.098 | 2.5 | | Albert Senz. |
| Cassel | 29.47 | 748.5 | 30.08 | 764.0 | 37.8 | 3.2 | 75 | NNE | | | 2 | | 0 | N | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.97 | 761.3 | 30.13 | 765.4 | 42.8 | 6.0 | 81 | S | | | 2 | | 3 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.79 | 756.7 | 30.18 | 766.5 | 45.1 | 7.3 | | NNW | | | 1 | | 3 | | | 0.035 | 0.9 | | Physical Society. |
| Friedrichshafen | 28.72 | 729.5 | 30.12 | 765.0 | 35.2 | 1.8 | 82 | N | | | 2 | | 10 | N | | 0.016 | 0.4 | Snowing | M. Wilhelm. |
| Hamburg | 30.01 | 762.3 | 30.09 | 764.2 | 36.0 | 2.2 | 93 | SW | | | 2 | | 8cs | | | 0.035 | 0.9 | | Captain F. Hegemann. |
| Kiel | 30.03 | 762.8 | 30.05 | 763.2 | 37.9 | 3.3 | 87 | WNW | | | 2 | | 2 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.92 | 759.9 | 30.00 | 762.1 | 34.7 | 1.5 | 86 | W | | | 2 | | 6 | | | 0.083 | 2.1 | Snowing | Prof. E. Luther. |
| Köslin | | | 29.97 | 761.1 | 34.7 | 1.5 | | Calm | | | 0 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.70 | 754.3 | 30.13 | 765.4 | 35.4 | 1.9 | 84 | NW | | | 2 | | 10 | NW | | 0.114 | 2.9 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.91 | 759.6 | 29.95 | 760.8 | 37.4 | 3.0 | 83 | S | | | 1 | | 10n | | | | | | Skalweit. |
| Neufahrwasser | 29.98 | 761.4 | 29.99 | 761.8 | 36.5 | 2.5 | 84 | NW | | | 1 | | 10 | | | 0.012 | 0.3 | | A. Lothes. |
| Posen | 29.74 | 755.5 | 30.05 | 763.2 | 35.8 | 2.1 | 85 | N | | | 4 | | 10 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.67 | 753.7 | 30.25 | 768.3 | 39.0 | 3.9 | 80 | Calm | | | 0 | | 6 | NE | | 0.040 | 1.02 | | Imp. University Observatory. |
| Stuttgart | 29.19 | 741.4 | 30.12 | 765.1 | 38.8 | 3.8 | 70 | NW | | | 1 | | 4 | W | | 0.028 | 0.7 | | Prof. Schoder. |
| Treves, (Trier) | | | | | | | | | | | | | | | | | | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.58 | 725.9 | 30.15 | 765.9 | 33.4 | 0.8 | 90 | W | 1.1 | 0.5 | | | 10 | | | 0.024 | 0.6 | Foggy | Dr. Van Bebber. |
| Wustrow, Naval School | 30.02 | 762.5 | 30.04 | 763.1 | 31.3 | — 0.4 | 100 | WNW | | | 1 | | Fog | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.45 | 748.1 | 29.85 | 758.1 | 61.0 | 16.1 | | SW | | | 1.0 | | k | | | | | Clouded | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Deesa | 29.46 | 748.4 | 29.94 | 760.5 | 77.5 | 25.3 | 14 | NNE | 9.6 | 4.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.85 | 758.2 | 29.89 | 759.1 | 76.3 | 24.6 | 53 | NNW | 29 | 13.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.19 | 741.4 | 29.95 | 760.8 | 70.7 | 21.5 | 33 | Calm | 1.4 | 0.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.33 | 694.1 | 29.82 | 757.5 | 84.2 | 29.0 | 51 | W | 12.0 | 5.4 | | | 1 | | | 0 | 0 | | |
| Roorkee | 28.96 | 735.7 | 29.88 | 759.0 | 69.8 | 21.0 | 24 | NW | 1.1 | 0.5 | | | | | | 0 | 0 | Blue sky | |
| Agra | 29.36 | 745.9 | 29.94 | 760.4 | 74.7 | 23.7 | 28 | W | | | | | | | | 0 | 0 | | |
| Nagpur | 28.82 | 732.0 | 29.87 | 758.6 | 79.6 | 26.4 | 29 | Calm | 2.5 | 1.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.51 | 749.4 | 29.89 | 759.2 | 70.8 | 21.6 | 27 | NNW | 3.7 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.60 | 751.7 | 29.92 | 759.8 | 73.3 | 22.9 | 36 | NW | 3.9 | 1.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.65 | 753.2 | 29.84 | 757.8 | 78.9 | 26.1 | 46 | W | 2.4 | 1.1 | | | 2 | W | W | 0 | 0 | | |
| Hazaribagh | 27.82 | 706.5 | 29.85 | 758.2 | 72.6 | 22.6 | 20 | WNW | 10.7 | 4.8 | | | 1 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.70 | 754.4 | 29.78 | 756.5 | 79.8 | 26.6 | 70 | SSE | 3.4 | 1.5 | | | 5 | | | 0.51 | 13.0 | D. clouds | |
| Calcutta (Alipore) | 29.78 | 756.3 | 29.80 | 756.9 | 81.4 | 27.4 | 45 | ENE | 2.0 | 0.9 | | | 1 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.32 | 744.8 | 29.71 | 754.7 | 80.4 | 26.9 | 26 | WNW | 4.5 | 1.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.73 | 755.1 | 29.82 | 757.5 | 80.4 | 26.9 | 87 | SSW | 6.7 | 3.0 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.39 | 746.5 | 29.73 | 755.1 | 73.4 | 23.0 | 65 | NE | 4.9 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.54 | 724.9 | 29.93 | 760.2 | 72.3 | 22.4 | 27 | Calm | 3.8 | 1.7 | | | 2 | E | | 0 | 0 | D. clouds | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From—. | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.61 | 752 0 | 30.03 | 762.7 | 44.6 | 7.0 | 62 | Calm | 0 | 0 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.46 | 748.3 | 29.99 | 761.8 | 47.1 | 8.4 | 69 | WSW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.93 | 760.1 | 30.04 | 763.0 | 43.5 | 6.4 | 69 | N | 1.8 | 0.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 29.07 | 738.3 | 30.00 | 762.0 | 47.8 | 8.8 | 64 | ESE | 2.5 | 1.1 | ..... | ..... | 3 | N | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.78 | 756.4 | 29.98 | 761.4 | 54.1 | 12.3 | 58 | SW | 2.5 | 1.1 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 28.03 | 711.9 | 29.99 | 761.8 | 43.9 | 6.6 | 54 | NE | ..... | ..... | 2 | ..... | 3 | N | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.97 | 761.2 | 30.02 | 762.5 | 46.0 | 7.8 | 75 | SE | 7.4 | 3.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.73 | 755.1 | 29.99 | 761.8 | 52.7 | 11.5 | 43 | NW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Cav. F Meucci |
| Leghorn | 29.91 | 759.8 | 30.00 | 762.0 | 49.6 | 9.8 | 64 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 29.84 | 757.8 | 30.02 | 762.4 | 54.5 | 12.5 | 47 | N | 3.1 | 1.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.71 | 754.7 | 29.97 | 761.3 | 47.6 | 8.8 | 63 | NNE | 24.8 | 11.1 | ..... | ..... | 7 | NE | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.06 | 738.2 | 29.97 | 761.3 | 52.9 | 11.6 | 73 | NW | 1.8 | 0.8 | ..... | ..... | 5 | ..... | ..... | 0.028 | 0.7 | ..... | Prof. D. Conti. |
| Cagliari | 29.76 | 755.9 | 29 96 | 760.9 | 48.3 | 14.6 | 55 | NW | ..... | ..... | 2 | ..... | 1 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.73 | 755.2 | 29.99 | 761.8 | 54.5 | 12.5 | 57 | NE | 3.1 | 1.4 | ..... | ..... | 3 | ..... | ..... | 0.031 | 0.8 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.88 | 759.0 | 29.96 | 760.9 | 53.8 | 12.1 | 69 | SE | 3.8 | 1.7 | ..... | ..... | 9 | SW | ..... | 0.012 | 0.3 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.43 | 747.4 | 29.98 | 761.5 | 54.0 | 12.2 | 50 | WSW | 3.8 | 1.7 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.03 | 762.7 | 30.05 | 763.3 | 45.8 | 7.7 | 85 | NNE | 7.0 | 3.1 | ..... | ..... | 10n | ..... | ..... | 0.450 | 11.43 | Light rain... | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.79 | 756.6 | 30.00 | 762.0 | 47.5 | 8.6 | 94 | N | 5.4 | 2.4 | ..... | ..... | 10n | ..... | ..... | 0.470 | 11.94 | Raining..... | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.96 | 761.0 | 30.03 | 762.7 | 50.4 | 10.2 | 97 | N | 4.4 | 2.0 | ..... | ..... | 10n | ..... | ..... | 0.090 | 2.29 | Light rain... | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.16 | 640.3 | 30.25 | 770.9 | 41.0 | 5.0 | 51 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Prof. L. Perez. |
| Leon | 24.57 | 624.2 | 30.26 | 768.7 | 48.9 | 9.4 | 75 | N | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Prof. M. Leal |
| Mexico, Central Obs'y | 23.19 | 589.0 | 30.44 | 773.3 | 41.4 | 5.2 | 74 | Calm | 0 | 0 | ..... | 0 | 1s | ..... | ..... | 0 | 0 | Fine ..... | The Staff. |
| Pabellon, (Aguascallentes) | ..... | ..... | ..... | ..... | 44.6 | 7.0 | 80 | ENE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | M. V. de Leon, M. E. |
| Tlacotalpam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. M. Cházaro. |
| San Luis Potosi | 24.19 | 613.0 | 30.14 | 765.6 | 44.0 | 6.7 | 73 | E | ..... | ..... | 1 | 1 | 4 | E | W | 0 | 0 | ½ clouded... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.48 | 596.5 | 30.25 | 768.3 | 39.2 | 4.0 | 57 | NNW | 0.4 | 0.2 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | Clear..... | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.47 | 722.3 | 30.18 | 765.4 | 73.4 | 23 0 | 68 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | SW | 0 | 0 | Clear..... | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1893 m., or 6210.4 ft.; Zacatecas, 2,490 m., or 8,168.6 ft.; Puebla, Catholic Institute, 2201m., or 7220.9 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 532 m., or 1745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.17 | 766.2 | 30.17 | 766.2 | 44.6 | 7.0 | ..... | W | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.142 | 3.6 | ..... | |
| Groningen | 30.04 | 763.0 | 30.10 | 764.4 | 41.7 | 5.4 | ..... | SW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 30.07 | 763.8 | 30.07 | 763.8 | 40.8 | 4.9 | ..... | SW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.035 | 0.9 | ..... | |
| Hellevoetsluis | 30.13 | 765.4 | 30.13 | 765.4 | 44.1 | 6.7 | 92 | WSW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.10 | 764.4 | 30.14 | 765.6 | 47.1 | 8.4 | 66 | WSW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instru'tal error and temperature. Inches. | Barometer. Corrected for instru'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.41 | 747.1 | 29.47 | 748.5 | 34.5 | 1.4 | 89 | S | 39.8 | 17.8 | ..... | ..... | 10 | ..... | ..... | 0.390 | 9.9 | Rain & snow | |
| Brönö | 29.34 | 745.8 | 29.40 | 746.8 | 41.0 | 5.0 | 54 | SSW | 18 | 8 | ..... | ..... | 2 | ..... | ..... | 0.445 | 11.3 | ..... | |
| Christiania | 29.60 | 751.7 | 29.75 | 755.6 | 32.0 | 0.0 | 85 | SW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.20 | 741.6 | 29.24 | 742.7 | 38.5 | 3.6 | 63 | SSW | 36 | 16 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.16 | 766.0 | 30.35 | 770.9 | 59.2 | 15.1 | 80 | SSW | 9.8 | 4.4 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.17 | 740.9 | 30.20 | 767.1 | 59.2 | 15.1 | 45 | NNE | 12.5 | 5.6 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 30.21 | 767.4 | 30.30 | 769.6 | 62.4 | 16.9 | 38 | NNW | 8.7 | 3.9 | ..... | ..... | 0 | ..... | ..... | 0.028 | 0.7 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.86 | 758.5 | 30.22 | 767.6 | 58.8 | 14.8 | 48 | NNE | 16.1 | 7.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.32 | 770.0 | 30.39 | 771.8 | 62.2 | 16.8 | 64 | SW | 17.4 | 7.8 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h 6 m., p. m

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | ..... | ..... | 29.90 | 759.5 | 82.4 | 28.0 | ..... | WSW | ..... | ..... | 3 | ..... | 2 | ..... | WSW | 2 | W | D. clouds. | A. J. de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. T. d'Oliveria, Com'd't |
| Rio Lima, Capt. S. C. da SilvaCosta, Porto Praya, Cape Verd Islands | ..... | ..... | 30.06 | 763.6 | 72.7 | 22.6 | ..... | NNE | ..... | ..... | 5 | ..... | 10 | ..... | NNE | 3 | NNE | Overcast | A. Ferreira, 2nd Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | 29.77 | 756.1 | 82.0 | 27.8 | ..... | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 30.06 | 763.5 | 55.4 | 13.0 | ..... | N | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 1 | ..... | Blue sky | J. M. T. Guimaraes, Com'd't |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.57 | 751.1 | 30.01 | 762.2 | 34.9 | 1.6 | 75 | SSW | 4 | 2 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs |
| Wilna | 29.63 | 750.0 | 29.96 | 761.0 | 37.4 | 3.0 | 87 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy cl'ds. | Astronomical Obs. |
| Dorpat | 29.80 | 756.9 | 30.05 | 763.3 | 36.9 | 2.7 | 87 | ESE | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.11 | 764.8 | 30.13 | 765.2 | 35.2 | 1.8 | 75 | SE | 11 | 5 | ..... | ..... | 8k | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.23 | 742.5 | 29 89 | 759.3 | 33.3 | 0.7 | 92 | N | 4 | 2 | ..... | ..... | 10ks;n | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.89 | 759.1 | 29.96 | 760.9 | 38.1 | 3.4 | 73 | NNW | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.88 | 759.0 | 29.90 | 759.5 | 38.7 | 3.7 | 97 | NW | 11 | 5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds. | Lagorio. |
| Moscow | 29.76 | 756 0 | 30.35 | 770.9 | 24.4 | — 4.2 | 84 | SE | 7 | 3 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.72 | 755.0 | 29.94 | 760.4 | 37.4 | 3.0 | 66 | ENE | 31 | 14 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.27 | 768.8 | 30.29 | 769.3 | 34.9 | 1.6 | 65 | SE | 13 | 6 | ..... | ..... | 2ks | ..... | ..... | ..... | ..... | ..... | Capt. Sselliwerstow. |
| Tiflis | 28.33 | 719.6 | 29.71 | 754.7 | 64.2 | 17.9 | 23 | Calm | 0 | 0 | ..... | ..... | 8cs | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.98 | 761.6 | 29.90 | 759.5 | 39.2 | 4.0 | 40 | NE | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Capt. Wisganow. |
| Krotkowo* | 29.89 | 759.2 | 30.39 | 771.9 | 28.0 | — 2.2 | 73 | NE | 11 | 5 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 30.10 | 764.5 | 30.39 | 771.8 | 21.2 | — 6.0 | 62 | NNE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.52 | 749.8 | 30.57 | 776.4 | 17.4 | — 8.1 | 56 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.63 | 752.7 | 29.87 | 758.6 | 59.2 | 15.1 | 17 | SW | 11 | 5 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.47 | 723.1 | 30.17 | 766.2 | 58.3 | 14.6 | 31 | N | 7 | 3 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 30.09 | 764.2 | 30.64 | 778.3 | 961 | —12.7 | 76 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.51 | 775.0 | 30.84 | 783.4 | 2.3 | —16.5 | 73 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 30.36 | 771.1 | 30.50 | 774.7 | 27.0 | — 2.8 | 66 | Calm | 0 | 0 | ..... | ..... | 2cs | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend 455? m, or 1,492.7? ft., Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E. 48° 34'.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.00 | 762.0 | 30.11 | 764.7 | 57.2 | 14 | 55 | SE | 1.7 | 0.75 | ..... | 0 | 1 | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 30.24 | 768.1 | 30.30 | 769.6 | 56.1 | 13.4 | 71 | N | 0.8 | 0.37 | ..... | 2 | 7 | S | ..... | 0 | 0 | Almost cov'd | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.24 | 691.8 | ..... | ..... | 43.2 | 6.2 | 82 | NE | 9.9 | 4.43 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.96 | 710.2 | ..... | ..... | 54.3 | 12.4 | 45 | NE | 14.1 | 6.33 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |
| Murcia, Met. Obs'y | 30.00 | 762.0 | 30.15 | 765 8 | 64.4 | 18.0 | 56 | W | 0.7 | 0.31 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y. | 29.32 | 744.6 | 30.22 | 767.6 | 55.0 | 12.8 | 62 | NNE | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | R. Gil Villanueva, Dir. |
| Sub-Series | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 30.19 | 766.8 | 30.26 | 768.5 | 69.1 | 20.6 | 58 | ENE | 7.6 | 3.4 | ..... | 4ck | 0 | NE | ..... | Inap. | Inap. | Fair | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.76 | 755.9 | 29.81 | 757.2 | 84.2 | 29.0 | 80 | SW | 14.1 | 6.3 | ..... | 0 | 5k | ..... | E | 0 | 0 | Very cloudy | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.09 | 764 2 | 30.19 | 766.7 | 61.2 | 16.2 | 69 | SW | 4.0 | 1.8 | ..... | 0 | 4 | ..... | SE | 0.012 | 0.3 | ..... | Capt. C. Pujazon, R. N. Dir. |
| San Juan de Porto Rico, W. I. | 29.98 | 761.4 | 30.07 | 763.7 | 76.3 | 24.6 | 77 | NE | 10.6 | 4.76 | ..... | 6kn | 5kn | NE | NE | 0.128 | 3.26 | Overcast | Leonardo de Tejeda, Ch'f Eng'r |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.74 | 755.4 | 29.78 | 756.4 | 33.8 | 1.0 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.118 | 3.0 | ..... | |
| Umea | 29.74 | 755.3 | 29.79 | 756.6 | 32.0 | 0.0 | 96 | S | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0.122 | 3.1 | ..... | |
| Hernosand | 29.67 | 753.6 | 29.72 | 754.9 | 33.1 | 0.6 | 94 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.67 | 753.5 | 29.84 | 758.0 | 35.1 | 1.7 | 88 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.78 | 756.5 | 29.84 | 758.0 | 36.6 | 2.0 | 82 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.74 | 755.3 | 29.81 | 757.2 | 33.8 | 1.0 | 94 | SSW | 7.6 | 3.4 | ..... | ..... | 10 | ..... | SW | 0.002 | 0.05 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.73 | 729.7 | 30.19 | 766.8 | 43.2 | 6.7 | 68 | N | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy..... | The Observatory. |
| Zurich | 28.52 | 724.5 | 30.23 | 767.7 | 36.0 | 2.2 | 74 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Snowy..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +4.4 mm.; Thermometer, —0.4 cent.; Relative Humidity, —2 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.89 | 759.1 | 49.8 | 9.6 | 61 | ENE | 13 | 6.0 | ..... | ..... | 8 | ..... | ENE | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.20 | 767.0 | 67.1 | 19.5 | ..... | SE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... |
| Valona | ..... | ..... | 29.93 | 760.1 | 50.2 | 10.1 | ..... | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.74 | 755.4 | 29.85 | 758.3 | 62.1 | 16.7 | 77 | SW | ..... | ..... | 1 | ..... | 6ks | ..... | SW | 0.37 | 9.4 | D. clouds..... | Prof. C. V. A. Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the cooperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.98 | 761.5 | 30.05 | 763.3 | 29.2 | — 1.6 | 68 | SW | 15 | 6.7 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.93 | 760.2 | 30.26 | 768.6 | 28 | — 2.2 | ..... | SW | 8 | 3.6 | ..... | ..... | 8s | ..... | W | 0 | 0 | Cloudy..... | W. R. Bigg. |
| *Chatham, N. B | 30.19 | 766.8 | 30.25 | 768.3 | 24 | — 4.4 | 76 | SW | 18 | 8.0 | ..... | 9c | 0 | SW | ..... | 0 | 0 | Fair..... | G. A. Blair. |
| Charlottetown, P. E. Island | 30.34 | 770.6 | 30.38 | 771.6 | 25 | — 3.9 | 85 | SW | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 30.00 | 762.0 | 30.22 | 767.6 | 0.0 | —17.8 | 100 | SW | ..... | ..... | 1 | 7cs | 0 | W | ..... | 0 | 0 | Fair..... | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | W. H. Bevis. |
| *Father Point, Quebec | 29.90 | 761.0 | 29.99 | 761.7 | 27 | — 2.8 | 82 | S | 40 | 17.9 | ..... | 8cs | 2s | Calm | SW | 0 | 0 | Cloudy..... | J. McWilliams. |
| Fredericton, N. B | 30.35 | 770.9 | 30.41 | 772.4 | 27.0 | — 2.8 | 78 | SW | 10 | 4.5 | ..... | 3cs | d | ..... | ..... | 0 | 0 | Fair..... | Prof. Harrison. |
| *Fort Garry Manitoba | 29.39 | 746.5 | 30.32 | 770.1 | — 2 | —18.9 | 97 | NW | 7 | 3.1 | ..... | 0 | 2ks | ..... | NW | 0 | 0 | Fair..... | James Stewart. |
| Granton, Ontario | 29.03 | 737.3 | 30.16 | 766.1 | 37 | 2.8 | ..... | SW | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0 | 0 | Overcast..... | James Grant. |
| *Halifax, N. S | 30.37 | 771.4 | 30.51 | 774.9 | 25 | — 3.9 | 85 | W | 4 | 1.8 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.85 | 758.2 | 30.24 | 768.1 | 35.7 | 2.1 | 75 | SW | ..... | ..... | 3 | 10cs | 0 | SW | ..... | 0 | 0 | Cloudy..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.92 | 760.0 | 30.28 | 769.1 | 20 | — 6.7 | 81 | SE | 22 | 9.8 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.30 | 769.6 | 30.34 | 770.6 | 22.2 | — 5.4 | 90 | W | 11 | 4.9 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair..... | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 30.02 | 762.5 | 30.23 | 767.8 | 24 | — 4.4 | 67 | S | 20 | 8.9 | ..... | 0 | 2s | ..... | ..... | 0 | 0 | Clear..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.32 | 744.7 | 30.04 | 763.0 | 30 | — 1.1 | 89 | S | 10 | 4.5 | ..... | ..... | 10n | ..... | S | 0 | 0 | Cloudy..... | Rev. R. Mosley. |
| Peterboro, Ontario | ..... | ..... | ..... | ..... | 32.7 | 0.4 | 87 | SW | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.53 | 750.0 | 30.26 | 768.6 | 31 | — 0.6 | 89 | SW | 12 | 5.4 | ..... | ..... | 10n | ..... | SW | 0 | 0 | Threatening | H. Morgan. |
| Port Hastings, N. S | 30.42 | 772.6 | 30.48 | 774.2 | 20.9 | — 6.2 | ..... | NW | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine..... | Peter Grant. |
| Port Stanley, Ontario | 29.57 | 751.1 | 30.24 | 768.1 | 34 | 1.1 | 79 | S | 11 | 4.9 | ..... | ..... | 10n | ..... | SE | 0 | 0 | Cloudy..... | M. Payne. |
| *Quebec, Quebec | 29.90 | 759.4 | 30.25 | 768.3 | 15 | — 9.4 | 82 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.51 | 749.5 | 30.01 | 762.2 | 18 | — 7.8 | 76 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy..... | W. H. McIntyre. |
| St. Andrews, N. B | 30.37 | 771.4 | 30.42 | 772.6 | 30 | — 1.1 | 86 | W | ..... | ..... | 3 | 2k | 2ks | ..... | ..... | 0 | 0 | Fair..... | Dr. Gove. |
| St. John, N. B | 30.28 | 769.1 | 30.45 | 773.4 | 33 | 0.6 | 89 | SW | 21 | 9.4 | ..... | 0 | 5ck | ..... | ..... | 0 | 0 | Fair..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.34 | 745.2 | 30.08 | 764.0 | 34 | 1.1 | 80 | S | 80 | 13.4 | ..... | ..... | 10s | ..... | ..... | 0.05 | 1.3 | Hailing..... | K. Stewart. |
| Stayner, Ontario | 29.29 | 744.0 | 30.10 | 764.5 | 36 | 2.2 | 71 | S | 10 | 4.5 | ..... | ..... | 10n | ..... | SW | 0 | 0 | Cloudy..... | R. J. Cole. |
| Stratford, Ontario | 28.84 | 732.5 | 30.16 | 766.1 | 34.0 | 1.1 | 89 | SE | 22.0 | 9.8 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Overcast..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.38 | 771.6 | 30.42 | 772.6 | 22 | — 5.6 | 68 | SW | 20 | 8.9 | ..... | 8c | 0 | NW | ..... | 0 | 0 | Fair..... | T. C. Hill. |
| *Toronto, Ontario | 29.80 | 756.9 | 30.20 | 767.1 | 34 | 1.1 | 81 | SW | 19 | 8.5 | ..... | ..... | 10n | ..... | SW | 0 | 0 | Cloudy..... | Magnetic Observatory. |
| Windsor, N. S | 30.40 | 772.1 | 30.50 | 774.7 | 24.5 | — 4.2 | 94 | SW | 10 | 4.5 | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Fine..... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 18.0 | — 7.8 | 84 | NW | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters, Stratford, 1,182 ft., or 360.3 meters.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Cloud. Amount. Up'er 0—10. | Cloud. Amount. Low'r 0—10. | Cloud. Direction. Upper. From— | Cloud. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 30.24 | 768.1 | 30.49 | 774.4 | 27 | — 2.8 | 76 | S | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Alpena, Michigan | 29.30 | 744.2 | 29.97 | 761.2 | 32 | 0.0 | 79 | SW | 14 | 6.3 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Atlanta, Georgia | 29.28 | 743.7 | 30.49 | 774.4 | 38 | 3.3 | 80 | NE | 17 | 7.6 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Atlantic City, New Jersey | 30.54 | 775.7 | 30.56 | 776.2 | 35 | 1.7 | 70 | E | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Augusta, Georgia | 30.30 | 769.6 | 30.49 | 774.4 | 43 | 6.1 | 75 | NE | 9 | 4.0 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Baltimore, Maryland | 30.56 | 776.2 | 30.61 | 777.5 | 32 | 0.0 | 79 | N | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Barnegat, New Jersey | 30.52 | 775.2 | 30.54 | 775.7 | 37 | 2.8 | 90 | E | 9 | 4.0 | ..... | 5k | 0 | SW | ..... | 0 | 0 | Fair | |
| Bismarck, Dakota | 28.39 | 721.1 | 30.24 | 768.1 | 10 | —12.2 | 100 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Boerne, Texas | 28.80 | 731.5 | 29.46 | 748.3 | 56 | 13.3 | 94 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.00 | 685.8 | 29.96 | 761.0 | 47 | 8.3 | 35 | SE | 28 | 12.5 | ..... | 0 | 5s | ..... | S | Inap. | Inap. | Fair | |
| Boston, Massachusetts | 30.40 | 772.1 | 30.57 | 776.5 | 30 | — 1.1 | 89 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Brackettville, Texas | 29.13 | 739.9 | 30.17 | 766.3 | 60 | 15.6 | 100 | SE | 4 | 1.8 | ..... | ..... | 10n | ..... | SE | Inap. | Inap. | Light rain | |
| Breckenridge, Minnesota | 29.21 | 741.9 | 30.28 | 769.1 | 20 | — 6.7 | 86 | W | 18 | 8.0 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Brownsville, Texas | 30.20 | 767.1 | 30.25 | 768.3 | 62 | 16.7 | 94 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.50 | 749.3 | 30.23 | 767.8 | 34 | 1.1 | 70 | SW | 16 | 7.2 | ..... | 9ks | 0 | W | ..... | 0 | 0 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 49 | 9.4 | 24 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 30.00 | 762.0 | 30.31 | 769.9 | 29 | — 1.7 | 78 | S | 36 | 16.1 | ..... | 2c | Haze | SW | Calm | 0 | 0 | Fair | |
| Cairo, Illinois | 30.05 | 763.3 | 30.47 | 773.9 | 37 | 2.8 | 81 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.30 | 642.6 | 30.10 | 764.5 | 48 | 8.9 | 49 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 39 | 3.9 | 38 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.58 | 700.5 | 30.15 | 765.8 | 24 | — 4.4 | 77 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.41 | 772.4 | 30.42 | 772.6 | 46 | 7.8 | 100 | NE | ..... | ..... | 5 | ..... | 10n | ..... | NE | 0.35 | 8.9 | Light rain | |
| Cape Henry, Virginia | 30.44 | 773.2 | 30.46 | 773.7 | 39 | 3.9 | 82 | NE | 11 | 4.9 | ..... | 5k | 0 | N | ..... | 0.28 | 7.1 | Fair | |
| Cape Lookout, N. Carolina | 30.36 | 771.1 | 30.38 | 771.6 | 45 | 7.2 | 92 | N | 28 | 12.5 | ..... | ..... | 10n | ..... | Calm | 0.20 | 5.1 | Light rain | |
| Cape May, New Jersey | 30.48 | 774.2 | 30.52 | 775.2 | 37 | 2.8 | 80 | NE | 10 | 4.5 | ..... | 8ck | 2s | SW | Calm | 0 | 0 | Cloudy | |
| Castroville, Texas | 29.49 | 749.0 | 30.21 | 767.3 | 61 | 16.1 | 88 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 30.42 | 772.6 | 30.48 | 774.2 | 44 | 6.7 | 84 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Cheyenne, Wyoming | 24.22 | 615.2 | 30.16 | 766.1 | 25 | — 3.9 | 75 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.50 | 749.3 | 30.22 | 767.6 | 37 | 2.8 | 81 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | SW | 0.03 | 0.8 | Cloudy | |
| Cincinnati, Ohio | 29.74 | 755.4 | 30.43 | 772.9 | 37 | 2.8 | 81 | S | 4 | 1.8 | ..... | ..... | 10s;fog | ..... | NW;Calm | 0 | 0 | Cloudy | |
| Cleveland, Ohio | 29.54 | 750.3 | 30.30 | 769.6 | 37 | 2.8 | 81 | SE | 18 | 8.0 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Coleman City, Texas | 28.45 | 722.6 | 30.14 | 765.5 | 64 | 12.2 | 80 | NE | 4 | 1.8 | ..... | ..... | 10n | ..... | N | 0 | 0 | Cloudy | |
| Columbus, Ohio | 29.50 | 749.3 | 30.39 | 771.9 | 32 | 0.0 | 79 | S | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Concho, Texas | 28.29 | 718.6 | 30.00 | 762.0 | 50 | 10.0 | 51 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.83 | 757.7 | 30.32 | 770.1 | 50 | 10.0 | 100 | SE | 4 | 1.8 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Davenport, Iowa | 29.58 | 751.3 | 30.25 | 768.3 | 37 | 2.8 | 90 | W | 6 | 2.7 | ..... | ..... | 10s | ..... | W | 0.06 | 1.5 | Cloudy | |
| Deadwood, Dakota | 25.52 | 648.2 | ..... | ..... | 16 | — 8.9 | 83 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Decatur, Texas | 29.00 | 736.9 | 30.29 | 769.4 | 50 | 10.0 | 80 | SE | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.48 | 748.8 | 30.30 | 769.6 | 50 | 10.0 | 93 | S | 4 | 1.8 | ..... | 2cs | Fog | SW | Calm | 0 | 0 | Fair | |
| Denver, Colorado | 24.97 | 634.2 | 30.19 | 766.8 | 30 | — 1.1 | 68 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Des Moines, Iowa | 29.43 | 747.5 | 30.35 | 770.9 | 35 | 1.7 | 80 | NW | 5 | 2.2 | ..... | 8cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Detroit, Michigan | 29.49 | 749.0 | 30.19 | 766.8 | 34 | 1.1 | 90 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | SW | Inap. | Inap. | Cloudy | |
| Dodge City, Kansas | 27.70 | 703.6 | 30.09 | 764.3 | 38 | 3.3 | 81 | NE | 20 | 8.9 | ..... | ..... | 10ks | ..... | SW | 0.02 | 0.5 | Cloudy | |
| Dubuque, Iowa | 29.53 | 750.0 | 30.26 | 768.6 | 36 | 2.2 | 80 | W | 1 | 0.4 | ..... | 8c | Fog | Calm | Calm | 0 | 0 | Fair | |
| Duluth, Minnesota | 29.29 | 744.0 | 29.99 | 761.7 | 35 | 1.7 | 90 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0.02 | 0.5 | Cloudy | |
| Eagle Pass, Texas | 29.44 | 747.8 | 30.18 | 766.6 | 61 | 16.1 | 88 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.13 | 3.3 | Cloudy | |
| Eastport, Maine | 30.36 | 771.1 | 30.43 | 772.9 | 33 | 0.6 | 79 | SW | 16 | 7.2 | ..... | 8c | Haze | NW | Calm | 0 | 0 | Fair | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 59 | 15.0 | 88 | Calm | ..... | ..... | 0 | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| El Paso, Texas | 26.37 | 669.8 | ..... | ..... | 49 | 9.4 | 37 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0.07 | 1.8 | Fair | |
| Erie, Pennsylvania | 29.49 | 749.0 | 30.23 | 767.8 | 38 | 3.3 | 81 | S | 21 | 9.4 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Escanaba, Michigan | 29.24 | 742.7 | 29.91 | 759.7 | 32 | 0.0 | 79 | S | 16 | 7.2 | ..... | 5k | 2s | S | S | 0 | 0 | Cloudy | |
| Florence, Arizona | 28.60 | 726.4 | 30.20 | 767.1 | 48 | 8.9 | 63 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 28.13 | 714.5 | ..... | ..... | 4 | —15.6 | 74 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Fort Craig, New Mexico | 25.63 | 651.0 | 29.79 | 756.7 | 43 | 6.1 | 75 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.33 | 643.4 | 30.29 | 769.4 | 49 | 9.4 | 85 | SW | 2 | 0.9 | ..... | 2ck | 0 | S | ..... | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.72 | 754.9 | 30.27 | 768.8 | 52 | 11.1 | 73 | S | 9 | 4.0 | ..... | 2c | 8ks | NW | S | 0 | 0 | Cloudy | |
| Fort Griffin, Texas | 28.93 | 734.8 | 30.23 | 767.8 | 48 | 8.9 | 93 | Calm | 0 | 0 | ..... | 5ck | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Fort Keogh, Montana | 27.60 | 701.0 | ..... | ..... | 13 | —10.6 | 80 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Fort McKavett, Texas | 27.97 | 710.4 | 29.91 | 759.7 | 53 | 11.7 | 98 | S | 8 | 3.6 | ..... | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.99 | 736.3 | 30.02 | 762.5 | 49 | 9.4 | 93 | Calm | 0 | 0 | ..... | 5ck | 0 | SE | ..... | 0 | 0 | Fair | |
| Fort Stevenson, Dakota | 28.38 | 720.8 | ..... | ..... | 2 | —16.7 | 72 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Fredericksburg, Texas | 28.53 | 724.6 | 30.11 | 764.8 | 59 | 15.0 | 65 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 30.31 | 769.9 | 30.36 | 771.1 | 57 | 13.9 | 100 | E | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Graham, Texas | 29.16 | 740.7 | 30.24 | 768.1 | 54 | 12.2 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.51 | 749.5 | 30.18 | 766.0 | 36 | 2.2 | 80 | SW | 24 | 10.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| Indianapolis, Indiana | 29.52 | 749.8 | 30.33 | 770.4 | 37 | 2.8 | 81 | SW | 3 | 1.3 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Indianola, Texas | 30.28 | 769.1 | 30.31 | 769.9 | 62 | 16.7 | 94 | E | 8 | 3.6 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 29.06 | 738.1 | 30.22 | 767.6 | 48 | 8.9 | 70 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.40 | 772.1 | 30.43 | 772.9 | 52 | 11.1 | 79 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Keokuk, Iowa | 29.62 | 752.3 | 30.27 | 768.8 | 38 | 3.3 | 91 | W | 5 | 2.2 | ..... | ..... | 10s | ..... | W | 0.01 | 0.3 | Cloudy | |
| Key West, Florida | 30.28 | 769.1 | 30.31 | 769.9 | 68 | 20.0 | 70 | NE | 16 | 7.2 | ..... | 5k | 0 | NE | ..... | 0 | 0 | Fair | |
| Kittyhawk North Carolina | 30.39 | 771.9 | 30.42 | 772.6 | 41 | 5.0 | 91 | NE | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0.50 | 12.7 | Clear | |
| Knoxville, Tennessee | 29.46 | 748.3 | 30.54 | 775.7 | 32 | 0.0 | 94 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | ..... | 0 | 0 | Foggy | |
| La Crosse, Wisconsin | 29.41 | 747.0 | 30.17 | 766.3 | 38 | 3.3 | 63 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| La Mesilla, New Mexico | 26.22 | 666.0 | 30.37 | 771.4 | 51 | 10.6 | 79 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Laredo, Texas | 29.78 | 756.4 | 30.12 | 765.0 | 65 | 18.3 | 84 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.45 | 748.0 | 30.33 | 770.4 | 41 | 5.0 | 74 | N | 6 | 2.7 | ..... | 4ck | 7s | W | ..... | 0.11 | 2.8 | Cloudy | |
| Los Angeles, California | 29.83 | 757.7 | 30.18 | 766.6 | 46 | 7.8 | 80 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.82 | 757.4 | 30.41 | 772.4 | 41 | 5.0 | 74 | SW | 4 | 1.8 | ..... | 5k | 5s | SW | Calm | 0 | 0 | Cloudy | |
| Lynchburg, Virginia | 29.86 | 758.4 | 30.58 | 776.7 | 39 | 3.9 | 55 | NE | 2 | 0.9 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Madison, Wisconsin | 29.14 | 740.1 | 30.16 | 766.1 | 37 | 2.8 | 81 | W | 10 | 4.5 | ..... | ..... | 10s | ..... | W | 0.03 | 0.8 | Cloudy | |
| Marquette, Michigan | 29.12 | 739.6 | 29.83 | 757.7 | 40 | 4.4 | 65 | W | 24 | 10.7 | ..... | 0 | 5ks | ..... | W | 0 | 0 | Fair | |
| Mason, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Memphis, Tennessee | 30.14 | 765.5 | 30.48 | 774.2 | 33 | 0.6 | 79 | E | 4 | 1.8 | ..... | 5c | Sm'e | W | Calm | 0 | 0 | Fair | |
| Milwaukee, Wisconsin | 29.39 | 746.5 | 30.15 | 765.8 | 37 | 2.8 | 90 | SW | 23 | 10.3 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Mobile, Alabama | 30.40 | 772.1 | 30.44 | 773.2 | 43.5 | 6.4 | 83 | N | 6 | 2.7 | ..... | 2c | Sm'e | NW | ..... | 0 | 0 | Fair | |
| Montgomery, Alabama | 30.22 | 767.6 | 30.47 | 773.9 | 39 | 3.9 | 81 | N | 4 | 1.8 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Morgantown, West Virginia | 29.32 | 744.7 | 30.43 | 772.9 | 39 | 3.9 | 64 | Calm | 0 | 0 | ..... | 2c | Fog | NW | Calm | 0 | 0 | Foggy | |
| Mt. Washington, N. H. | 23.84 | 605.5 | 30.20 | 767.1 | 14 | —10.0 | 63 | W | 78 | 34.9 | ..... | 2k | 0 | W | ..... | 0 | 0 | Clear | |
| Nashville, Tennessee | 29.93 | 760.2 | 30.50 | 774.7 | 35 | 1.7 | 70 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 30.46 | 773.7 | 30.59 | 777.0 | 35 | 1.7 | 75 | S | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| New London, Connecticut | 30.54 | 775.7 | 30.60 | 777.2 | 32 | 0.0 | 79 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| New Orleans, Louisiana | 30.33 | 770.4 | 30.39 | 771.9 | 56 | 13.3 | 87 | NE | 6 | 2.7 | ..... | 5cs | 0 | E | ..... | 0 | 0 | Fair | |
| Newport, Rhode Island | 30.54 | 775.7 | 30.60 | 777.2 | 32.5 | 0.3 | 79 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| New York, New York | 30.40 | 772.1 | 30.60 | 777.2 | 34 | 1.1 | 79 | SE | 5 | 2.2 | ..... | 2ck | 5s | NW | Calm | 0 | 0 | Fair | |
| Norfolk, Virginia | 30.41 | 772.4 | 30.47 | 773.9 | 38 | 3.3 | 91 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Cloudy | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.41 | 696.2 | 30.16 | 766.1 | 26 | — 3.3 | 81 | NW | 8 | 3.6 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.62 | 752.3 | 29.66 | 753.4 | 37.2 | 2.9 | 90 | S | 4 | 1.8 | | | 9n | | S | 0.32 | 8.1 | Light rain | |
| Omaha, Nebraska | 29.19 | 741.4 | 30.34 | 770.6 | 36 | 2.2 | 71 | NW | 7 | 3.1 | | 2c | 0 | NW | | Inap. | Inap. | Clear | |
| Oswego, New York | 29.99 | 761.7 | 30.33 | 770.4 | 33 | 0.6 | 70 | SE | 9 | 4.0 | | 2cs | 0 | Calm | | 0 | 0 | Fair | |
| Pembina, Dakota | 29.35 | 745.5 | 30.26 | 768.6 | 6 | —14.4 | 100 | NW | 29 | 13.0 | | | 10n | | Calm | 0.06 | 1.5 | Light snow | |
| Philadelphia, Pa | 29.52 | 749.8 | 30.58 | 776.7 | 33 | 0.6 | 89 | NE | 8 | 3.6 | | | 10ks;sm | | SW;Calm | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.95 | 735.3 | 30.80 | 782.3 | 50 | 10.0 | 65 | NW | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.78 | 451.6 | 29.99 | 761.7 | 12 | —11.1 | 23 | SW | 7 | 3.1 | | 0 | 8s | | Calm | 0.14 | 3.6 | Cloudy | |
| Ploche, Nevada | 24.09 | 611.9 | 29.86 | 758.4 | 35 | 1.7 | 27 | S | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.56 | 750.8 | 30.41 | 772.4 | 34 | 1.1 | 79 | S | 7 | 3.1 | | 5c | 0 | W | | 0 | 0 | Fair | |
| Port Huron, Michigan | 29.47 | 748.5 | 30.16 | 766.1 | 34 | 1.1 | 90 | SW | 21 | 9.4 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Portland, Maine | 30.45 | 773.4 | 30.50 | 774.7 | 30 | — 1.1 | 68 | SW | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Portland, Oregon | 29.68 | 753.9 | 29.78 | 756.4 | 38.5 | 3.6 | 91 | S | 5 | 2.2 | | | 10n | | | 0.78 | 19.8 | Light rain | |
| Prescott, Arizona | 24.85 | 631.2 | 30.21 | 767.3 | 28 | — 2.2 | 66 | W | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.20 | 741.7 | 30.03 | 762.8 | 55 | 12.8 | 61 | SE | 12 | 5.4 | | 5c | 5s | S | SE | 0 | 0 | Cloudy | |
| Punta Rassa, Florida | 30.36 | 771.1 | 30.38 | 771.6 | 57 | 13.9 | 69 | N | 10 | 4.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Red Bluff, California | 29.65 | 753.1 | 30.02 | 762.5 | 49 | 9.4 | 89 | SE | 40 | 17.9 | | | 10n | | S | 0.02 | 0.5 | Light rain | |
| Rio Grande City, Texas | 30.05 | 763.3 | 30.26 | 768.6 | 64 | 17.8 | 89 | E | 10 | 4.5 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Rochester, New York | 29.64 | 752.8 | 30.29 | 769.4 | 34 | 1.1 | 79 | S | 6 | 2.7 | | 1c | 0 | NW | | 0 | 0 | Clear | |
| Roseburg, Oregon | 29.22 | 742.2 | 29.81 | 757.2 | 33.1 | 0.8 | 100 | Calm | 0 | 0 | | | 10n | | | 1.88 | 47.8 | Heavy snow | |
| Sacramento, California | 30.07 | 763.8 | 30.15 | 765.8 | 51 | 10.6 | 86 | SE | 8 | 3.6 | | | 10s | | S | Inap. | Inap. | Cloudy | |
| St. Louis, Missouri | 29.74 | 755.4 | 30.34 | 770.6 | 35 | 3.3 | 81 | S | 6 | 2.7 | | | 10s | | Calm | 0.03 | 0.8 | Cloudy | |
| St. Marks, Florida | 30.36 | 771.1 | 30.38 | 771.6 | 52 | —11.1 | 93 | N | 1 | 0.4 | | 0 | 9s; sm | | Calm | 0 | 0 | Cloudy | |
| St. Paul, Minnesota | 29.26 | 743.2 | 30.12 | 765.0 | 31 | — 0.6 | 68 | SW | 13 | 5.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.68 | 652.3 | 30.01 | 762.2 | 34 | 1.1 | 34 | NE | 4 | 1.8 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| San Antonio, Texas | 29.57 | 751.1 | 30.16 | 766.1 | 60 | 15.6 | 88 | NE | 2 | 0.9 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| San Diego, California | 30.13 | 765.8 | 30.21 | 767.3 | 47 | 8.3 | 96 | NE | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.58 | 751.3 | 30.28 | 769.1 | 38 | 3.3 | 81 | SW | 24 | 10.7 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Sandy Hook, New Jersey | 30.54 | 775.7 | 30.57 | 776.5 | 34 | 1.1 | 79 | SE | 6 | 2.7 | | | 10s | | S | 0 | 0 | Cloudy | |
| San Francisco, California | 30.12 | 765.0 | 30.10 | 766.8 | 54.1 | 12.3 | 74 | E | 8 | 3.6 | | | 10s | | Calm | 0 | 0 | Threatening | |
| Santa Fé, New Mexico | 23.38 | 593.8 | 29.92 | 760.0 | 41 | 5.0 | 74 | E | 3 | 1.3 | | 0 | 0 | | | 0.11 | 2.8 | Clear | |
| Savannah, Georgia | 30.38 | 771.6 | 30.48 | 774.2 | 45 | 7.2 | 84 | NE | 9 | 4.0 | | | 10s | | NE | 0 | 0 | Cloudy | |
| Shreveport, Louisiana | 30.13 | 765.3 | 30.36 | 771.1 | 51 | 10.6 | 72 | SE | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Silver City, New Mexico | 24.41 | 620.0 | 30.03 | 778.0 | 45 | 7.2 | 60 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.41 | 772.4 | 30.44 | 773.2 | 41 | 5.0 | 91 | N | 10 | 4.5 | | | 10s | | N | Inap. | Inap. | Cloudy | |
| Springfield, Massachusetts | 30.44 | 773.2 | 30.58 | 776.7 | 26 | — 3.3 | 75 | S | 3 | 1.3 | | | 10s | | S | 0 | 0 | Cloudy | |
| Stockton, Texas | 27.11 | 688.6 | 30.11 | 764.8 | 49 | 9.4 | 85 | SE | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.46 | 773.4 | 30.51 | 774.9 | 34 | 1.1 | 70 | SW | 22 | 9.8 | | 0 | 8s | | SW | 0 | 0 | Fair | |
| Toledo, Ohio | 29.53 | 750.0 | 30.24 | 768.1 | 37 | 2.8 | 81 | S | 16 | 7.2 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Tucson, Arizona | 27.66 | 702.6 | 30.21 | 767.3 | 51 | 10.6 | 52 | S | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.29 | 744.0 | 29.78 | 756.4 | 42.0 | 5.6 | 87 | SW | 12 | 5.4 | | | 10n | | SW | 0.14 | 3.6 | Light rain | |
| Unalashka, Aleutian Islands | | | | | 22 | — 5.6 | 85 | Calm | | | 0 | 0 | 0 | | | 0 | 0 | Clear | |
| Uvalde, Texas | 29.38 | 746.2 | 30.20 | 767.1 | 60 | 15.6 | 94 | Calm | 0 | 0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 30.19 | 766.8 | 30.47 | 773.9 | 41 | 5.0 | 87 | SE | 13 | 5.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Virginia City, Montana | 24.15 | 613.4 | 29.63 | 752.6 | 22 | — 5.6 | 72 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Visalia, California | 29.86 | 758.4 | 30.24 | 768.1 | 44 | 6.7 | 68 | Calm | 0 | 0 | | 0 | 8s | | Calm | 0 | 0 | Fair | |
| Washington, D. C. | 30.47 | 773.9 | 30.59 | 777.0 | 28 | — 2.2 | 88 | N | 4 | 1.8 | | Haze | Haze | Calm | Calm | 0.03 | 0.8 | Hazy | |
| Wickenburg, Arizona | | | | | 39 | 3.9 | 46 | NW | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.34 | 770.6 | 30.42 | 772.6 | 40 | 4.4 | 82 | N | 11 | 4.9 | | | 10s | | Calm | 0.04 | 1.0 | Cloudy | |
| Winnemucca, Nevada | 25.55 | 649.0 | 29.91 | 759.7 | 42 | 5.6 | 19 | SW | 28 | 12.5 | | 5k | 0 | SW | | 0 | 0 | Fair | |
| Wood's Holl, Mass | 30.54 | 775.7 | 30.58 | 776.7 | 35 | 1.7 | 70 | S | 16 | 7.2 | | | 10ks | | SW | 0 | 0 | Cloudy | |
| Yankton, Dakota | 29.05 | 737.9 | 30.43 | 772.9 | 28 | — 2.2 | 77 | SW | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Yuma, Arizona | 29.93 | 760.2 | 30.10 | 764.5 | 53 | 11.7 | 48 | W | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.69 | 728.7 | 30.12 | 765.0 | 52 | 11.1 | 79 | | | | | | | | | | | | J. B. Gordon. |
| Havana, Cuba, W. I | 30.20 | 767.1 | 30.25 | 768.3 | 73 | 22.8 | 49 | Calm | 0 | 0 | | 4k | 4ks | NE | NE | 0 | 0 | Cloudy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | | | | | | | | | | | | | | | | | | | J. mes Gall. |
| Medellin, Colombia, S. A | 25.25 | 690.5 | | | 66.5 | 19.2 | 75 | Calm | 0 | 0 | | 2ck | 1ks | | | 0 | 0 | | Thomas Herran. |
| Navassa, W. I | 29.98 | 761.5 | 30.06 | 763.5 | 76 | 24.4 | | NE | 25 | 11.2 | | | | | | 0 | 0 | Fair | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.03 | 762.8 | 30.03 | 762.8 | 78 | 25.6 | 80 | NE | | | 2 | | 8ks | NE | | 0.190 | 4.83 | Cloudy | C. J. Heijing |
| Santiago de Cuba, W. I | | | | | | | | | | | | | | | | | | | Robert Mason. |
| St. Thomas, W. I | | | | | | | | | | | | | | | | | | | G. O. Gellich. |
| York Factory, B. A | | | | | | | | | | | | | | | | | | | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m., Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,870 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,100. 7 ft., or 4,318.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m., Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,642 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,336.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.004 in.; Fort Davis, 4.06 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.69 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

## UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.19 | 766.8 | 54 | 12.2 | 54 | 12.2 | 67 | S | 28 | 12.5 | .... | ..... | 10 | ..... | S | 0 | 0 | ..... | ..... | Overcast..... | |
| Navy Yard, Pensacola, Fla. | 30.50 | 774.7 | 46 | 7.8 | 46 | 7.8 | 84 | N | 3 | 1.3 | .... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 30.52 | 775.2 | 65 | 18.3 | 25 | — 3.9 | 87 | SSW | 1 | 0.4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan.....* | 30.06‡ | 763.5‡ | ..... | ..... | 50 | 10.0 | 96 | NNE | ..... | ..... | 1 | ..... | 10n | ..... | N | 0.40 | 10.2 | ..... | ..... | Light rain ... | |
| Adams. Panama ..... | 30.00 | 762.0 | 78 | 25.6 | 77 | 25.0 | 91 | NW | ..... | ..... | 2 | ..... | 5 | ..... | N;W | ..... | ..... | ..... | ..... | Fair ..... | |
| Alaska. N. 25° 16′, W. 113° 03′..... | 30.24 | 768.1 | 62 | 16.7 | 60 | 15.6 | 82 | NW | ..... | ..... | 5 | ..... | 8 | ..... | SE | ..... | ..... | Long | NW | Hazy..... | |
| Alliance. Villafranca, France..... | 29.96‡ | 761.0‡ | ..... | ..... | 59 | 15.0 | 59 | SW | ..... | ..... | 0–1 | ..... | 7 | ..... | Calm | ..... | ..... | ..... | ..... | Pleasant.. ... | |
| Ashuelot, Hong-Kong, China. ..... | 29.98‡ | 761.5‡ | ..... | ..... | 52 | 11.1 | 79 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Drizzling.... | |
| Canonicus, New Orleans, La..... | 30.36 | 771.1 | 44 | 6.7 | 53 | 11.7 | 93 | N | ..... | ..... | 2 | ..... | 2 | ..... | N | ..... | ..... | ..... | ..... | Fair ..... | |
| Colorado, New York, N. Y..... | 30.53 | 775.4 | 35 | 1.7 | 34 | 1.1 | 100 | SE | 2 | 0.9 | ..... | ..... | 8 | ..... | E | 0 | 0 | ..... | ..... | Overcast..... | |
| Constitution, Lisbon, Portugal..... | 30.26‡ | 767.1‡ | ..... | ..... | 63 | 17.2 | 78 | NNE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Despatch, Constantinople, Turkey | 29.92‡ | 760.0‡ | ..... | ..... | 52 | 11.1 | 54 | NE | ..... | ..... | 2 | ..... | 8 | ..... | NE | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Franklin, Norfolk, Va..... | 30.61 | 777.5 | 61 | 16.1 | 40 | 4.4 | 91 | NNW | 7.2 | 3.2 | ..... | ..... | 10 | ..... | N | 0.2 | 5. | ..... | ..... | Cloudy..... | |
| Gettysburg, Genoa, Italy ..... | 29.90‡ | 759.4‡ | ..... | ..... | 59 | 15.0 | 94 | WSW | ..... | ..... | 1 | ..... | 5 | ..... | SW | 0 | 0 | Smooth | ..... | D. clouds.... | |
| Hartford, Montevideo, Uruguay... | 30.08 | 764.0 | 70 | 21.1 | 70 | 21.1 | 70 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Lackawana, Panama.....*... | 29.74‡ | 755.4‡ | ..... | ..... | 76 | 24.4 | 91 | NW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Michigan, Erie, Pa.....†... | 30.12 | 765.0 | ..... | ..... | 35 | 1.7 | 90 | S | ..... | ..... | 6 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monocacy. Shelpoo, China.....* | 30.18‡ | 766.6‡ | ..... | ..... | 40 | 4.4 | 82 | NNW | ..... | ..... | 3–5 | ..... | 10 | ..... | NNW | ..... | ..... | ..... | ..... | Squally..... | |
| Monongehela, Yokohama, Japan ....*.. | 29.97‡ | 761.2‡ | ..... | ..... | 51 | 10.6 | 72 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Heavy | Heavy | ..... | ..... | Drizzling.... | |
| New Hampshire, Port Royal, S. C..... | 30.48 | 774.2 | 45 | 7.2 | 44 | 6.7 | 92 | N | 10 | 4.5 | ..... | ..... | 10 | ..... | N | 0 | 0 | ..... | ..... | Misty..... | |
| Onward, Callao, Peru.....†... | 30.04 | 763.0 | ..... | ..... | 68 | 20.0 | 95 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | Long | W | Foggy..... | |
| Palos, Tientsin, China..... | 30.56 | 776.2 | 74 | 24.4 | 28 | — 2.2 | 66 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 39 | 3.9 | 91 | NW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Fair..... | |
| Pensacola, Talcahuano, Chili ..... | 29.98‡ | 761.5‡ | ..... | ..... | 60 | 15.6 | 94 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair ..... | |
| Powhatan, Key West, Fla..... | 30.28‡ | 769.1‡ | ..... | ..... | 77 | 25.0 | 84 | NE | ..... | ..... | 3 | ..... | 2 | ..... | NE | 0 | 0 | Smooth | NE | Fair..... | |
| Quinnebaug, Villafranca, France..... | 29.96‡ | 761.0‡ | ..... | ..... | 60 | 15.6 | 65 | SSE | ..... | ..... | 1 | ..... | 8 | ..... | N | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Ranger. Kobe, Japan.....*... | 30.03‡ | 762.8‡ | ..... | ..... | 67 | 19.4 | 79 | NW | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Raining ..... | |
| Richmond, Naples, Italy..... | 29.95‡ | 760.7‡ | ..... | ..... | 56 | 13.3 | 57 | S | ..... | ..... | 2 | ..... | 2 | ..... | S | 0 | 0 | Smooth | ..... | Fair ..... | |
| Rio Bravo, Brownsville, Texas..... | 30.21 | 767.3 | 64 | 17.8 | 63 | 17.2 | 100 | SE | ..... | ..... | 1 | ..... | 2 | ..... | S | ..... | ..... | ..... | ..... | Fair ..... | |
| Santee, Annapolis, Md... ..... | 30.57‡ | 776.5‡ | ..... | ..... | 31 | — 0.6 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Overcast..... | |
| Saratoga, Washington, D. C..... | 30.69 | 779.5 | ..... | ..... | 29 | — 1.7 | 100 | NNW | ..... | ..... | 1 | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Foggy ..... | |
| St. Louis, League Island, Pa..... | 30.44 | 773.2 | 62 | 16.7 | 34 | 1.1 | 79 | NE | 2 | 0.9 | ..... | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Misty..... | |
| Supply, N. 25° 46′, W. 69° 27′..... | 30.24‡ | 768.1‡ | ..... | ..... | 71 | 21.7 | 80 | NE | ..... | ..... | 6 | ..... | 5 | ..... | NE | ..... | ..... | Mod'ate | NE | Fair ..... | |
| Trenton. Villafranca, France..... | 29.94‡ | 760.5‡ | ..... | ..... | 64 | 17.8 | 83 | SE | ..... | ..... | 0–1 | ..... | 5 | ..... | S;E | 0 | 0 | None | ..... | Fair..... | |
| Tuscarora, Acapulco, Mexico..... | 30.00‡ | 762.0‡ | ..... | ..... | 77 | 25.0 | 77 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Wabash, Boston, Mass..... | 30.48‡ | 774.2‡ | ..... | ..... | 29 | — 1.7 | 89 | SW | 16 | 7.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Wyoming, N. 38° 47′, E. 26° 35′.. ..... | 29.87‡ | 758.7‡ | ..... | ..... | 53 | 11.7 | 93 | NW | ..... | ..... | 0–1 | ..... | 8 | ..... | NW | ..... | ..... | Smooth | NW | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From — | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |

### PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | |
| S. S. Colima, N. 10° 05, W. 86° 24'...† | | 30.00‡ | 762.0‡ | 78 | 25.6 | 91 | NE | | | 4–5 | | 4 | | SW | 0 | Mod'ate | NNE | D. clouds | Capt. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota, Capt. Morse | | | | | | | | | | | | | | | | | | | |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Granada, Capt. Austin, N. 11° 52', W. 87° 19'...† | | 30.15‡ | 765.5‡ | 80 | 26.7 | ?? | E | | | 5 | | 0 | | | 0 | Short | ENE | Clear | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation, no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

### WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

### OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, Hong-Kong, China...* | | 29.78‡ | 756.4‡ | 55 | 12.8 | 100 | NE | | | 3 | | ks | | NE | | Smooth | NE | Misty | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 37° 30', E. 168° 00'...† | | 29.91‡ | 759.7‡ | 48 | 8.9 | ?? | N | | | 6 | | k | | NE | Blank | High | N | Squally | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

### NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andreesen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 26° 10', W. 38° 50' | | 30.80‡ | 769.6‡ | 79.0 | 26.1 | 70 | SSW | | | 4 | | 5 | | | | Mod'ate | NNW | Fine | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 5; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 42° 31', W. 46° 43' | | 30 39‡ | 771.9‡ | 82 | 0.0 | | N | | | 7 | | 9 | | N | 0 | Mod'ate | N | Cloudy. | Captain Sargent<br>Wm. Shackford, Chief Officer. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
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| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
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| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. | | | | | | | | | | | | | | | | | | | |
| **MARINE SERIES.** (Miscellaneous. | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
| NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. | | | | | | | | | | | | | | | | | | | |

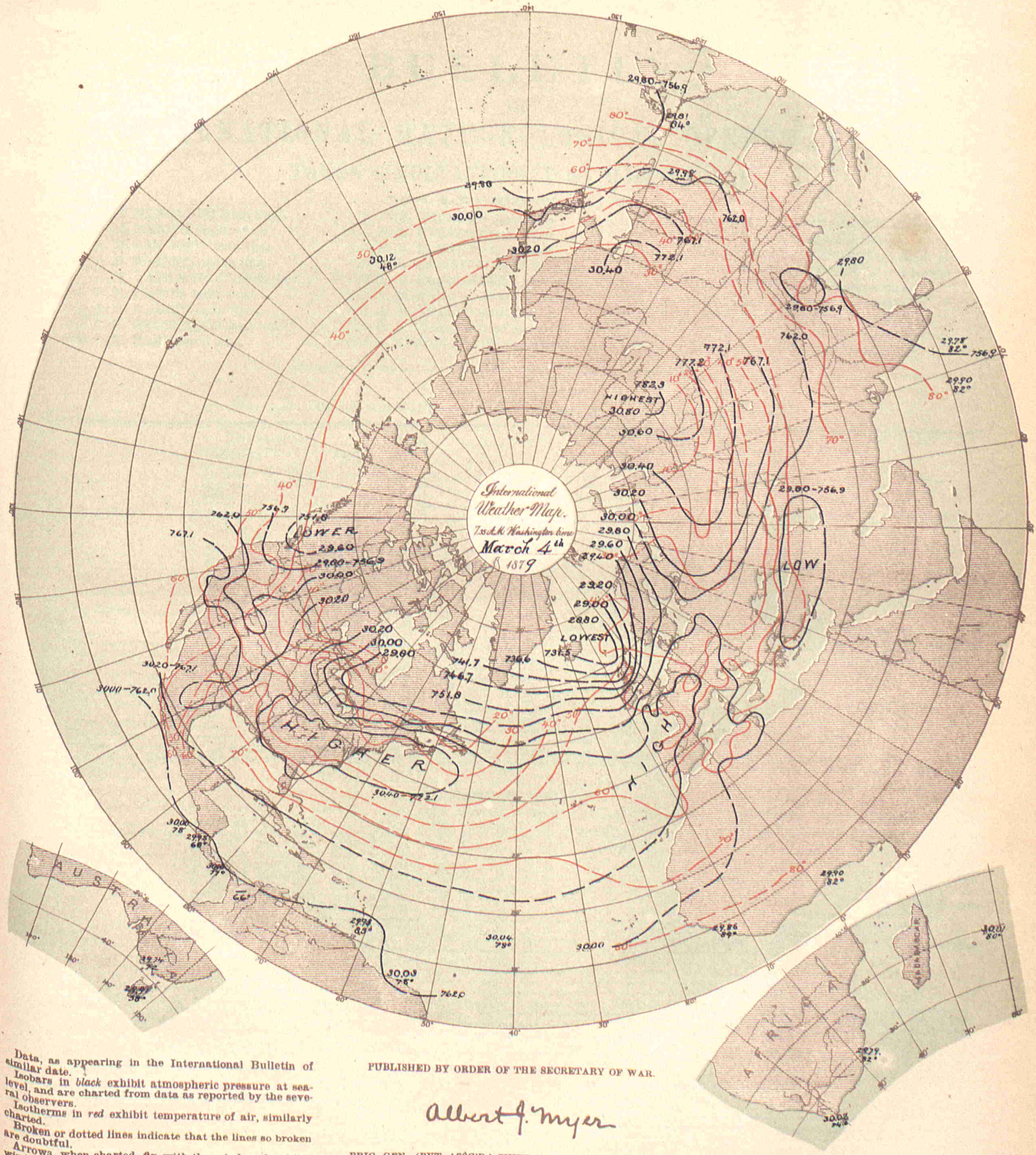
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg'd,) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASS'G'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

## OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 5, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 30.24 | 768.1 | 59.0 | 15.0 | 82 | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | |
| Nemours | ..... | ..... | 30.33 | 770.4 | 62.2 | 16 8 | 83 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Kesxuche. |
| Algiers | ..... | ..... | 30.23 | 767.8 | 57.6 | 14.2 | 80 | W | ..... | ..... | 3 | ..... | 0 | ..... | ..... | Inap. | Inap. | Clear | Tourillere. |
| La Calle | ..... | ..... | 30.09 | 764.3 | 57.0 | 13.9 | 71 | NW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.130 | 3.3 | Covered | Foufrede. |
| Tunis | ..... | ..... | 29.93 | 760.3 | 55.0 | 12.8 | 74 | NNW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | 0.303 | 7.7 | Very cloudy | Jacques. |
| Sfax | ..... | ..... | 30.13 | 765.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 30.19 | 766.9 | 51.8 | 11.0 | 48 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Herbin. |
| Tebessa | ..... | ..... | 30.17 | 766 3 | 41.4 | 5.2 | 49 | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Watrin. |
| Geriville | ..... | ..... | 30.11 | 764.7 | 57.7 | 14.3 | 95 | NE | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Brugniaux. |
| Laghouat | ..... | ..... | 30.17 | 766.3 | 57.6 | 14.2 | 88 | NW | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bertrand. |
| Biskra | ..... | ..... | 30.15 | 765.7 | 64.6 | 18.6 | 36 | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.62 | 752.3 | 30.19 | 766.8 | 41.2 | 5.1 | 71 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stoair |
| Cracow, I. R. Observatory | 29.47 | 748.4 | 30.27 | 768.8 | 35.6 | 2.0 | 75 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski |
| Eperies | 29.25 | 742.9 | 30.17 | 766.3 | 36.0 | 2.2 | 65 | N | ..... | ..... | 2 | ..... | 10cl;s | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.92 | 734 6 | 30.22 | 767.5 | 41.5 | 5.5 | 54 | NW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.61 | 726.6 | 30.10 | 764.4 | 36.3 | 2.4 | 75 | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.035 | 0.90 | ..... | Prof. A. Gottschling. |
| Kremsmünster | 28.88 | 733.5 | 30.27 | 768.9 | 39.6 | 4.2 | 53 | WNW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.039 | 1.0 | ..... | Prof. C. Wagner. |
| Lemberg | 29.10 | 739.2 | 30.14 | 765.5 | 33.8 | 1.0 | 81 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.016 | 0.4 | ..... | Dr. T. Stanecki. |
| Pola | 30.04 | 762.9 | 30.15 | 765.8 | 48.6 | 9.2 | 51 | W | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.64 | 752.8 | 30.11 | 764.8 | 43.2 | 6.2 | 59 | NW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dense fog | Karl Stancel. |
| Trieste | 30 08 | 763.9 | 30.18 | 766.5 | 50.0 | 10.0 | 43 | N | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Almost clear | P. Busin. |
| Vienna | 29.52 | 749.7 | 30.27 | 768.8 | 35.4 | 1.9 | 73 | NNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.051 | 1.3 | Snowing | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Royal Observatory |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. E. de Cae. |
| Maeseyck | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Pierrot |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:9, instead of 0:54, p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 1—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.24 | 742.7 | 29.34 | 745.2 | 48.9 | 9.4 | ..... | S | 16 | 7.2 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | D. clouds | W. Boswell. |
| Ardrossan | 29.48 | 748.8 | 29.50 | 749.3 | 46 | 7.8 | ..... | WSW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.61 | 752.1 | 46.0 | 7.8 | ..... | W | 18 | 8.0 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Squally | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.78 | 756.4 | 51.3 | 10.7 | ..... | SSW | 22 | 9.8 | ..... | ..... | 10? | ..... | ..... | ..... | ..... | Overcast | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.79 | 756.7 | 47.2 | 8.4 | ..... | SSW | 54 | 24.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Squally | Thomas Mackereth. |
| Bradford, Yorkshire | 29.31 | 744.5 | 29.71 | 754.6 | 52.1 | 11.2 | ..... | W | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0.01 | 0.3 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.90 | 759.4 | 29.93 | 760.2 | 81.5 | 27.5 | ..... | NE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Surgener, A. H. C. |
| Cambridge, Observatory | ..... | ..... | 29.96 | 761.0 | 54.5 | 12.5 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | H. Todd. |
| Cardington | ..... | ..... | 29.93 | 760.2 | 55.0 | 12.8 | ..... | WSW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.92 | 760.0 | 30.06 | 763.5 | 50.3 | 10.2 | ..... | SW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Corpl. Daly, R. E. |
| Dartmoor | 28.09 | 713.5 | 29.57 | 751.1 | 42.0 | 5.6 | ..... | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Rain & fog | Alexander Watt. |
| Donaghadee | 29.55 | 750.6 | 29.59 | 751.6 | 50 | 10.0 | ..... | WSW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 30.06 | 763.5 | 30.08 | 764.0 | 44 | 6.7 | ..... | WSW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Rain & fog | J. Costello. |
| Falmouth, Observatory | 29.83 | 757.7 | 30.06 | 763.5 | 52.3 | 11.3 | ..... | SW | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| Fort Napier, (Natal) | 27.56 | 700.0 | 29.89 | 759.2 | 77.5 | 25.3 | ..... | SE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.61 | 752.1 | 29.84 | 757.9 | 89 | 31.7 | ..... | S? | ..... | ..... | 0? | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.68 | 753.9 | 46 | 7.8 | ..... | WSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.17 | 766.3 | 30.22 | 767.6 | 62.1 | 16.7 | ..... | E | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.28 | 743.7 | 29.48 | 748.8 | 46.0 | 7.8 | ..... | W | ..... | ..... | 8 | ..... | 10 | ..... | ..... | ..... | ..... | Rain-squalls | D. G. Maclean. |
| Great Yarmouth | 29.94 | 760.5 | 29.95 | 760.7 | 52 | 11.1 | ..... | SW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | Misty | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.86 | 758.4 | 30.04 | 763.0 | 50.9 | 10.5 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff, for G. B. Airy |
| Guernsey | 29.94 | 760.5 | 30.17 | 766.3 | 48.5 | 9.2 | ..... | WSW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F.R.S |
| Helston | 30.04 | 763.0 | 30.16 | 766.1 | 52 | 11.1 | ..... | SW | ..... | ..... | 4 | ..... | 1c | ..... | ..... | 0.5 | 13. | Fine | M. P. Moyle. |
| Holyhead | 29.68 | 753.9 | 29.73 | 755.1 | 48 | 8.9 | ..... | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | John Tilston. |
| Jersey | 29.93 | 760.2 | 30.23 | 767.8 | 47.1 | 8.4 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | J. Fisher. |
| Kew, Observatory | 30.00 | 762.0 | 30.03 | 762.8 | 51.0 | 10.6 | ..... | SW | 22 | 9.8 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds | The Meteorological Of. |
| Leicester, Museum | 29.64 | 752.8 | 29.90 | 759.4 | 52.0 | 11.1 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Wm. J. Harrison, F.G.S |
| Malta, (Mediterranean) | 29.84 | 757.9 | 29.92 | 760.0 | 63 | 11.7 | ..... | NE | ..... | ..... | 2 | ..... | 10n | ..... | ..... | ..... | ..... | Raining | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.22 | 742.2 | 29.31 | 744.6 | 43 | 6.1 | ..... | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.25 | 768.3 | 71.0 | 21.7 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.67 | 753.6 | 29.85 | 758.2 | 53.3 | 11.8 | ..... | SSW | ..... | ..... | 6 | ..... | 10d | ..... | WSW | 0 | 0 | Overcast | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.35 | 745.5 | 29.87 | 758.7 | 51.0 | 10.6 | ..... | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.98 | 761.5 | 53 | 11.7 | ..... | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | H. E. Bellamy. |
| Plymouth | 30.00 | 762.0 | 30.08 | 764.0 | 50.3 | 10.2 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Merrifield. |
| Roche's Point | 29.79 | 756.7 | 29.84 | 757.9 | 51 | 10.6 | ..... | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | W. Kennedy. |
| Saint Ann's Head | 29.74 | 755.4 | 29.91 | 759.7 | 48 | 8.9 | ..... | SSW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John C. Walker. |
| Sandwick Manse, (Orkneys | ..... | ..... | 29.28 | 743.7 | 36.8 | 2.7 | ..... | ESE | 29 | 13.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Dr. H skins. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 29.87 | 758.7 | 43.8 | 6.6 | ..... | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | W. H. Lyne. |
| Sheffield | 29.50 | 749.3 | 29.78 | 756.4 | 52.6 | 11.4 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.02 | 0.5 | Overcast | W. F. Cooper. |
| Silloth Rectory | 29.56 | 750.8 | 29.59 | 751.6 | 47.2 | 8.4 | 94 | SW | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0.250 | 6.35 | Raining | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.32 | 744.7 | 29.73 | 755.1 | 50.5 | 10.3 | ..... | SSW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Squally | Rev. S. J. Perry. |
| Strathfield Turgiss | 29.84 | 757.9 | 30.05 | 763.3 | 53.7 | 12.1 | ..... | SW | ..... | ..... | 2-3 | ..... | 9 | ..... | ..... | ..... | ..... | Squally | C.H.Griffith, F.M.S. |
| Thurso | 29.20 | 741.7 | 29.27 | 743.4 | 40 | 4.4 | ..... | ESE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | John Trotter. |
| Truro, Royal Institution | 29.99 | 761.7 | 30.05 | 763.3 | 55 | 12.8 | ..... | SW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | W. Newcombe. |
| Valencia, Observatory | 29.82 | 757.4 | 29.84 | 757.9 | 46.0 | 7.8 | ..... | WNW | 14 | 6.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.91 | 759.7 | 29.95 | 760.7 | 79.5 | 26.4 | 56 | S | 7 | 3.1 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Lightning | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.75 | 755.6 | 65.0 | 18.3 | 77 | SE | ..... | ..... | 3 | ..... | 9k | ..... | ..... | ..... | ..... | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.47 | 748.5 | 56.2 | 13.4 | ..... | SW | ..... | ..... | 7 | ..... | 10ks | ..... | ..... | 0.08 | 2.0 | Showery | Andrew Gibb. |
| Mauritius, Observatory | 29.78 | 756.4 | 29.97 | 761.2 | 81.2 | 27.3 | 65 | E | 11.0 | 4.9 | ..... | 2 | 4 | ..... | E | 0 | 0 | Fine | C. Meldrum. |
| Melbourne, Observatory | 29.63 | 752.6 | 29.72 | 754.9 | 77.0 | 25.0 | 56 | NNW | 3 | 1.3 | ..... | ..... | 9 | E | ..... | 0.03 | 0.8 | ..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 29.20 | 741.7 | 46 | 7.8 | ..... | W | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0.4 | 10. | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.48 | 748.8 | 36 | 2 2 | ..... | NE | ..... | ..... | 4 | 7 | 3 | Calm | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; Freetown reduced to freezing but not to sea-level. Amount of cloudiness for Holyhead by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day,) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day,) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 1—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 35° 54', E. 14° 30' | ..... | ..... | 29.80‡ | 756.9‡ | 56 | 13.3 | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Capt. W. J. L. Wharton. |
| Brig Alliance, N. 13° 14', W. 44° 47' | ..... | ..... | 29.99‡ | 761.7‡ | 75.3 | 24.1 | E | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Raining | Capt. W. Scott. |
| S. S. Amanda, N. 13° 12', E. 50° 30' | ..... | ..... | 29.85‡ | 758.2‡ | 80 | 26.7 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | Capt. B. Boyes. |
| Barque Belle Isle, N. 23° 15', W. 85° 05' | ..... | ..... | 30.23 | 767.8 | 77 | 25.0 | NE | ..... | ..... | 5 | ..... | 3 | ..... | ..... | 4 | NE | D. clouds | Capt. A. J. Brown. |
| Ship British Commodore, N. 43° 40', W. 36° 20' | ..... | ..... | 30.41 | 772.4 | 49 | 9.4 | WNW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 4 | NW | D. clouds | Capt. J. W. Thorne. |
| —— City of Agra, S. 1° 05', W. 28° 21' | ..... | ..... | 29.94‡ | 760.5‡ | 79.8 | 26.6 | NNE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Capt. Thos. Young. |
| Barque Commewyne, N. 16° 34', W. 56° 58' | ..... | ..... | 30.02‡ | 762.5‡ | 83.6 | 28.6 | Calm | ..... | ..... | 0 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | Capt. A. Buchan. |
| —— Denbighshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Murdoch. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole, N. 41° 9' W. 16° 39' | ..... | ..... | 30.35‡ | 770.9‡ | 58.1 | 14.5 | SSW | ..... | ..... | 5 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven, N. 8° 20', E. 69° 49' | ..... | ..... | 29.78‡ | 756.4‡ | 82 | 27.8 | N | ..... | ..... | 5 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Capt. C. W. Pearson. |
| S. S. Wyberton, N. 10° 28', E. 65° 49' | ..... | ..... | 29.90 | 759.4 | 81.5 | 27.5 | NE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 2 | ..... | D. clouds | Capt. W. R. McMontry. |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.27 | 667.2 | 29.99 | 761.7 | 64.4 | 18.0 | 85 | NE | ..... | ..... | 2 | 2c | ..... | ..... | ..... | Inap. | Inap. | ..... | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.88 | 758.9 | 29.93 | 760.1 | 36.3 | 2.4 | 96 | SSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 29.85 | 758.1 | 29.87 | 758.6 | 35.8 | 2.1 | 96 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | |
| Godthaab, (Greenland) | 28.85 | 732.9 | 28.90 | 734.0 | 8.6 | —13.0 | 100 | NW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Faröe) | 29.48 | 748.9 | 29.52 | 749.8 | 33.1 | 0.6 | 93 | ESE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | |
| Vestervig | 29.59 | 751.5 | 29.76 | 755.8 | 36 7 | 2.6 | 93 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.76 | 755.8 | 30.31 | 769.8 | 45.0 | 7.2 | 94 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Collignon, Director. |
| Amiens, Normal School | 30.21 | 767.3 | 30.32 | 770.1 | 45.0 | 7.2 | 74 | S | ..... | ..... | 1 | ..... | 5 | ..... | NE | 0 | 0 | Cloudy | Bonvallet, Director. |
| Avignon, Normal School | 30.11 | 764.8 | 30.19 | 766.8 | 54.1 | 12.3 | 33 | NNW | ..... | ..... | 8 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | M. Giraud, Director. |
| Bar-sur-Seine | 29.73 | 755.2 | 30.30 | 769.7 | 47.7 | 8.7 | 65 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | G. Saillard, Director. |
| Beauvais, Normal School | 29.97 | 761.3 | 30.27 | 768.8 | 49.1 | 9.5 | 71 | SW | ..... | ..... | 2 | ..... | 10 | ..... | WSW | 0 | 0 | Covered | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.41 | 747.1 | 30.34 | 770.7 | 44.1 | 6.7 | 68 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0.047 | 1.2 | Clear | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.47 | 748.4 | 30.39 | 771.9 | 43.8 | 6.6 | 85 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Mariot, Director. |
| Bourges, Normal School | 29.76 | 755.8 | 30.32 | 770.2 | 47.8 | 8.8 | 84 | NW | ..... | ..... | 1 | ..... | 1 | NW | NW | 0 | 0 | Clear | A. Waquet, Director. |
| Brest, Naval Observatory | 29.92 | 760.0 | 30.17 | 766.2 | 52.5 | 11.4 | 86 | SW | ..... | ..... | 3 | ..... | 10 | ..... | SW | 0.010 | 0.25 | Misty | M. de Rermarec, Director |
| Carcassonne, Normal School | 29.89 | 759.1 | 30.31 | 769.8 | 54.0 | 12.2 | 63 | W | ..... | ..... | 1 | ..... | 2 | NW | W | 0 | 0 | Slightly cl'dy | September, Director. |
| Caen, Normal School | 30.17 | 766.3 | 30.24 | 768 2 | 50.0 | 10 | 74 | SW | ..... | ..... | 2 | ..... | 5 | ..... | SW | 0 | 0 | Cloudy | M. Lair, Director. |
| Chartres, Normal School | 29.65 | 753.2 | 30.24 | 768.2 | 41.0 | 5 | 91 | W | ..... | ..... | 1 | ..... | 9 | ..... | SE | 0 | 0 | ..... | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 30.00 | 761.9 | 30.32 | 770.2 | 47.1 | 8.4 | 76 | WSW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.91 | 734.4 | 30.30 | 769.5 | 49.5 | 9.7 | 46 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Alluard, Director. |
| Commercy, Normal School | 29.41 | 747.1 | 30.30 | 769.6 | 43.2 | 6.2 | 79 | WNW | ..... | ..... | 2 | ..... | 5kn | ..... | WNW | 0 | 0 | Cloudy | Dr. Coulet, Director |
| Commune de Grésque* | 29.05 | 737.8 | 30.19 | 766.8 | 53.6 | 12.0 | 22 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Kina, Director. |
| Grenoble, Normal School | 29.51 | 749.5 | 30.30 | 769.5 | 47.8 | 8.8 | 67 | WNW | ..... | ..... | 2 | ..... | 1ck | N | ..... | 0 | 0 | Slightly cl'dy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 30.13 | 765.4 | 30.35 | 771.0 | 50.0 | 10.0 | 72 | W | ..... | ..... | 1 | ..... | 5 | ..... | W | 0 | 0 | Cloudy | Mouillot, Director |
| Le Mans, Normal School | 30.00 | 762.1 | 30.32 | 770.0 | 47.3 | 8.5 | 89 | W | ..... | ..... | 2 | ..... | 8 | ..... | W | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.41 | 746.9 | 30.37 | 771.4 | 38.3 | 3.5 | 93 | S | ..... | ..... | 1 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | Baudry, Director. |
| Lorient, Naval Observatory | 30.21 | 767.3 | 30.31 | 769.8 | 51.8 | 11.0 | 97 | SW | ..... | ..... | 4 | ..... | ..... | ..... | SW | 0 | 0 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Mirecourt, Normal School | 29.26 | 743.3 | 30.37 | 771.5 | 44.6 | 7 | 69 | N | ..... | ..... | 1 | ..... | n | ..... | S | 0 | 0 | ..... | M. Barbier, Director. |
| Nîmes, Normal School | 29.93 | 761.5 | 30.18 | 766.6 | 59.7 | 15.4 | 21 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Boyer, Director. |
| Privas, Normal School | 29.18 | 741.2 | 30.26 | 768.6 | 51.8 | 11 | 52 | N | ..... | ..... | 3 | ..... | c | ..... | N | N | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 25.52 | 648.1 | ..... | ..... | 31.5 | — 0.3 | 100 | N | ..... | ..... | 2 | 2c | ..... | ..... | ..... | 0 | 0 | Slightly cl'dy | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.34 | 770.5 | 30.37 | 771.3 | 52.7 | 11.5 | 73 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Lt. Decante, Director. |
| Rouen, Normal School | 30.17 | 766.2 | 30.25 | 768.4 | 49.1 | 9.5 | 70 | SSW | ..... | ..... | 1 | ..... | 8 | ..... | SW | 0 | 0 | Very cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 30.20 | 767.1 | 30.28 | 767.9 | 50.7 | 10.4 | 74 | SW | ..... | ..... | 3 | ..... | 5 | SW | SW | 0 | 0 | Cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 30.13 | 765.2 | 30.20 | 769.4 | 46.2 | 7.9 | 75 | SW | ..... | ..... | 2 | ..... | ..... | ..... | SW | 0 | 0 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 29.81 | 744.4 | 30.41 | 772.4 | 51.8 | 11 | 62 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Huguet, Director. |
| Versailles Observatory | 29.78 | 756.4 | 30.27 | 768.9 | 44.6 | 7.0 | ..... | WSW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.63 | 752.7 | 30.36 | 771.1 | 50.0 | 10 | 59 | SE | ..... | ..... | 1 | ..... | 2 | ..... | S | 0 | 0 | Slightly cl'dy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.92 | 760.1 | 29.95 | 760.8 | 74.1 | 23.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1.02 | 26. | ..... | L'Abbé Marchesi. |
| Lyons Obs'y, (Park Station) | 29.69 | 754.0 | 30.32 | 770.1 | 49.3 | 9.6 | 54 | N | ..... | ..... | 1 | ..... | 2s | ..... | ..... | 0 | 0 | ..... | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 24.99 | 634.8 | 30.31 | 769.8 | 42.8 | 6.0 | 49 | WNW | 7.4 | 3.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | 30.16 | 766.0 | 56.8 | 13.8 | 58 | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 30.00 | 762.0 | ..... | ..... | 46.5 | 7.5 | 77 | WSW | ... | ..... | 8 | ..... | 10 | ..... | WSW | 0 | 0 | ..... | Marié Davy, Director. |
| Perpignan | 30.13 | 765.4 | 30.24 | 768.1 | 58.6 | 14.8 | 43 | NW | 16.8 | 7.5 | ..... | ..... | 1 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.65 | 575.4 | ..... | ..... | 34.2 | 1.2 | ..... | N | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | Gen'l de Nansouty. |
| Toulouse, Observatory | 29.63 | 752.7 | 30.37 | 771.3 | 50.0 | 10.0 | 69 | NW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | M. Mercadier Julier. |
| Tours | 30.12 | 765.1 | 30.32 | 770 1 | 48.8 | 8.8 | 67 | SW | ..... | ..... | 1 | ..... | 10 | ..... | WSW | 0 | 0 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.41 | 772.4 | 30.43 | 773.0 | 35.4 | 1.9 | 82 | NNE | 4.9 | 2.2 | ..... | cs | 7k | ..... | N | 0.169 | 4.3 | Cloudy | Marc Dechevrens, S. J. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Grenasque on the scale 0 to 4 and Brest on the scale 0 to 10; Mirecourt apparently gives cloud direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grésque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12. | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.36 | 745.6 | 30.20 | 767.1 | 38.5 | 3.6 | 80 | ESE | | | 3 | | 7 | SE | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 30.01 | 762.2 | 30.19 | 766.7 | 41.0 | 5.0 | 71 | S | | | 1 | | 8 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.73 | 755.1 | 30.26 | 768.7 | 35.2 | 1.8 | 68 | SSW | | | 2 | | 2 | | | 0.045 | 1.13 | | Royal University Obs'y |
| Carlsruhe | 29.84 | 757.9 | 30.28 | 769.1 | 44.4 | 6.9 | 67 | S | | | 2 | | 10 | NW | | 0.031 | 0.8 | Light rain | Albert Senx. |
| Cassel | 29.60 | 751.8 | 30.21 | 767.3 | 40.8 | 4.9 | 81 | SE | | | 2 | | 10 | W | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.98 | 761.6 | 30.15 | 765.7 | 49.3 | 9.6 | 76 | SW | | | 4 | | 10 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.90 | 759.5 | 30.28 | 769.2 | 43.3 | 6.3 | | SSW | | | 2 | | 10 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.84 | 732.5 | 30.24 | 768.2 | 40.3 | 4.6 | 51 | SE | | | 2 | | 10 | S | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 30.00 | 762.1 | 30.08 | 763.9 | 39.6 | 4.2 | 97 | SW | | | 2 | | 10 | | | 0.004 | 0.1 | Gloomy | Captain F. Hegemann. |
| Kiel | 30.00 | 762.0 | 30.02 | 762.5 | 38.7 | 3.7 | 94 | SW | | | 3 | | 10 | | | 0.008 | 0.20 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.08 | 764.0 | 30.17 | 766.2 | 35.6 | 2.0 | 82 | SW | | | 3 | | 4 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 30.09 | 764.3 | 36.7 | 2.6 | | S | | | 2 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.79 | 756.7 | 30.23 | 767.8 | 41.4 | 5.2 | 65 | SSW | | | 2 | | 10 | | | | | Sprinkling | Prof. Bruhns, Privy Counsellor. |
| Memel, Naval School | 30.10 | 764.5 | 30.15 | 765.7 | 35.2 | 1.8 | 85 | SSW | | | 2 | | 10n | | | | | | Skalweit. |
| Neufahrwasser | 30.15 | 765.8 | 30.17 | 766.2 | 37.8 | 3.2 | 76 | SW | | | 3 | | 7 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.97 | 761.3 | 30.28 | 769.0 | 37.2 | 2.9 | 79 | SSW | | | 2 | | 9 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.76 | 755.9 | 30.32 | 770.2 | 47.5 | 8.6 | 69 | S | | | 3 | | 10 | WSW | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 29 32 | 744.7 | 30.25 | 768.3 | 43.2 | 6.2 | 67 | SW | | | 1 | | 9 | W | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | | | | | | | | | | | | | | | | | | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.73 | 729.8 | 30.31 | 769.6 | 38.3 | 3.5 | 72 | Calm | 0 | 0 | | | 10 | | | 0 | 0 | | Dr. Van Bebber. |
| Wustrow, Naval School | 30.01 | 762.2 | 30.03 | 762.8 | 35.8 | 2.1 | 94 | SSW | | | 4 | | 10s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.50 | 749.3 | 29.90 | 759 4 | 52.0 | 11.1 | | NE | | | 2.0 | | | | | | | Covered | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Deesa | 29.40 | 746.8 | 29.87 | 758.8+ | 83.8 | 28.8 | 21 | NNW | 10.2 | 4.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.79 | 756.6 | 29.83 | 757.6 | 79.0 | 26.1 | 62 | WNW | 16 | 7.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.15 | 740.4 | 29.90 | 759.6 | 72.8 | 22.7 | 24 | NW | 3.3 | 1.5 | | | 3 | | | 0 | 0 | D. clouds | |
| Belgaum | 27.30 | 693.4 | 29.79 | 756.7 | 85.1 | 29.5 | 45 | W | 8.0 | 3.6 | | | 1 | | ESE | 0 | 0 | | |
| Roorkee | 29.92 | 734.6 | 29.84 | 757.8 | 69.8 | 21.0 | 48 | Calm | 3.3 | 1.5 | | | 2 | | | 0 | 0 | D clouds | |
| Agra | 29.33 | 744.9 | 29.90 | 759.3 | 77.7 | 25.4 | 23 | W | | | | | 3 | | W | 0 | 0 | | |
| Nagpur | 28.82 | 732.0 | 29.86 | 758.4 | 81.6 | 27.6 | 26 | Calm | 2.4 | 1.1 | | | | | | 0 | 0 | Blue sky | |
| Lucknow | 29.48 | 723.5 | 29.87 | 758.7 | 71.8 | 22.1 | 23 | WNW | 3.1 | 1.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.57 | 751.1 | 29.89 | 759.2 | 72.7 | 22.6 | 35 | Calm | 5.1 | 2.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.68 | 754.0 | 29.87 | 758.6 | 76.5 | 24.7 | 44 | W | 2.4 | 1.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.84 | 707.0 | 29.88 | 758.8 | 71.6 | 22.0 | 15 | W | 11.2 | 5.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.78 | 756.3 | 29.86 | 758.4 | 79.8 | 26.6 | 35 | SSE | 2.0 | 0.9 | | | | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.84 | 757.8 | 29.86 | 758.4 | 75.2 | 24.0 | 37 | NW | 2.0 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.43 | 747.5 | 29.82 | 757.5 | 74.9 | 23.8 | 23 | W | 3.2 | 1.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.77 | 756.0 | 29.86 | 758.4 | 79.4 | 26.3 | 40 | Calm | 4.2 | 1.9 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.60 | 749.2 | 29.84 | 757.9 | 71.3 | 21.8 | 67 | NNE | 4.5 | 2.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.50 | 724.9 | 29.88 | 759.0 | 75.8 | 24.3 | 80 | Calm | 1.6 | 0.7 | | | 0 | | | 0 | 0 | Blue sky | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,851 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instru'tal error and temperature. Inches. | Barometer. Corrected for instru'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.74 | 755.5 | 30.17 | 766,2 | 47.8 | 8.8 | 31 | Calm | 0 | 0 | | | 0 | | | 0 | 0 | | Prof. Giovanni Clodig. |
| Milan | 29.65 | 753.1 | 30.18 | 766.6 | 47.1 | 8.4 | 63 | E | | | 2 | | 5 | NE | | 0 | 0 | | Prof. Schiaparelli. |
| Padua | 30.08 | 763.9 | 30.19 | 766.8 | 47.3 | 8.5 | 56 | ESE | 2.5 | 1.1 | | | 0 | S | | 0 | 0 | | Prof. Dott. Lorenzoni |
| Moncalieri | 29.22 | 742.3 | 30.16 | 766.0 | 48.2 | 9.0 | 54 | S | 2.5 | 1.1 | | | 1 | ENE | | 0 | 0 | | Prof. P. F. Denza. |
| Genoa | 29.94 | 760.6 | 30.14 | 765.6 | 54.1 | 12.3 | 28 | NW | 3.8 | 1.7 | | | 6 | NW | | 0 | 0 | | Prof. G. M. Garibaldi. |
| Mondovi | 28.21 | 716.5 | 30.17 | 766.4 | 44.1 | 6.7 | 68 | NE | | | 2 | | 2 | N | | 0 | 0 | | Prof. D. C. Bruno. |
| Pesaro | 30.13 | 765.3 | 30.18 | 766.6 | 41.9 | 5.5 | 89 | W | 11.2 | 5.0 | | | 10 | | | 0 | 0 | | Prof. Luigi Guidi. |
| Florence | 29.88 | 759.0 | 30.15 | 765.8 | 52.2 | 11.2 | 38 | NE | | | 4 | | 1 | NE | | 0 | 0 | | Cav. F Meucci |
| Leghorn | 30.02 | 762.5 | 30.11 | 764.7 | 53.6 | 12.0 | 31 | NE | | | 4 | | 2 | | | 0 | 0 | | Prof. P. Monte. |
| Rome | 29.86 | 758.5 | 30.04 | 763.1 | 54.9 | 12.7 | 33 | NE | 3.1 | 1.4 | | | 4 | | | 0.071 | 1.8 | | Prof. P. S. Ferrari. |
| Lecce | 29.72 | 755.0 | 29.98 | 761.6 | 48.2 | 9.0 | 34 | NNE | 24.8 | 11.1 | | | 9 | N | | 0 | 0 | | Prof. C. De Giorgi. |
| Cosenza | 29.08 | 738.5 | 29.98 | 761.5 | 50.7 | 10.4 | 72 | NW | 0.7 | 0.3 | | | 6 | | | 0 | 0 | | Prof. D. Conti. |
| Cagliari | 29.81 | 757.1 | 30.00 | 762.1 | 56.5 | 13.6 | 54 | NW | | | 2 | | 7 | E | | 0 | 0 | | Prof. A. Pacinotti. |
| Palermo | 29.69 | 754.2 | 29.95 | 760.7 | 48.9 | 9.4 | 77 | NE | 7.4 | 3.3 | | | 10 | | | 0.008 | 0.2 | | Prof. G. Cacciatore. |
| Syracuse | 29.88 | 758.9 | 29.95 | 760.8 | 52.0 | 11.1 | 73 | SSE | 17.4 | 7.8 | | | 10 | E | | 0.028 | 0.7 | | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.48 | 748.9 | 30.08 | 763.9 | 60.5 | 10.3 | 38 | NE | 6.3 | 2.8 | | | 8 | | | 0 | 0 | | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.00 | 762.0 | 30.02 | 762.5 | 44.5 | 6.9 | 70 | NNE | 7.5 | 3.4 | | | 10s | | | 0.040 | 1.02 | Cloudy | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.84 | 757.9 | 30.05 | 763.3 | 46.4 | 8.6 | 75 | N | 12.0 | 5.4 | | | 10s | | NE | 0.090 | 2.29 | Cloudy | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.77 | 756.1 | 29.84 | 757.9 | 46.7 | 8.2 | 97 | NNE | 9.7 | 4.3 | | | 10n | | N | 1.015 | 25.78 | Drizzling | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | | | | | | | | | | | | | | | | | | | P. Ceballos. |
| Guadalajara | 25.18 | 639.4 | 30.30 | 769.5 | 42.8 | 6.0 | 54 | Calm | | | 0 | 0 | 0 | | | 0 | 0 | Clear | Prof. L. Peres. |
| Leon | 24.55 | 623.6 | 30.21 | 767.5 | 52.0 | 11.1 | 77 | Calm | | | 0 | 0 | 0 | | | 0 | 0 | Clear | Prof. M. Leal |
| Mexico, Central Obs'y | 23.17 | 588.3 | 30.39 | 771.8 | 42.8 | 6.0 | 87 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | | The Staff. |
| Pabellon, (Aguascalientes) | | | | | 50.5 | 10.3 | 80 | Calm | | | 0 | 0 | 0 | | | 0 | 0 | Clear | M. V. de Leon, M. E. |
| Tlacotalpam | 30.22 | 767.5 | 30.23 | 767.8 | 66.7 | 19.3 | 86 | WNW | | | 2 | 3 | 3 | E | SE | 1.111* | 28.5* | ½ cloudy | M. M. Cházaro. |
| San Luis Potosi | 24.32 | 616.1 | 30.28 | 769.0 | 43.0 | 6.1 | 21 | E | | | 1 | 0 | 1 | | E | 0 | 0 | Clear | G. Barroeta, M. D. |
| Vera-Cruz | | | | | | | | | | | | | | | | | | | Prof. J. Rossell. |
| Zacatecas | | | | | | | | | | | | | | | | | | | |
| Puebla, (Catholic Institute) | 23.46 | 595.8 | 30.22 | 767.6 | 39.2 | 4.0 | 42 | NE | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | | | | | | | | | | | | | | | | | | | M. V. de Leon, C. E. |
| Colima | 28.48 | 722.3 | 30.15 | 765.7 | 72.7 | 22.6 | 65 | NE | | | 1 | 0 | 0 | | | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | | | | | | | | | | | | | | | | | | | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1893 m., or 6210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2201m., or 7220.9 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 582 m., or 1745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm. *Rain-fall belongs to the 3rd, 4th and 5th.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.13 | 765.3 | 30.13 | 765.3 | 45.7 | 7.6 | | SSW | | | | | | | | 0 | 0 | | |
| Groningen | 29.98 | 761.4 | 30.03 | 762.8 | 43.7 | 6.5 | | SW | | | 4 | | | | | 0.055 | 1.4 | | |
| Helder | 29.98 | 761.6 | 29.98 | 761.6 | 41.9 | 5.5 | | SSW | | | 5 | | | | | 0.039 | 1.0 | | |
| Hellevoetsluis | 30.10 | 764.4 | 30.10 | 764.4 | 45.1 | 7.3 | 83 | SW | | | 4 | | | | | | | | |
| Utrecht | 30.06 | 763.4 | 30.10 | 764.6 | 46.4 | 8.0 | 89 | SW | | | 4 | | 10 | | | 0.024 | 0.6 | Dull | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.52 | 749.8 | 29.58 | 751.2 | 38.5 | 3.6 | 54 | E | 5.4 | 2.4 | ..... | ..... | 4 | ..... | ..... | 0.126 | 3.2 | ..... | |
| Brönö | 29.16 | 740.6 | 29.20 | 741.6 | 33.8 | 1.0 | 73 | WSW | 45 | 20 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.48 | 748.9 | 29.63 | 752.7 | 37.9 | 3.3 | 92 | SW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | 0.067 | 1.7 | Light fog | |
| Tromsö | 28.69 | 728.8 | 28.74 | 729.9 | 39.6 | 4.2 | 46 | S | 34 | 15 | ..... | ..... | 2 | ..... | ..... | 0.209 | 5.3 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.04 | 763.1 | 30.24 | 768.0 | 59.4 | 15.2 | 87 | NNE | 15 | 6.9 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.30 | 744.2 | 30.32 | 770.2 | 63.5 | 17.5 | 35 | NW | 6.3 | 2.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.25 | 768.3 | 30.34 | 770.5 | 61.9 | 16.6 | 59 | E | 3.8 | 1.7 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 30.00 | 762.1 | 30.37 | 771.3 | 59.5 | 15.3 | 50 | NE | 3.8 | 1.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.26 | 768.5 | 30.33 | 770.3 | 64.0 | 17.8 | 76 | SW | 16.8 | 7.5 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h 6 m., p. m

| Portuguese Naval Series. Vessels. | [Sea or swell] Height scale 0–9 | [Sea or swell] Direction from— | | |
|---|---|---|---|---|
| Bartholomew Dias | | | | A. G. da Silva Costa Com'd.t. |
| D. Fernando | | | | A. M. de Sande, Comd't. |
| India | | | | A. D. Pedroso, Com'd't. |
| Mindello | | | | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | 2 | W | Thunder-storm | A. J. de Mattos, Com'd't. |
| Rio Douro | | | | I. T. d'Oliveria, Com'd't |
| Rio Lima, Capt. S. C. da SilvaCosta, Porto Praya, Cape Verd Islands. | 3 | NE | D clouds | A. Ferreira, 2nd Lt. |
| Sá da Bandeira, St. Paul de Loando | | | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | | | | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | 1 | | D. Clouds | J. M. T. Guimaraes, Com'd't. |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.80 | 756.8 | 30.24 | 768.0 | 36.1 | 2.3 | 66 | Calm | 0 | 0 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs |
| Wilna | 29.74 | 755.4 | 30.18 | 766.5 | 37.6 | 3.1 | 76 | WSW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds .. | Astronomical Obs. |
| Dorpat | 29.79 | 756.7 | 30.04 | 763.1 | 35.2 | 1.8 | 85 | SSW | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.98 | 761.4 | 29.99 | 761.8 | 33.3 | 0.7 | 89 | S | 16 | 7 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.41 | 747.1 | 30.08 | 764.0 | 33.1 | 0.6 | 94 | ENE | 9 | 4 | ..... | ..... | 10ksn | ..... | ..... | Blank | Blank | Sleeting | Physical Cabinet. |
| Nikolaiev | 29.95 | 760.7 | 30.02 | 762.5 | 37.4 | 3.0 | 87 | NE | 18 | 8 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.93 | 760.1 | 29.95 | 760.6 | 39.0 | 3.9 | 88 | NW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds | Lagorio. |
| Moscow | 29.69 | 754.1 | 30.25 | 769.0 | 24.8 | — 4.0 | 73 | S | 9 | 4 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | Light snow | Meteorological Obs. |
| Lugan | 29.76 | 755.8 | 29.97 | 761.1 | 37.8 | 3.2 | 63 | ENE | 22 | 10 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.06 | 763.5 | 30.08 | 764.0 | 19.9 | — 6.7 | 86 | SSE | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Sselfwerstow. |
| Tiflis | 28.41 | 721.7 | 29.83 | 757.6 | 54.1 | 12.3 | 63 | E | 9 | 4 | ..... | ..... | 9k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 29.97 | 761.2 | 29.89 | 759.1 | 40.6 | 4.8 | 44 | N | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Capt. Wisganow. |
| Trotkowo* | 29.66 | 753.4 | 30.17 | 766.2 | 22.3 | — 5.4 | 57 | S | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.88 | 758.9 | 30.17 | 766.3 | 18.5 | — 7.5 | 57 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.43 | 747.6 | 30.49 | 774.5 | 12.7 | —10.7 | 80 | E | 7 | 3 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.54 | 750.2 | 29.77 | 756.1 | 63.0 | 17.2 | 11 | NE | 2 | 1 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.34 | 719 8 | 30.02 | 762.4 | 62.6 | 17.0 | 32 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 30.15 | 765.8 | 30.71 | 780.1 | 4.1 | —15.5 | 83 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.41 | 772.5 | 30.73 | 780.6 | 11.7 | —11.3 | 83 | NE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 30.39 | 772.0 | 30.54 | 775.6 | 22.8 | — 5.1 | 32 | NNW | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend 455? m, or 1,492.7? ft., Irkutsk, 461.6 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E. 48° 34'.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.10 | 764.6 | 30.21 | 767.3 | 56.8 | 13.8 | 53 | S | 2.4 | 1.06 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 30.24 | 768.1 | 30.30 | 769.5 | 60.8 | 16.0 | 55 | NE | 2.3 | 1.05 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.39 | 694.2 | ..... | ..... | 50.7 | 10.4 | 70 | NE | 5.0 | 2.22 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Domingo Martin y Peres. |
| Madrid, Royal Observatory | 28.03 | 711.9 | ..... | ..... | 59.0 | 15.0 | 55 | SW | 1.5 | 0.68 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |
| Murcia, Met. Obs'y | 30.08 | 764.1 | 30.23 | 767 9 | 68.4 | 20.2 | 52 | NE | 4.2 | 1.89 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.41 | 746.9 | 30.31 | 769.9 | 57.4 | 14.1 | 71 | SE | 0 | 0 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Almost clear | R. Gil Villanueva, Dir. |
| Sub-Series | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.19 | 766.8 | 30.26 | 768.6 | 64.2 | 17.9 | 83 | E | 1.8 | 0.8 | ..... | 0 | 1k | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.79 | 756.8 | 29.84 | 758.1 | 84.2 | 29.0 | 74 | NE | 4.0 | 1.8 | ..... | 0 | s | ..... | E | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.21 | 767.4 | 30.31 | 769.9 | 62.1 | 16.7 | 62 | NNW | 4.0 | 1.8 | ..... | 0 | 1 | ..... | N | 0 | 0 | ..... | Capt. C. Pujazon, R. N. Dir. |
| San Juan de Porto Rico, W. I. | 29.96 | 760.9 | 30.05 | 763.2 | 76.3 | 24.6 | 75 | NE | 7.1 | 3.16 | ..... | 2c | 2k | NE | NE | 0 | 0 | Clear | Leonardo de Toledo, Ch'f Eng'r. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.20 | 741.7 | 29.24 | 742.7 | 32.0 | 0.0 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | |
| Umea | 29.38 | 746.3 | 29.43 | 747.6 | 35.6 | 2.0 | 85 | W | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0.087 | 2.2 | ..... | |
| Hernosand | 29.47 | 748.6 | 29.52 | 749.9 | 37.4 | 3.0 | 80 | W | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.56 | 750.9 | 29.74 | 755.4 | 37.4 | 3.0 | 96 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.79 | 756.7 | 29.85 | 758.2 | 34.5 | 1.4 | 93 | WSW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.60 | 751.7 | 29.67 | 753.6 | 36.5 | 2.5 | 89 | SW | 15.0 | 6.7 | ..... | ..... | 10 | ..... | ..... | 0.280 | 7.11 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.84 | 732.4 | 30.30 | 769.5 | 43.0 | 6.1 | 68 | N | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | Cloudy. | The Observatory. |
| Zurich | 28.64 | 727.5 | 30.34 | 770.5 | 38.5 | 3.6 | 72 | NW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | Cloudy | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +7.1 mm.; Thermometer, —0.1 cent.; Relative Humidity, —6 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lec Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.91 | 759.7 | 43.5 | 6.4 | 78 | ENE | 11 | 5.0 | ..... | ..... | 10 | ..... | ENE | 0.173 | 4.4 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.24 | 768.0 | 63.0 | 17.2 | ..... | SE | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.89 | 759.2 | 50.4 | 10.2 | ..... | NW | ..... | 3 | ..... | 2 | ..... | ..... | ..... | 0 | 0 | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.70 | 754.4 | 29.81 | 757.2 | 55.2 | 12.9 | 76 | NE | ..... | 2 | ..... | 10n | ..... | ..... | SW | 0.28 | 7.1 | Overcast | Prof. C. V. A. Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B. | 30.09 | 764.3 | 30.16 | 766.1 | 21.7 | — 5.7 | 64 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | Hon. J. Ferguson. |
| Brockville, Ontario | 30.23 | 767.8 | 30.58 | 776.7 | 4 | —15 6 | ..... | N | 10 | 4.5 | ..... | 0 | 8s | ..... | NW | 0.02 | 0.5 | Fair | W. R. Bigg. |
| *Chatham, N B | 29 91 | 759.7 | 29.97 | 761.2 | 28 | — 2.2 | 94 | NW | 19 | 8.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 29.89 | 759.2 | 29.93 | 760 2 | 35 | 1.7 | 95 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.30 | 0.76 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 30.32 | 770.1 | 30.54 | 775.7 | 4.8 | —15.1 | 95 | N | ..... | ..... | 2 | 0 | 1s | ..... | ..... | 0.03 | 0.8 | Fair | James Smith, M. A |
| Dalhousie, N. B. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | W. H. Bevis. |
| *Father Point, Quebec | 30.26 | 768.6 | 30.29 | 769.4 | 2 | —16.7 | 72 | N | 35 | 15.6 | ..... | 5k | 2s | N | N | 0 | 0 | Fair | J. McWilliams. |
| Fredericton, N. B. | 29.93 | 760.2 | 30.00 | 762.0 | 38.1 | 3.4 | 47 | W | 12 | 5.4 | ..... | 1cs | 2ks;d | W | ..... | 0 | 0 | Fair | Prof. Harrison. |
| *Fort Garry Manitoba | 29.97 | 735.8 | 29.84 | 757.9 | 20 | — 6.7 | 100 | SE | 26 | 11.6 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | James Stewart. |
| Granton, Ontario | 29.33 | 745.0 | 30.52 | 775.2 | 20.3 | — 6.5 | ..... | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S. | 29.87 | 758.7 | 30.01 | 762.2 | 36 | 2.2 | 95 | N | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.143 | 1.1 | Cloudy | F. Allison, M. A. |
| Hamilton, Ontario | 30.12 | 765.0 | 30.52 | 775.2 | 28.7 | — 1.8 | 89 | NW | ..... | ..... | 1 | 10cs | 0 | NW | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 30.16 | 766.1 | 30.58 | 776.4 | 9 | —12.8 | 74 | N | 22 | 9.8 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S. | 29.92 | 760.0 | 29.96 | 761.0 | 35.2 | 1.8 | 55 | S | 8 | 3.6 | ..... | 8k | 0 | S | ..... | 0.06 | 1.5 | Showery | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 30.27 | 768.8 | 30.40 | 774.4 | 5 | —15.0 | 71 | NW | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0.12 | 3.0 | Clear | C. H. McLeod, C. E |
| *Parry Sound, Ontario | 29.88 | 758.9 | 30.08 | 779.3 | — 4 | —20.0 | 65 | NE | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | 29.34? | 745.2? | 30.16? | 766.1? | 16.4 | — 8.7 | 57 | Calm | ..... | ..... | ..... | 0 | 4ks | ..... | ..... | 0 | 0 | Fair | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.77 | 756.1 | 30.51 | 774.9 | 26 | — 3.3 | 88 | NW | 7 | 3.1 | ..... | 5ck | 0 | W | ..... | 0.13 | 3.3 | Fair | H. Morgan. |
| Port Hastings, N. S. | 29.91 | 759.7 | 29.96 | 761.0 | 36.4 | 2.4 | ..... | W | 4 | 1.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 30.82 | 767.4 | 30.51 | 774.9 | 25 | — 3.9 | 86 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.13 | 3.3 | Clear | M. Payne. |
| *Quebec, Quebec | 29.97 | 761.2 | 30.33 | 770.4 | 4 | —15.0 | 74 | N | ..... | ..... | 5 | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 30.20 | 767.1 | 30.71 | 780.0 | — 9 | —22.8 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. McIntyre. |
| St. Andrews, N. B. | 29.98 | 761.5 | 30.03 | 762.8 | 36 | 2.2 | 87 | W | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | Dr. Gove. |
| St. John, N. B. | 29.86 | 758 4 | 30.03 | 762.8 | 36 | 2.2 | 90 | SW | 9 | 4.0 | ..... | 0 | 4cs | ..... | ..... | Inap. | Inap. | Fair | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.81 | 757.2 | 30.01 | 777.5 | 9 | —12.8 | 89 | NE | 9 | 4.0 | ..... | 2cs | 0 | ..... | ..... | 0.03 | 0.8 | Clear | K. Stewart. |
| Stayner, Ontario | 29.71 | 754.6 | 30.58 | 776.0 | 9 | —12.8 | 75 | N | 8 | 1.3 | ..... | 5ck | 0 | W | ..... | Inap. | Inap. | Fair | R. J. Cole. |
| Stratford, Ontario | 29.12 | 739.6 | 30.51 | 774.9 | 20.0 | — 6.7 | 92 | NW | 5.0 | 2.2 | ..... | 2cs | 3s | NW | ..... | 0.06 | 1.5 | Fair | C. J. MacGregor, M. A. |
| *Sydney, C. B. | 29.92 | 760 0 | 30.96 | 761.0 | 37 | 2.8 | 92 | SW | 10 | 4.5 | ..... | ..... | 10n | ..... | SW | Inap. | Inap. | Light rain | T. C. Hill. |
| *Toronto, Ontario | 30.12 | 765.0 | 30.54 | 775.7 | 24 | — 4.4 | 94 | NW | 15 | 6.7 | ..... | 2ck | 8ks | W | W | 0 | 0 | Cloudy | Magnetic Observatory. |
| Windsor, N. S. | 29.91 | 759.7 | 30.01 | 762.2 | 36.5 | 2.5 | 90 | SW | 8 | 3.6 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 37.0 | 2.8 | 100 | SW | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.02 | 0.5 | Showery | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters, Stratford, 1,182 ft., or 360.3 meters.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Cloud. Amount. Up'er 0—10. | Cloud. Amount. Low'r 0—10. | Cloud. Direction. Upper. From— | Cloud. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 30.11 | 764.8 | 30.36 | 771.1 | 36 | 2.2 | 80 | NW | 4 | 1.8 | ..... | 0 | 1ks | ..... | NW | 0.05 | 1.3 | Clear | |
| Alpena, Michigan | 29.92 | 760.0 | 30.64 | 778.2 | 10 | —12.2 | 79 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Atlanta, Georgia | 29.20 | 741.7 | 30.38 | 771.6 | 49 | 9.4 | 63 | NW | 10 | 4.5 | ..... | 8k | Sm'e | NW | Calm | 0 | 0 | Smoky | |
| Atlantic City, New Jersey | 30.40 | 772.1 | 30.41 | 772.4 | 39 | 3.9 | 82 | N | 10 | 4.5 | ..... | 0 | 8s | ..... | N | 0 | 0 | Fair | |
| Augusta, Georgia | 30.24 | 768.1 | 30.43 | 772.9 | 39 | 3.9 | 82 | Calm | 0 | 0 | ..... | 2cs | Fog | N | Calm | 0 | 0 | Fair | |
| Baltimore, Maryland | 30.42 | 772.6 | 30.47 | 773.9 | 42 | 5.6 | 66 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 0.04 | 1.0 | Cloudy | |
| Barnegat, New Jersey | 30.37 | 771.4 | 30.39 | 771.9 | 37 | 2.8 | 90 | NW | 11 | 4.9 | ..... | 10cs | 0 | Calm | ..... | 0.03 | 0.8 | Cloudy | |
| Bismarck, Dakota | 27.94 | 709.7 | 29.80 | 756.9 | 31 | — 0.6 | 79 | NW | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boerne, Texas | 28.77 | 730.7 | 30.09 | 764.3 | 59 | 15.0 | 94 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.12 | 688.8 | 30.08 | 764.0 | 37 | 2.8 | 90 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.14 | 3.6 | Light rain | |
| Boston, Massachusetts | 30.09 | 764.3 | 30.25 | 768.3 | 40 | 4.4 | 65 | W | 10 | 4.5 | ..... | 0 | 1s | ..... | W | 0 | 0 | Clear | |
| Brackettville, Texas | 29.10 | 739.1 | 30.13 | 765.3 | 63 | 17.2 | 78 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | Inap. | Inap. | Cloudy | |
| Breckenridge, Minnesota | 28.79 | 731 3 | 29.80 | 756.9 | 34 | 1.1 | 79 | SE | 40 | 17.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Brownsville, Texas | 30.18 | 766.6 | 30.23 | 767.8 | 58 | 14.4 | 94 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Buffalo, New York | 29.75 | 755.6 | 30.50 | 774.7 | 30 | — 1.1 | 84 | SW | 4 | 1.8 | ..... | 0 | 1s | ..... | NW | 0.06 | 1.5 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 32 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 30.11 | 764.8 | 30.43 | 772.9 | 15.5 | — 9.2 | 74 | N | 24 | 10.7 | ..... | ..... | 10s | ..... | W | 0.01 | 0.3 | Cloudy | |
| Cairo, Illinois | 30.06 | 763.5 | 30.48 | 774.2 | 41 | 5.0 | 82 | NE | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.05 | 1.3 | Cloudy | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.33 | 643.4 | 30.13 | 765.3 | 45 | 7.2 | 39 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 58 | 3.3 | 54 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camo, California | 27.52 | 699.0 | 30.09 | 764.3 | 27 | — 2.8 | 77 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.38 | 771.6 | 30.38 | 771.6 | 44 | 6.7 | 92 | NE | 4 | 1.8 | ..... | 1k | 5s | Calm | NE | 0.47 | 11.9 | Fair | |
| Cape Henry, Virginia | 30.37 | 771.4 | 30.39 | 771.9 | 42 | 5.6 | 83 | NW | 10 | 4.5 | ..... | ..... | 10n | ..... | NW | 0.05 | 1.3 | Light rain | |
| Cape Lookout, N. Carolina | 30.36 | 771.1 | 30.38 | 771.6 | 48 | 8.9 | 100 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | NE | 0.03 | 0.8 | Cloudy | |
| Cape May, New Jersey | 30.38 | 771.6 | 30.41 | 772 4 | 37 | 2.8 | 80 | NW | 16 | 7.2 | ..... | 5cs | 5s | Calm | NW | 0.02 | 0.5 | Cloudy | |
| Castroville, Texas | 29.46 | 748.3 | 30.17 | 766.3 | 60 | 15.6 | 88 | S | 4 | 1.8 | ..... | 8ck | 0 | S | ..... | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 30.35 | 770.9 | 30.41 | 772.4 | 47 | 8.3 | 77 | N | 3 | 1.3 | ..... | 1c | Fog | Calm | Calm | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 23.92 | 607.6 | 29.86 | 758.4 | 45 | 7.2 | 24 | SW | 11 | 4.9 | ..... | 0 | 5s | ..... | SW | 0 | 0 | Fair | |
| Chicago, Illinois | 29.76 | 755.6 | 30.48 | 774.2 | 35 | 1.7 | 80 | NE | 4 | 1.8 | ..... | 5cs | Haze | W | ..... | 0 | 0 | Fair | |
| Cincinnati, Ohio | 29.87 | 758.7 | 30.57 | 776.5 | 33 | 0.6 | 89 | SE | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0.03 | 0.8 | Dense fog | |
| Cleveland, Ohio | 29.78 | 756.4 | 30.55 | 776.0 | 32 | 0.0 | 79 | N | 5 | 2.2 | ..... | 10k | 0 | N | ..... | 0.01 | 0.3 | Cloudy | |
| Coleman City, Texas | 28.43 | 722.1 | 30.10 | 764.5 | 57 | 13.9 | 87 | S | 2 | 0.9 | ..... | 2c | 5ks | Calm | S | 0 | 0 | Fair | |
| Columbus, Ohio | 29.66 | 753.4 | 30.56 | 776.2 | 29 | — 1.7 | 78 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | Inap. | Inap. | Foggy | |
| Concho, Texas | 28.28 | 718.3 | 29.97 | 761.2 | 53 | 11.7 | 67 | S | 2 | 0.9 | ..... | 10k | 0 | S | ..... | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.80 | 756.9 | 30.28 | 769.1 | 57 | 13.9 | 87 | SE | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.70 | 754.4 | 30.37 | 771.4 | 34 | 1.1 | 79 | E | 4 | 1.8 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Fair | |
| Deadwood, Dakota | 25.27 | 641.8 | ..... | ..... | 34 | 1.1 | 61 | N | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Decatur, Texas | 29.08 | 738.6 | 30.26 | 768.6 | 57 | 13.9 | 93 | S | 12 | 5.4 | ..... | 0 | 5s | ..... | S | 0 | 0 | Fair | |
| Denison, Texas | 29.44 | 747.8 | 30.24 | 768.1 | 58 | 14.4 | 82 | S | 7 | 3.1 | ..... | 5k | 5s | S | S | 0 | 0 | Fair | |
| Denver, Colorado | 24.68 | 626.9 | 29.90 | 759.4 | 40 | 4.4 | 56 | SE | 4 | 1.8 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Des Moines, Iowa | 29.32 | 744.7 | 30.23 | 767.8 | 37 | 2.8 | 71 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Detroit, Michigan | 29.81 | 757.2 | 30.53 | 775.4 | 33 | 0.6 | 89 | NE | 4 | 1.8 | ..... | 2cs | 0 | NE | ..... | 0.01 | 0.3 | Clear | |
| Dodge City, Kansas | 27.44 | 697.0 | 29.73 | 755.1 | 47 | 8.3 | 100 | S | 16 | 8.0 | ..... | ..... | Fog | ..... | Calm | 0.03 | 0.8 | Foggy | |
| Dubuque, Iowa | 29.68 | 753.9 | 30.42 | 772.6 | 32 | 0.0 | 69 | Calm | 0 | 0 | ..... | 1c | 8s | S | Calm | 0 | 0 | Fair | |
| Duluth, Minnesota | 29.56 | 750.8 | 30.29 | 769.4 | 21 | — 6.1 | 86 | NE | 22 | 9.8 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Eagle Pass, Texas | 29.42 | 747.2 | 30.16 | 766.1 | 57 | 13.9 | 87 | SE | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.99 | 761.7 | 30.06 | 763.5 | 37 | 2.8 | 81 | W | 6 | 2.7 | ..... | 8c;k | Haze | SW;W | Calm | 0.11 | 2.8 | Fair | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 61 | 16.1 | 88 | Calm | ..... | ..... | 0 | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| El Paso, Texas | 26.36 | 669.5 | ..... | ..... | 45 | 7.2 | 30 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.75 | 755.6 | 30.51 | 774.9 | 34 | 1.1 | 80 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Clear | |
| Escanaba, Michigan | 29.57 | 758.7 | 30.59 | 777.0 | 15 | — 9.4 | 82 | E | 7 | 3.1 | ..... | ..... | 10s | ..... | SE | Inap. | Inap. | Cloudy | |
| Florence, Arizona | 28.58 | 725.9 | 30.18 | 766.6 | 48 | 8.9 | 43 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.76 | 705.1 | ..... | ..... | 25 | — 3.9 | 75 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.53 | 648.4 | 29.59 | 751.6 | 39 | 3.9 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.34 | 643.6 | 30.30 | 769.6 | 41 | 5.0 | 75 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Fort Gibson, Indian Ter | 29.67 | 756 3 | 30.21 | 767.3 | 53 | 11.7 | 93 | SE | 12 | 5.4 | ..... | ..... | 10n | ..... | SE | 0.34 | 8.6 | Light rain | |
| Fort Griffin, Texas | 28.88 | 733.5 | 30.16 | 766.6 | 57 | 13.9 | 87 | S | 4 | 1.8 | ..... | 2k | 0 | S | ..... | 0 | 0 | Fair | |
| Fort Keogh, Montana | 27.34 | 694.4 | ..... | ..... | 30 | — 1.1 | 78 | S | 14 | 6.3 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Fort McKavett, Texas | 27.94 | 709.7 | 29.88 | 758.9 | 53 | 11.7 | 86 | S | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.95 | 735.3 | 30.08 | 764 0 | 49 | 9.4 | 93 | S | 6 | 2.7 | ..... | 2k | 2s | S | Calm | 0 | 0 | Fair | |
| Fort Stevenson, Dakota | 27.93 | 709.4 | ..... | ..... | 21 | — 6.1 | 85 | SW | 9 | 4.0 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Fredericksburg, Texas | 28.49 | 723.6 | 30.04 | 763.0 | 61 | 16.1 | 66 | Calm | 0 | 0 | ..... | 5k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Galveston, Texas | 30.25 | 768.3 | 30.30 | 769.6 | 62 | 16.7 | 88 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Graham, Texas | 29.12 | 739.6 | 30.18 | 766.6 | 58 | 14.4 | 88 | SE | 8 | 3.6 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 29.85 | 758.2 | 30.56 | 776.2 | 26 | — 3.3 | 75 | E | 6 | 2.7 | ..... | 0 | 5s | ..... | E | 0.05 | 1.3 | Fair | |
| Indianapolis, Indiana | 29.68 | 753.9 | 30.52 | 775.2 | 28 | — 2.2 | 88 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | Inap. | Inap. | Foggy | |
| Indianola, Texas | 30.25 | 768.3 | 30.27 | 768.8 | 63 | 17.2 | 94 | SE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 29.04 | 737.6 | 30.18 | 766.6 | 57 | 13.9 | 87 | S | 8 | 3.6 | ..... | 5k | 0 | S | ..... | 0 | 0 | Fair | |
| Jacksonville, Florida | 30.38 | 771.6 | 30.40 | 772.1 | 45 | 7.2 | 92 | NE | 2 | 0.9 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Keokuk, Iowa | 29.69 | 754.1 | 30.34 | 770.6 | 34 | 1.1 | 79 | SE | 13 | 5.8 | ..... | 2c;5k | 0 | W | ..... | 0 | 0 | Clear | |
| Key West, Florida | 30.25 | 768.3 | 30.28 | 769.1 | 68 | 20.0 | 70 | NE | 9 | 4.0 | ..... | 1k | 0 | Calm | ..... | 0 | 0 | Clear | |
| Kittyhawk North Carolina | 30.34 | 770 6 | 30.37 | 771.4 | 42 | 5.6 | 100 | SE | 1 | 0.4 | ..... | 8ck | Fog | W | Calm | 0.05 | 1.3 | Fair | |
| Knoxville, Tennessee | 29.41 | 747.0 | 30.45 | 773.4 | 49 | 9.4 | 78 | NE | 4 | 1.8 | ..... | ..... | 10ks | ..... | NE | 0 | 0 | Cloudy | |
| La Crosse, Wisconsin | 29.58 | 751.3 | 30.36 | 771.1 | 34 | 1.1 | 70 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 26.19 | 665.2 | 30.34 | 770.6 | 42 | 5.6 | 83 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.78 | 756.4 | 30.12 | 765.0 | 60 | 15.6 | 88 | SE | 6 | 2.7 | ..... | 5k | 0 | SE | ..... | 0 | 0 | Fair | |
| Leavenworth, Kansas | 29.30 | 744.2 | 30.10 | 766.1 | 43 | 6.1 | 92 | SE | 7 | 3.1 | ..... | ..... | 10s | ..... | ..... | 0.06 | 1.5 | Threatening | |
| Los Angeles, California | 29.80 | 756.9 | 30.15 | 765.8 | 45.5 | 7.5 | 84 | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.91 | 759.7 | 30.51 | 774.9 | 31 | — 0.6 | 89 | N | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0.05 | 1.3 | Dense fog | |
| Madison, Wisconsin | 29.74 | 755.4 | 30.44 | 773.2 | 51 | 10.6 | 65 | NW | 2 | 0.9 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Marquette, Michigan | 29.41 | 747.0 | 30.45 | 773.4 | 33 | 0.6 | 70 | SE | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Mason, Texas | 29.78 | 756.4 | 30.56 | 776.2 | 18 | — 7.8 | 84 | SE | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | 0.15 | 3.8 | Light snow | |
| Memphis, Tennessee | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Milwaukee, Wisconsin | 30.09 | 764.3 | 30.42 | 772.6 | 46 | 7.8 | 77 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Mobile, Alabama | 29.72 | 754.9 | 30.50 | 774.7 | 32 | 0.0 | 79 | E | 16 | 7.2 | ..... | 1c | 8s | Calm | NE | 0 | 0 | Cloudy | |
| Montgomery, Alabama | 30.37 | 771.4 | 30.41 | 772.4 | 47 | 8.3 | 85 | N | 6 | 2.7 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Smoky | |
| Morgantown, West Virginia | 30.18 | 766.6 | 30.43 | 772.9 | 44 | 6.7 | 84 | E | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Mt. Washington, N. H. | 29.41 | 747.0 | 30.54 | 775.7 | 35 | 1.7 | 90 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0.08 | 2.0 | Dense fog | |
| Nashville, Tennessee | 23.45 | 595.6 | 29.51 | 757.2 | 8 | —13.3 | 100 | NW | 87 | 38.9 | ..... | ..... | 10n | ..... | NW | 0.07 | 1.8 | Light snow | |
| New Haven, Connecticut | 29.91 | 759.7 | 30.47 | 773.9 | 46 | 7.8 | 84 | Calm | 0 | 0 | ..... | 0 | 5ks | ..... | E | 0 | 0 | Fair | |
| New London, Connecticut | 30.21 | 767.3 | 30.34 | 770.4 | 42 | 5.6 | 83 | NW | 2 | 0.9 | ..... | 2c | Haze | Calm | Calm | 0 | 0 | Clear | |
| New Orleans, Louisiana | 30.27 | 768.8 | 30.32 | 770.1 | 40 | 4.4 | 73 | NW | 5 | 2.2 | ..... | 2cs | 2s | W | W | 0.09 | 2.3 | Fair | |
| Newport, Rhode Island | 30.30 | 769.6 | 30.37 | 771.4 | 49 | 9.4 | 93 | S | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| New York, New York | 30.25 | 768.3 | 30.30 | 769.6 | 39.5 | 4.2 | 69 | W | 8 | 3.6 | ..... | 5c | 5s | S | W | 0.04 | 1.0 | Clearing | |
| Norfolk, Virginia | 30.22 | 767.6 | 30.40 | 772.1 | 40 | 4.4 | 72 | NW | 6 | 2.7 | ..... | 2cs | 2s | E | Calm | 0.12 | 3.0 | Fair | |
| | 30.36 | 771.1 | 30.42 | 772.6 | 47 | 8.3 | 85 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | W | 0.15 | 3.8 | Cloudy | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.01 | 686.0 | 29.58 | 751.3 | 43 | 6.1 | 92 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy..... | |
| Olympia, Washington Ter. | 29.82 | 757.4 | 29.86 | 758.4 | 30.0 | — 1.1 | 100 | S | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0.07 | 1.8 | Dense fog... | |
| Omaha, Nebraska | 28.94 | 735.1 | 30.06 | 763.5 | 41 | 5.0 | 74 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy ..... | |
| Oswego, New York | 30.15 | 765.8 | 30.50 | 774.7 | 22 | — 5.6 | 72 | N | 28 | 12.5 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Cloudy..... | |
| Pembina, Dakota | 28.89 | 733.8 | 29.75 | 755.6 | 26 | — 3.3 | 75 | SE | 25 | 11.2 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap | Cloudy ..... | |
| Philadelphia, Pa | 30.36 | 771.1 | 30.41 | 772.4 | 41 | 5.0 | 65 | NW | 15 | 6.7 | ..... | ..... | 10s | ..... | NW | 0.07 | 1.8 | Cloudy..... | |
| Phœnix, Arizona | 28.91 | 734.3 | 30.76 | 781.3 | 48 | 8.9 | 49 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Pike's Peak, Colorado | 17.72 | 450.1 | 29.03 | 760.2 | 13 | —10.6 | 26 | W | 30 | 13.4 | ..... | 0 | 1s | ..... | W | 0 | 0 | Clear..... | |
| Pioche, Nevada | 24.00 | 609.6 | 29.77 | 756.1 | 42 | 5.6 | 27 | S | 12 | 5.4 | ..... | 0 | 2s | ..... | SW | 0 | 0 | Fair..... | |
| Pittsburg, Pennsylvania | 29.65 | 753.1 | 30.51 | 774.9 | 33 | 0.6 | 89 | NW | 2 | 0.9 | ..... | 0 | Sm'e | ..... | NW | Inap. | Inap. | Clear. ..... | |
| Port Huron, Michigan | 29.51 | 767.2 | 30.54 | 775.7 | 25 | — 3.9 | 87 | NE | 16 | 7.2 | ..... | 5ck | 2ks | W | Calm | Inap. | Inap. | Fair ..... .... | |
| Portland, Maine | 30.10 | 764.5 | 30.15 | 765.8 | 40 | 4.4 | 65 | W | 4 | 1.8 | ..... | 1k | 0 | Calm | ..... | 0.02 | 0.5 | Clear..... | |
| Portland, Oregon | 29.80 | 756.9 | 29.90 | 759.4 | 35.0 | 1.7 | 90 | NW | 5 | 2.2 | ..... | 2c | Fog | ..... | NW | 0.03 | 0.8 | Clear..... | |
| Prescott, Arizona | 24.80 | 629.9 | 30.16 | 766.1 | 44 | 6.7 | 37 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Pilot Point, Texas | 29.22 | 742.2 | 30.06 | 763.3 | 54 | 12.2 | 86 | SE | 5 | 2.2 | ..... | 8k | 2s | S | SE | 0 | 0 | Cloudy..... | |
| Punta Rassa, Florida | 30.34 | 770.6 | 30.35 | 770.9 | 58 | 14.4 | 94 | N | 11 | 4.9 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy..... | |
| Red Bluff, California | 29.49 | 749.0 | 29.85 | 758.2 | 50 | 10.0 | 89 | SE | 36 | 16.1 | ..... | ..... | 10n | ..... | SE | 2.11 | 53.6 | Light rain... | |
| Rio Grande City, Texas | 30.05 | 763.3 | 30.26 | 768.6 | 62 | 16.7 | 94 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Rochester, New York | 29.80 | 756.9 | 30.46 | 773.7 | 33 | 0.6 | 89 | NW | 14 | 6.3 | ..... | 9k | 0 | W | ..... | Inap. | Inap. | Cloudy..... | |
| Roseburg, Oregon | 29.24 | 742.7 | 29.82 | 757.4 | 35.0 | 1.7 | 100 | SW | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0.19 | 4.8 | Foggy ..... | |
| Sacramento, California | 29.90 | 759.4 | 29.98 | 761.5 | 52 | 11.1 | 93 | SE | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 1.41 | 35.8 | Light rain... | |
| St. Louis, Missouri | 29.84 | 757.9 | 30.45 | 773.4 | 36 | 2.2 | 90 | SE | 6 | 2.7 | ..... | ..... | Fog | ..... | ..... | 0.03 | 0.8 | Foggy ..... | |
| St. Marks, Florida | 30.39 | 771.9 | 30.41 | 772.4 | 45 | 7.2 | 100 | NE | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy ..... | |
| St. Paul, Minnesota | 29.28 | 743.7 | 30.14 | 765.5 | 33 | 0.6 | 69 | SE | 16 | 7.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy..... | |
| Salt Lake City, Utah | 25.56 | 649.2 | 29.89 | 759.2 | 44 | 6.7 | 60 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| San Antonio, Texas | 29.55 | 750.6 | 30.14 | 765.5 | 62 | 16.7 | 94 | SE | 3 | 1.3 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy..... | |
| San Diego, California | 30.07 | 763.8 | 30.15 | 765.8 | 49 | 9.4 | 100 | NE | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy ..... | |
| Sandusky, Ohio | 29.84 | 757.9 | 30.55 | 776.0 | 35 | 1.7 | 70 | NE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear ..... | |
| Sandy Hook, New Jersey | 30.36 | 771.1 | 30.39 | 771.9 | 38 | 3.3 | 81 | NW | 12 | 5.4 | ..... | 2k | 5s | W | W | 0.14 | 3.6 | Cloudy..... | |
| San Francisco, California | 29.89 | 759.2 | 29.95 | 760.7 | 57 | 13.9 | 92 | SW | 19 | 8.5 | ..... | 8 | 10n | ..... | ..... | 2.98 | 75.7 | Heavy rain.. | |
| Santa Fé, New Mexico | 23.37 | 593.6 | 29.91 | 759.7 | 34 | 1.1 | 61 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Savannah, Georgia | 30.33 | 770.4 | 30.42 | 772.6 | 44 | 6.7 | 84 | NW | 5 | 2.2 | ..... | 2c | Fog | Calm | Calm | 0 | 0 | Fair..... | |
| Shreveport, Louisiana | 30.08 | 764.0 | 30.31 | 769.9 | 57 | 13.9 | 87 | Calm | 0 | 0 | ..... | 2s | 2ks | Calm | SW | 0 | 0 | Fair..... | |
| Silver City, New Mexico | 24.40 | 619.8 | 30.68 | 779.3 | 40 | 4.4 | 64 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Smithville, North Carolina | 30.37 | 771.4 | 30.41 | 772.4 | 46 | 7.8 | 92 | N | 4 | 1.8 | ..... | 2cs | Fog | W | Calm | 0 | 0 | Fair..... | |
| Springfield, Massachusetts | 30.18 | 766.6 | 30.31 | 769.9 | 42 | 5.6 | 66 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.07 | 1.8 | Clear..... | |
| Stockton, Texas | 27.11 | 688.6 | 30.11 | 764.8 | 51 | 10.6 | 79 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap | Inap. | Clear..... | |
| Thatcher's Island, Mass | 30.18 | 766.6 | 30.24 | 768.1 | 36 | 2.2 | 61 | SW | 8 | 3.6 | ..... | 2c | 0 | SW | ..... | 0 | 0 | Fair ..... | |
| Toledo, Ohio | 29.80 | 756.9 | 30.58 | 776.4 | 32 | 0.0 | 69 | E | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Tucson, Arizona | 27.64 | 702.3 | 30.19 | 766.8 | 49 | 9.4 | 50 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Umatilla, Oregon | 29.62 | 752.2 | 30.13 | 765.3 | 29.0 | — 1.7 | 86 | E | 4 | 1.8 | ..... | 0 | 5s | ..... | W | 0.01 | 0.3 | Fair..... | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 33 | 0.6 | 79 | Calm | ..... | ..... | 0 | ..... | 10s | ..... | NW | 0 | 0 | Cloudy..... | |
| Uvalde, Texas | 29.36 | 745.5 | 30.16 | 766.1 | 61 | 16.1 | 82 | E | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Vicksburg, Mississippi | 30.13 | 765.3 | 30.40 | 772.1 | 52 | 11.1 | 66 | SE | 11 | 4.9 | ..... | 5c | 0 | SW | ..... | 0 | 0 | Fair..... | |
| Virginia City, Montana | 24.07 | 611.4 | 29.55 | 750.6 | 20 | — 6.7 | 70 | SE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.22 | 5.6 | Clear..... | |
| Visalia, California | 29.75 | 755.6 | 30.12 | 765.0 | 53.3 | 11.8 | 70 | SE | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Washington, D. C | 30.36 | 770.9 | 30.48 | 774.2 | 42 | 5.6 | 58 | N | 7 | 3.1 | ..... | Haze | 8s | ..... | Calm | 0.01 | 0.3 | Cloudy..... | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 40 | 4.4 | 56 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Wilmington, N. Carolina | 30 28 | 769.1 | 30.37 | 771.4 | 45 | 7.2 | 84 | N | 3 | 1.3 | ..... | 5ck | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| Winnemucca, Nevada | 25.51 | 647.9 | 29.87 | 758.7 | 42 | 5.6 | 83 | SW | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.19 | 4.8 | Light rain... | |
| Wood's Holl, Mass | 30.26 | 768.3 | 30.29 | 769.4 | 39 | 3.9 | 72 | W | 14 | 6.3 | ..... | 8c;cs | 0 | NW | ..... | 0.04 | 1.0 | Cloudy..... | |
| Yankton, Dakota | 28.73 | 729 7 | 30.04 | 763.0 | 41 | 5.0 | 74 | SE | 6 | 2.7 | ..... | Haze | ..... | ..... | ..... | 0 | 0 | Hazy..... | |
| Yuma, Arizona | 29.87 | 758.7 | 30.03 | 762.8 | 53 | 11.7 | 80 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear... ..... | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.67 | 728.2 | 30.10 | 764.5 | 50 | 10.0 | 86 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.20 | 767.1 | 30.25 | 768.3 | 69 | 20.6 | 64 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.23 | 640.8 | ..... | ..... | 68.0 | 20.0 | 80 | Calm | 0 | 0 | ..... | 3k | 2ks | ..... | ..... | 0.02 | 0.5 | ..... | Thomas Herran. |
| Navassa, W. I | 29.99 | 761.7 | 30.07 | 763.8 | 76 | 24.4 | ..... | NE | 18.2 | 8.1 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Partly clo'dy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.02 | 762.6 | 30.02 | 762.6 | 80 | 26.7 | 82 | NE | ..... | ..... | 3 | 3c | 5k | E | ..... | 0.050 | 1.27 | Fair..... | C. J. Hering |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Fortescue & W. Wood |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,642 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,385.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.06 in.; La Mesilla, 4.16 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.39 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.45 in. The instrumental error of the barometer at Medellin is not known.

## UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.87 | 758.7 | 54 | 12.2 | 54 | 12.2 | 100 | SSW | 32 | 14.3 | ..... | ..... | 10 | ..... | S | 1.94 | 49.3 | ..... | ..... | Raining..... | |
| Navy Yard, Pensacola, Fla. | 30.45 | 773.4 | 52 | 11.1 | 52 | 11.1 | 79 | NE | 7 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 30.22 | 767.6 | 66 | 18.9 | 38 | 3.3 | 41 | W | 1 | 0.4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan.....* | 29.79‡ | 756.7‡ | ..... | ..... | 47.8 | 8.8 | 92 | NE | ..... | ..... | 4 | ..... | 10n | ..... | NNE | 0.57 | 14.5 | ..... | ..... | Light rain... | |
| Adams, Panama ..... | 29.98 | 761.5 | 77 | 25.0 | 77 | 25.0 | 95 | NW | ..... | ..... | 2 | ..... | 5 | ..... | N; W | ..... | ..... | ..... | ..... | Fair..... | |
| Alaska, N. 26° 48′, W. 114° 27′..... | 30.21 | 767.3 | 67 | 19.4 | 57 | 13.9 | 81 | NW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | Long | W | Hazy..... | |
| Alliance, Villafranca, France..... | 30.14‡ | 765.5‡ | ..... | ..... | 59 | 15.0 | 38 | SSW | ..... | ..... | 0–1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Ashuelot, Hong-Kong, China. ..... | 30.17‡ | 766.3‡ | ..... | ..... | 50 | 10.0 | 64 | NNE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear ..... | |
| Canonicus, New Orleans, La..... | 30.34 | 770.6 | 42 | 5.6 | 50 | 10.0 | 93 | NE | ..... | ..... | 2 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Foggy ..... | |
| Colorado, New York, N. Y..... | 30.36 | 771.1 | 40 | 4.4 | 40 | 4.4 | 91 | W | 9 | 4.0 | ..... | ..... | 10 | ..... | WSW | 0 | 0 | ..... | ..... | Foggy ..... | |
| Constitution Lisbon, Portugal..... | 30.35‡ | 770.9‡ | ..... | ..... | 65 | 18.3 | 84 | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Despatch, Constantinople, Turkey | 29.93‡ | 760.2‡ | ..... | ..... | 45 | 7.2 | 84 | NE | ..... | ..... | 2 | ..... | 10 | ..... | NE | ..... | ..... | Smooth | ..... | Cloudy ..... | |
| Franklin, Norfolk, Va..... | 30.53 | 775.4 | 66 | 18.9 | 47 | 8.3 | 70 | NE | 7.2 | 3.2 | ..... | ..... | 8 | ..... | W | 0 | 0 | ..... | ..... | Cloudy..... | |
| Gettysburg, Genoa, Italy ..... | 30.07‡ | 763.8‡ | ..... | ..... | 56 | 13.3 | 57 | NNW | ..... | ..... | 1–2 | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | D. clouds..... | |
| Hartford, Montevideo, Uruguay... | 30.00 | 762.0 | 70 | 21.1 | 70 | 21.1 | 66 | N | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Lackawana, Panama.....*... | 29.72‡ | 754.9‡ | ..... | ..... | 75 | 23.9 | 95 | NNW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Fair..... | |
| Michigan, Erie, Pa.....†... | 30.21 | 767.3 | ..... | ..... | 30 | — 1.1 | 89 | W | ..... | ..... | 2 | ..... | 5 | ..... | W | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monocacy. Sheipoo, China.....* | 30.33‡ | 770.4‡ | ..... | ..... | 42 | 5.6 | 67 | NNW | ..... | ..... | 3–4 | ..... | 10 | ..... | NNW | ..... | ..... | ..... | ..... | Squally..... | |
| Monongehela, Yokohama, Japan ....*.. | 29.80‡ | 756.9‡ | ..... | ..... | 51 | 10.6 | 65 | N | ..... | ..... | 2–3 | ..... | 10 | ..... | ..... | Heavy | Heavy | ..... | ..... | Drizzling.... | |
| New Hampshire, Port Royal, S. C..... | 30.41 | 772.4 | 49 | 9.4 | 48 | 8.9 | 92 | NNW | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Misty..... | |
| Onward, Callao, Peru.....†... | 30.04 | 763.0 | ..... | ..... | 68 | 20.0 | 95 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Palos, Tientsin, China..... | 30.61 | 777.5 | 64 | 17.8 | 28 | — 2.2 | 88 | NNE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 42 | 5.6 | 83 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Pensacola. Talcahuano. Chili ..... | 29.92‡ | 760.0‡ | ..... | ..... | 65 | 18.3 | 89 | Calm | 0 | 0 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair..... | |
| Powhatan, Z. 22° 53′, W. 78° 47′..... | 30.29‡ | 769.4‡ | ..... | ..... | 68 | 20.0 | 79 | NE | ..... | ..... | 4 | ..... | 5 | ..... | NE | 0 | 0 | Mod'ate | NE | Fair ..... | |
| Quinnebaug, Villafranca, France..... | 30.07‡ | 763.8‡ | ..... | ..... | 53 | 11.7 | 80 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Ranger. Kobe, Japan.....*.. | 29.99‡ | 761.7‡ | ..... | ..... | 58 | 14.4 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Richmond, Naples, Italy..... | 29.99‡ | 761.7‡ | ..... | ..... | 54 | 12.2 | 49 | ENE | ..... | ..... | 5 | ..... | 8 | ..... | ENE | 0 | 0 | Rough | NE | Cloudy ..... | |
| Rio Bravo, Brownsville, Texas..... | 30.19 | 766.8 | 62 | 16.7 | 61 | 16.1 | 94 | NE | ..... | ..... | 1 | ..... | Fog | ..... | Calm | ..... | ..... | ..... | ..... | Foggy ..... | |
| Santee, Annapolis, Md... ..... | 30.46‡ | 773.7‡ | ..... | ..... | 39 | 3.9 | 90 | Var. | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.05 | 1.3 | ..... | ..... | Cloudy..... | |
| Saratoga, Washington, D. C..... | 30.56 | 776.2 | ..... | ..... | 42 | 5.6 | 74 | N | .... | ..... | 1 | ..... | 9 | ..... | Calm | Light | Light | ..... | ..... | Misty..... | |
| St. Louis, League Island, Pa..... | 30.30 | 769.6 | 58 | 14.4 | 39 | 3.9 | 91 | NW | 10 | 4.5 | ..... | ..... | 8 | ..... | NNW | 0.1 | 3. | ..... | ..... | Cloudy..... | |
| Supply, N. 27° 11′, W. 70° 46′..... | 30.27‡ | 768.8‡ | ..... | ..... | 69 | 20.6 | 75 | NNE | ..... | ..... | 4 | ..... | 2 | ..... | NE | ..... | ..... | Long | NE | Clear. ..... | |
| Trenton Villafranca, France..... | 30.13‡ | 765.3‡ | ..... | ..... | 63 | 17.2 | 62 | S | ..... | ..... | 0–1 | ..... | 0 | ..... | ..... | 0 | 0 | None | ..... | Clear..... | |
| Tuscarora, Acapulco, Mexico..... | 29.97‡ | 761.2‡ | ..... | ..... | 76 | 24.4 | 82 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Wabash, Boston, Mass..... | 30.16‡ | 766.6‡ | ..... | ..... | 37 | 2.8 | 71 | W | 9 | 4.0 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Fair ..... | |
| Wyoming. N. 39° 56′, E. 26° 07′.. ..... | 29.96‡ | 761.0 | ..... | ..... | 44 | 6.7 | 92 | NNE | ..... | ..... | 4–5 | ..... | 10 | ..... | NE | ..... | ..... | Mod'ate | NE | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | CHARACTER. | DIRECTION FROM— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Colima, La Libertad, San Salvador...† | | 30.02‡ | 762.5‡ | 80 | 26.7 | 57 | N | | | 3–5 | | 0 | | | 0 | Small | SW | Blue sky | Capt. Whitebury |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Dakota, Capt. Morse | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Granada, Capt. Austin. Punta Arenas, Costa Rica...† | | 30.13‡ | 765.3‡ | 80 | 26.7 | 96 | N | | | 4 | | lt | | NW | 0 | | | Clear | R. C. Ghest, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | |
| S. S. Zealandia | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation, no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, Hong-Kong, China | * | 29.97‡ | 761.2‡ | 57 | 13.9 | 81 | N | | | 5 | | lt | | N | | Mod'ate | NNE | D. clouds | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 37° 10′, E. 162° 34′ | † | 30.17‡ | 766.3‡ | 56 | 13.3 | 87 | Var. | | | 4 | | s | | Var. | Blank | Smooth | | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 26° 10′, W. 48° 39′ | | 30.04‡ | 763.0‡ | 79.0 | 26.1 | 78 | SE | | | 6 | | 10 | | | 6 hours | Mod'ate | S | Rainy | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 5; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Lo'wr 0—10. | Upper. From— | Lower. From— | | Character. | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 44° 49', W. 40° 01' | | 30 38‡ | 771.6‡ | 49 | 9.4 | | WNW | | | 5 | | 2 | | WNW | 0 | Mod'ate | N | Partly cl'dy | Captain Sargent |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

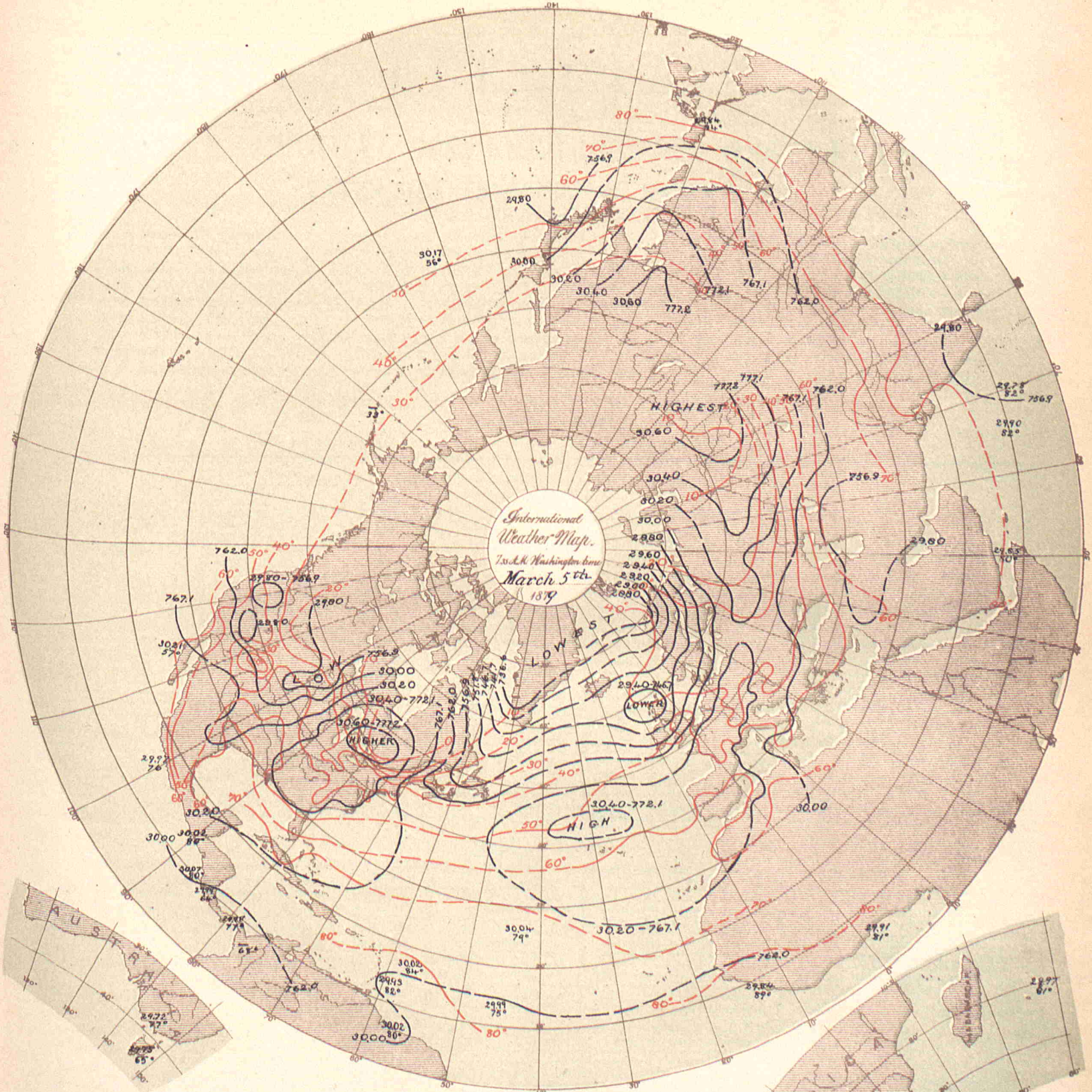
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 6, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 30.27 | 768.8 | 59.7 | 15.4 | 86 | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | |
| Nemours | ..... | ..... | 30.34 | 770.5 | 63.0 | 17 2 | 81 | NNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Kesxuche. |
| Algiers | ..... | ..... | 30.31 | 769.9 | 58.6 | 14.8 | 72 | NNE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Tourillere. |
| La Calle | ..... | ..... | 30.28 | 769.0 | 59.9 | 15.5 | 79 | NNW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0.173 | 4.4 | Cloudy | Foufrede. |
| Tunis | ..... | ..... | 30.21 | 767.3 | 55.6 | 13.1 | 43 | N | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0.146 | 3.7 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 30.28 | 769.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 30.23 | 767.9 | 57.2 | 14.0 | 40 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Herbin. |
| Tebessa | ..... | ..... | 30.31 | 769 8 | 46.8 | 8.2 | 82 | NNW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.035 | 0.9 | Covered | Watrin. |
| Geriville | ..... | ..... | 30.19 | 766.8 | 52.2 | 11.2 | 97 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Brugnlaux. |
| Laghouat | ..... | ..... | 30.28 | 769.2 | 58.6 | 14.8 | 44 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bertrand. |
| Biskra | ..... | ..... | 30.30 | 769.7 | 68.9 | 20.5 | 26 | NW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | ..... | ..... | ..... | ..... | ..... | ..... | ..... | S | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stoatr. |
| Cracow, I. R. Observatory | 29.72 | 755.0 | 30.29 | 769.4 | 45.6 | 7.4 | 60 | SSE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski |
| Eperies | 29.43 | 747.5 | 30.23 | 767.7 | 38.8 | 3.8 | 64 | S | ..... | ..... | 2 | ..... | 4s | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 29.30 | 744.1 | 30.21 | 767.2 | 41.0 | 5.0 | 55 | SW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.99 | 736 3 | 30.28 | 769.2 | 41.0 | 5.0 | 62 | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. A. Gottschling. |
| Kremsmünster | 28.77 | 730.8 | 30.26 | 768.7 | 37.0 | 2.8 | 62 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner. |
| Lemberg | 28.87 | 733.2 | 30.25 | 768.4 | 41.7 | 5.4 | 59 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.17 | 741.0 | 30.29 | 767.1 | 37.2 | 2.9 | 88 | WNW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 30.10 | 766.1 | 30.28 | 769.0 | 50.4 | 10.2 | 37 | N | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Julius Csics, S. J. |
| Szegedin | 29.80 | 757.0 | 30.28 | 769.2 | 48.0 | 6.1 | 49 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Busin. |
| Vienna | 30.20 | 767.1 | 30.30 | 769.7 | 47.3 | 8.5 | 58 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | 29.54 | 750.2 | 30.28 | 769.1 | 39.2 | 4.0 | 60 | Calm | ..... | ..... | 0 | ..... | 9 | ..... | ..... | 0 | 0 | Foggy | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Royal Observatory |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. E. de Cae. |
| Maeseyck | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Pierrot |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:9, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.82 | 757.4 | 29.92 | 760.0 | 42.2 | 5.7 | ..... | S | 18 | 8.0 | ..... | ..... | 9 | ..... | ..... | 0.010 | 0.25 | Overcast | W. Boswell. |
| Ardrossan | 29.99 | 761.7 | 30.01 | 762.2 | 45 | 7.2 | ..... | WSW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.11 | 764.8 | 46.9 | 8.3 | ..... | SW | 18 | 8.0 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Squally | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.18 | 766.6 | 47.6 | 8.7 | ..... | WSW | 16 | 7.2 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 30.18 | 766.6 | 46.6 | 8.1 | ..... | WSW | 42 | 18.8 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Squally | Thomas Mackereth. |
| Bradford, Yorkshire | 29.74 | 755.4 | 30.13 | 765.3 | 47.1 | 8.4 | ..... | NW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.91 | 759.7 | 29.94 | 760.5 | 79.5 | 26.4 | ..... | NNE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | Pvt. G. Surgener, A. H. C. |
| Cambridge, Observatory | ..... | ..... | 30.20 | 767.1 | 55.0 | 12.8 | ..... | WSW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds | H. Todd. |
| Cardington | ..... | ..... | 30.18 | 766.6 | 51.4 | 10.8 | ..... | W | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | John McLaren. |
| Chatham, School M. E. | 30.11 | 764.8 | 30.24 | 768.1 | 49.5 | 9.7 | ..... | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | Corpl. Daly, R. E. |
| Dartmoor | 28.56 | 725.4 | 30.01 | 763.0 | 47.0 | 8.3 | ..... | N | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | Fine | Alexander Watt. |
| Donaghadee | 30.04 | 763.0 | 30.08 | 764.0 | 48 | 8.9 | ..... | W | ..... | ..... | 5 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | J. Mac Gowan. |
| Dover | 30.22 | 767.6 | 30.26 | 768.3 | 45 | 7.2 | ..... | WSW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded | J. Costello. |
| Falmouth, Observatory | 30.08 | 764.0 | 30.32 | 770.1 | 47.6 | 8.7 | ..... | SSE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| Fort Napier, (Natal) | 27.60 | 701.0 | 29.92 | 760.0 | 70.0 | 21.1 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 89 | 31.7 | ..... | E | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 30.11 | 764.8 | 49.5 | 9.7 | ..... | SW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Blue sky | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.22 | 767.6 | 30.28 | 769.1 | 59.9 | 15.5 | ..... | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.78 | 756.4 | 29.98 | 761.5 | 44.9 | 9.9 | ..... | SSW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | D. G. Maclean. |
| Great Yarmouth | 30.17 | 766.3 | 30.18 | 766.6 | 49 | 9.4 | ..... | NW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Misty | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.06 | 763.5 | 30.24 | 768.1 | 50.4 | 10.2 | ..... | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Hazy | The Staff, for G. B. Airy |
| Guernsey | 30.07 | 763.8 | 30.29 | 769.4 | 47 | 8.3 | ..... | NNE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F.R.S |
| Helston | 30.24 | 768.1 | 30.36 | 771.1 | 50 | 10.0 | ..... | S | ..... | ..... | 4 | ..... | 2c | ..... | ..... | 0.7 | 18. | Fine | M. P. Moyle. |
| Holyhead | 30.16 | 766.1 | 30.21 | 767.3 | 46 | 7.8 | ..... | SW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | John Tilston. |
| Jersey | 30.02 | 762.5 | 30.32 | 770.1 | 47.0 | 8.3 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | J. Fisher. |
| Kew, Observatory | 30.21 | 767.3 | 30.25 | 768.3 | 49.5 | 9.7 | ..... | W | 10 | 4.5 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | The Meteorological Of. |
| Leicester, Museum | 30.00 | 762.0 | 30.26 | 768.6 | 50.0 | 10.0 | ..... | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Wm. J. Harrison, F.G.S |
| Malta, (Mediterranean) | 29.92 | 760.0 | 30.00 | 762.0 | 55 | 12.8 | ..... | NE | ..... | ..... | 2 | ..... | 3k | ..... | ..... | ..... | ..... | D. clouds | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.68 | 753.9 | 29.77 | 756.1 | 46 | 7.8 | ..... | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.24 | 768.1 | 70.2 | 21.2 | ..... | NE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 30.04 | 763.0 | 30.23 | 767.8 | 54.0 | 12.2 | ..... | WSW | ..... | ..... | 2 | ..... | 5c,k | ..... | WSW | 0.061 | 1.55 | D. clouds | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.68 | 753.9 | 30.21 | 767.3 | 49.1 | 9.5 | ..... | W | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.24 | 768.1 | 51 | 10.6 | ..... | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | H. E. Bellamy. |
| Plymouth | 30.22 | 767.6 | 30.29 | 769.4 | 48.8 | 9.3 | ..... | SW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | John Merrifield. |
| Roche's Point | 30.22 | 767.6 | 30.26 | 768.6 | 48 | 8.9 | ..... | WSW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded | W. Kennedy. |
| Saint Ann's Head | 30.11 | 764.8 | 30.28 | 769.1 | 46 | 7.8 | ..... | W | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | John C. Walker. |
| Sandwick Manse, (Orkneys | ..... | ..... | 29.68 | 753.9 | 37 | 2.8 | ..... | SSE | 32 | 14.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Dr. Hoskins. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 30.08 | 764.0 | 50.2 | 10.1 | ..... | ENE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | Blank | Blank | D. clouds | W. H. Lyne. |
| Sheffield | 29.90 | 759.4 | 30.20 | 767.1 | 50.1 | 10.1 | ..... | W | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | D. clouds | W. F. Cooper. |
| Silloth Rectory | 30.07 | 763.8 | 30.10 | 764.5 | 47.0 | 8.3 | 76 | SW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0.300 | 1.02 | Blue sky | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.76 | 755.9 | 30.17 | 766.3 | 46.0 | 7.8 | ..... | SW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | Squally | Rev. S. J. Perry. |
| Stratfield Turgiss | 30.02 | 762.5 | 30.25 | 768.3 | 51.4 | 10.8 | ..... | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | C.H.Griffith, F.M.S. |
| Thurso | 29.65 | 753.1 | 29.71 | 754.6 | 40 | 4.4 | ..... | S | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | John Trotter. |
| Truro, Royal Institution | 30.26 | 768.6 | 30.32 | 770.1 | 53 | 11.7 | ..... | NW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | W. Newcombe. |
| Valencia, Observatory | 30.23 | 767.8 | 30.25 | 768.3 | 49.6 | 9.7 | ..... | SW | 23 | 10.3 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.81 | 757.2 | 29.95 | 760.7 | 71.5 | 21.9 | 83 | SSE | 12 | 5.4 | ..... | 0 | 2 | ..... | ..... | 0.300 | 7.62 | Raining | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.74 | 755.4 | 57.0 | 14.0 | 74 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 30.10† | 764.5† | 45.0 | 8.9 | ..... | W | ..... | ..... | 3 | ..... | 5k | ..... | ..... | 0.01 | 0.3 | Fine | Andrew Gibb. |
| Mauritius, Observatory | 29.82 | 757.4 | 30.00 | 762.1 | 81.6 | 27.6 | 67 | E | 13.6 | 6.0 | ..... | 6 | 3 | ..... | E | 0.02 | 0.5 | Cloudy | C. Meldrum. |
| Melbourne, Observatory | 29.96 | 761.0 | 30.05 | 763 3 | 58.7 | 14.8 | 59 | SSW | 15 | 6.7 | ..... | ..... | 10 | ..... | ..... | 0.04 | 1.0 | Dull | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 29.73 | 755.1 | 45 | 7.2 | ..... | S | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0.3 | 8. | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.66 | 753.4 | 37 | 2.8 | ..... | W | ..... | ..... | 6 | 3 | 3 | W | ..... | ..... | ..... | ..... | Robert Burnet. |

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day,) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day,) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 35° 54', E. 14° 30' | ..... | ..... | 30.00‡ | 762.0‡ | 52 | 11.1 | ..... | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Capt. W. J. L. Wharton. |
| Brig Alliance, N. 11° 57', W. 46° 05' | ..... | ..... | 29.97‡ | 761.2‡ | 79.5 | 26.4 | ..... | SE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Showery | Capt. W. Scott. |
| S. S. Amanda, N. 12° 56', E. 45° 47' | ..... | ..... | 29.85‡ | 758.2‡ | 77.5 | 25.3 | ..... | Calm | ..... | ..... | 0 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | Capt. B. Boyes. |
| Barque Belle Isle, N. 23° 05', W. 84° 40' | ..... | ..... | 30.20 | 767.1 | 71 | 21.7 | ..... | ESE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 4 | NE | Showery | Capt. A. J. Brown. |
| Ship British Commodore, N. 43° 05', W. 37° 00' | ..... | ..... | 30.36 | 771.1 | 53 | 11.7 | ..... | SSE | ..... | ..... | 5 | ..... | 6 | ..... | ..... | 4 | NW | D. clouds | Capt. J. W. Thorne. |
| —— City of Agra, S. 0° 23', W. 28° 59' | ..... | ..... | 29.92‡ | 760.0‡ | 82 | 27.2 | ..... | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Capt. Thos. Young. |
| Barque Commewyne, N. 17° 24', W. 56° 18' | ..... | ..... | 29.98‡ | 761.5‡ | 77.5 | 25.3 | ..... | NW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Capt. A. Buchan. |
| —— Denbighshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Murdoch. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole, N. 43° 06' W. 15° 14' | ..... | ..... | 30.31‡ | 769.9‡ | 62.6 | 11.4 | ..... | NW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven, N. 8° 59', E. 66° 29' | ..... | ..... | 29.84‡ | 757.9‡ | 80 | 26.7 | ..... | N | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Capt. C. W. Pearson. |
| S. S. Wyberton, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.27 | 667.2 | 29.99 | 761.7 | 67.6 | 19.8 | 89 | SE | ..... | ..... | 2 | ..... | 8s | ..... | NE | Inap. | Inap. | ..... | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.74 | 755.4 | 29.79 | 756.6 | 40.1 | 4.5 | 70 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Farôe | 29.91 | 759.8 | 29.93 | 760.3 | 36.9 | 2.7 | 87 | WNW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.54 | 750.4 | 29.59 | 751.5 | 3.2 | —16.0 | 100 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Farôe) | 29.34 | 745.2 | 29.37 | 746.1 | 37.0 | 2.8 | 91 | SE | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | |
| Vestervig | 29.66 | 753.2 | 29.82 | 757.5 | 36.0 | 2.2 | 93 | W | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alengon, Normal School | 29.77 | 756.2 | 30.32 | 770.2 | 48.9 | 9.4 | 92 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Colignon, Director. |
| Amiens, Normal School | 30.08 | 764.0 | 30.19 | 766.8 | 55.4 | 13.0 | 75 | SW | ..... | ..... | 1 | ..... | 2 | ..... | E | 0.04 | 1. | Slightly cl'dy | Bonvallet, Director. |
| Avignon, Normal School | 30.27 | 768.8 | 30.35 | 770.8 | 58.1 | 14.5 | 45 | NNE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | M. Giraud, Director. |
| Bar-sur-Seine | 29.73 | 755.2 | 30.30 | 769.7 | 49.8 | 9.9 | 71 | SW | ..... | ..... | 1 | ..... | 10 | ..... | SW | 0 | 0 | Covered | C. Saillard, Director. |
| Beauvais, Normal School | 30.00 | 761.9 | 30.29 | 769.3 | 50.9 | 10.5 | 69 | N | ..... | ..... | 1 | ..... | 10 | ..... | NNW | 0 | 0 | Covered | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.46 | 748.2 | 30.37 | 771.5 | 45.1 | 7.3 | 82 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.185 | 4.7 | Covered | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.52 | 749.9 | 30.44 | 773.3 | 44.6 | 6.9 | 77 | N | ..... | ..... | 1 | ..... | 10n | N | N | 0 | 0 | Covered | M. Marlot, Director. |
| Bourges, Normal School | 29.60 | 751.8 | 30.15 | 765.8 | 53.2 | 11.8 | 75 | W | ..... | ..... | 4 | ..... | 10 | W | W | 0 | 0 | Covered | A. Waquet, Director. |
| Brest, Naval Observatory | 29.98 | 761.6 | 30.23 | 767.8 | 49.6 | 9.8 | 92 | NE | ..... | ..... | 3 | ..... | 10 | ..... | NE | 0.089 | 2.25 | Raining | M. de Rermaree, Director |
| Carcassonne, Normal School | 29.91 | 759.8 | 30.34 | 770.6 | 57.9 | 14.4 | 70 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | September, Director. |
| Caen, Normal School | 30.24 | 768.0 | 30.31 | 769.9 | 48.2 | 9 | 71 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.04 | 1. | Covered | M. Lair, Director. |
| Charires, Normal School | 29.67 | 753.6 | 30.25 | 768.3 | 48.6 | 9.2 | 84 | W | ..... | ..... | 1 | ..... | 10 | ..... | E | ..... | ..... | Raining | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.98 | 761.6 | 30.31 | 769.9 | 47.6 | 8.6 | 92 | SW | ..... | ..... | 3 | ..... | 8 | SW | SW | 0 | 0 | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 29.98 | 786.0 | 30.36 | 771.2 | 48.6 | 9.2 | 61 | NW | ..... | ..... | 1 | ..... | 10 | ..... | NW | 0 | 0 | ..... | Alluard, Director. |
| Commercy, Normal School | 29.41 | 746.9 | 30.28 | 769.2 | 46.0 | 7.8 | 94 | W | ..... | ..... | 2 | ..... | 8kn | ..... | W | ..... | ..... | Light rain | Dr. Coulet, Director. |
| Commune de Gréasque* | 29.21 | 742.0 | 30.36 | 771.0 | 51.4 | 10.8 | 56 | SW | ..... | ..... | 2 | ..... | 8 | ..... | S | 0 | 0 | ¾ covered | M. Kina, Director. |
| Grenoble, Normal School | 29.57 | 751.1 | 30.36 | 771.1 | 48.6 | 9.2 | 71 | ENE | ..... | ..... | 8 | ..... | 1ck | N | ..... | 0 | 0 | Slightly cl'dy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 30.12 | 765.0 | 30.32 | 770.1 | 50.0 | 10.0 | 86 | SW | ..... | ..... | 1 | ..... | 8 | ..... | S | 0 | 0 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 30.03 | 762.7 | 30.34 | 770.6 | 51.8 | 11 | 80 | WNW | ..... | ..... | 3 | ..... | 8 | ..... | WNW | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.44 | 747.8 | 30.39 | 771.8 | 44.8 | 7.1 | 83 | S | ..... | ..... | 2 | ..... | 5 | ..... | NE | 0 | 0 | Cloudy | Baudry, Director. |
| Lorient, Naval Observatory | 30.23 | 767.7 | 30.32 | 770.2 | 52.2 | 11.2 | 95 | SW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.020 | 0.5 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director. |
| Mirecourt, Normal School | 29.18 | 741.2 | 30.29 | 769.4 | 45.5 | 7.5 | 85 | NNE | ..... | ..... | 1 | ..... | n | ..... | SSW | 0 | 0 | ..... | M. Barbier, Director. |
| Nismes, Normal School | 30.12 | 765.1 | 30.33 | 770.3 | 59.7 | 15.4 | 35 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Boyer, Director. |
| Privas, Normal School | 29.29 | 744.0 | 30.37 | 771.5 | 53.6 | 12 | 38 | N | ..... | ..... | 1 | ..... | c | ..... | N | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 25.84 | 643.6 | ..... | ..... | 30.6 | — 0.8 | 100 | E | ..... | ..... | 2 | ..... | 2c | ..... | ..... | 0 | 0 | Slightly cl'dy | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.39 | 771.9 | 30.42 | 772.7 | 51.1 | 10.6 | 77 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 30.19 | 766.9 | 30.28 | 769.1 | 50.9 | 10.5 | 62 | NW | ..... | ..... | 1 | ..... | 5 | ..... | W | 0.028 | 0.7 | Cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 30.26 | 768.7 | 30.30 | 769.5 | 44.2 | 6.8 | 97 | NE | ..... | ..... | 2 | ..... | 8 | NE | NE | ..... | ..... | Light rain | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 30.11 | 764.9 | 30.28 | 769.1 | 49.8 | 9.9 | 89 | WSW | ..... | ..... | 1 | ..... | ..... | ..... | W | 0.098 | 2.5 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 29.31 | 744.5 | 30.41 | 772.4 | 53.6 | 12 | 84 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Huguet, Director. |
| Versailles Observatory | 29.78 | 756.4 | 30.27 | 768.9 | 48.4 | 9.1 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.107 | 2.72 | Light rain | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.63 | 752.7 | 30.36 | 771.1 | 49.1 | 9.5 | 85 | SW | ..... | ..... | 1 | ..... | 10 | ..... | S | 0 | 0 | Covered | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.91 | 759.7 | 29.94 | 760.4 | 75.2 | 24 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchesi. |
| Lyons Obs'y, (Park Station) | 29.76 | 755.8 | 30.40 | 772.1 | 46.2 | 7.9 | 79 | NE | ..... | ..... | 1 | 9c | ..... | ..... | ..... | 0 | 0 | ..... | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 25.06 | 636.6 | 30.38 | 771.6 | 44.6 | 7.0 | 40 | N | 9.4 | 4.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | 30.34 | 770.5 | 56.1 | 13.4 | 62 | ENE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | Almost cov. | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 30.00 | 761.9 | ..... | ..... | 49.8 | 9.9 | 90 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Inap. | Inap. | Light rain | Marié Davy, Director. |
| Perpignan | 30.23 | 767.8 | 30.34 | 770.5 | 58.1 | 14.5 | 56 | SE | 11.2 | 5.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.69 | 576.4 | ..... | ..... | 31.3 | — 0.4 | ..... | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Gen'l de Nansouty. |
| Toulouse, Observatory | 29.69 | 754.0 | 30.42 | 772.6 | 48.6 | 9.2 | 78 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | M. Mercadier Juller. |
| Tours | 30.14 | 765.6 | 30.34 | 770.6 | 53.6 | 12.0 | 71 | WNW | ..... | ..... | 1 | ..... | 10 | ..... | W | 0 | 0 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.43 | 772.9 | 30.40 | 773.6 | 32.7 | 0.4 | 90 | NE | 4.9 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens, S. J. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque on the scale 0 to 4 and Brest on the scale 0 to 10; Mirecourt apparently gives cloud direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi. (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-12. | Clouds. Amount. Up'er 0-10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.37 | 745.9 | 30.22 | 767.5 | 40.1 | 4.5 | 81 | S | | | 4 | | 10 | S | | | | Raining | Prof. Dr. Hoh. |
| Berlin | 29.89 | 759.1 | 30.07 | 763.6 | 43.5 | 6.4 | 78 | SW | | | 2 | | 4 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.62 | 752.3 | 30.15 | 765.8 | 42.1 | 5.6 | 68 | SW | | | 3 | | 9 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.78 | 756.5 | 30.23 | 767.7 | 44.2 | 6.8 | 76 | SW | | | 2 | | 10 | SW | | 0 | 0 | | Albert Senz. |
| Cassel | 29.49 | 749.0 | 30.10 | 764.5 | 46.4 | 8.0 | 62 | WNW | | | 4 | | 5 | NW | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 30.00 | 762.0 | 30.16 | 766.1 | 50.2 | 10.1 | 58 | W | | | 3 | | 5k | | | 0.04 | 1. | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.35 | 758.3 | 30.23 | 767.9 | 45.1 | 7.3 | | SW | | | 2 | | 10 | | | Inap. | Inap. | | Physical Society. |
| Friedrichshafen | 28.85 | 732.7 | 30.25 | 768.4 | 41.5 | 5.3 | 47 | SW | | | 5 | | 5 | | | 0.386 | 9.8 | Raining | M. Wilhelm. |
| Hamburg | 29.95 | 760.8 | 30.02 | 762.6 | 44.1 | 6.7 | 73 | WNW | | | 5 | | 10 | | | 0.083 | 2.1 | Squally | Captain F. Hegemann. |
| Kiel | 29.95 | 760.7 | 29.96 | 761.1 | 42.4 | 5.8 | 81 | SW | | | 6 | | 10 | | | 0.145 | 3.68 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.84 | 757.8 | 29.92 | 760.0 | 38.3 | 3.5 | 83 | SW | | | 6 | | 10 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 29.89 | 759.3 | 38.3 | 3.5 | | SW | | | 6 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.71 | 754.5 | 30.14 | 765.6 | 41.4 | 5.2 | 75 | SW | | | 4 | | 10 | | | 0.028 | 0.7 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.82 | 757.3 | 29.86 | 758.5 | 35.4 | 1.9 | 90 | SSW | | | 6 | | 10n | | | | | Rainy | Skalweit. |
| Neufahrwasser | 29.93 | 760.1 | 29.94 | 760.5 | 39.4 | 4.1 | 82 | SW | | | 4 | | 10 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.83 | 757.7 | 30.13 | 765.3 | 42.6 | 5.9 | 79 | SW | | | 2 | | 10 | | | 0.161 | 4.1 | Raining | Dr. Magener. |
| Strassburg (in Alsace) | 29.75 | 755.7 | 29.32 | 770.1 | 46.4 | 8 0 | 74 | SSW | | | 3 | | 10 | WSW | | | | Raining | Imp. University Observatory. |
| Stuttgart | 29.28 | 743.7 | 29.24 | 768.0 | 44.2 | 6.8 | 70 | W | | | 1 | | 10 | | | 0.016 | 0.4 | Raining | Prof. Schoder. |
| Treves, (Trier) | | | | | | | | | | | | | | | | | | | Prof. Fiesch. |
| Weissenburg, (Bavaria) | 28.78 | 729.7 | 30.30 | 769.7 | 38.1 | 3.4 | 76 | Calm | 0 | 0 | | | 10 | | | 0 | 0 | | Dr. Van Bebber. |
| Wustrow, Naval School | 29.91 | 759.8 | 29.94 | 760.4 | 36.7 | 2.6 | 89 | SW | | | 5 | | 10s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.55 | 750.6 | 29.95 | 760.7 | 53.2 | 11.8 | | NE | | | 4.0 | | | | | | | ⅛ Clear | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Deesa | 29.38 | 746.3 | 29.85 | 758.2 | 86.8 | 30.4 | 17 | W | 6.4 | 2.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.84 | 757.9 | 29.88 | 758.9 | 79.3 | 26.3 | 71 | WNW | 15 | 6.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.16 | 740.5 | 29.91 | 759.8 | 69.6 | 20.9 | 39 | Calm | 1.3 | 0.6 | | | 10 | | | 0 | 0 | Overcast | |
| Belgaum | 27.33 | 694.3 | 29.84 | 758.0 | 82.3 | 27.9 | 58 | SW | 17 | 7.6 | | | 2 | | ENE | 0 | 0 | | |
| Roorkee | 28.98 | 736.2 | 29.90 | 759.4 | 70.2 | 21.2 | 51 | NW | 3.0 | 1.3 | | | 6 | | | 0 | 0 | D. clouds | |
| Agra | 29.35 | 745.5 | 29.92 | 759.9 | 80.7 | 27.1 | 29 | NW | | | | | 4 | | N | 0 | 0 | | |
| Nagpur | 28.84 | 732.4 | 29.87 | 758.7 | 85.6 | 29.8 | 23 | Calm | 1.5 | 0.7 | | | | | | 0 | 0 | Blue sky | |
| Lucknow | 29.52 | 749.8 | 29.90 | 759.5 | 76.5 | 24.7 | 28 | NNW | 0.9 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.60 | 751.9 | 29.92 | 760.0 | 76.1 | 24.5 | 34 | Calm | 2.1 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.73 | 755.2 | 29.92 | 759.9 | 77.5 | 25.3 | 49 | W | 0.9 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.88 | 708.1 | 29.91 | 759.6 | 77.0 | 23.9 | 17 | NW | 5.3 | 2.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.82 | 757.4 | 29.90 | 759.6 | 83.0 | 28.3 | 48 | ESE | 2.0 | 0.9 | | | | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.90 | 759.3 | 29.92 | 759.9 | 74.7 | 23.7 | 85 | W | 3.0 | 1.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.49 | 749.1 | 29.89 | 759.1 | 75.1 | 23.9 | 31 | WNW | 1.3 | 0.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.82 | 757.3 | 29.91 | 759.7 | 76.8 | 24.9 | 48 | W | 6.8 | 3.0 | | | 0 | | | 0 | 0 | | |
| Sibsagar | 29.66 | 750.9 | 29.90 | 759.6 | 70.4 | 21.3 | 73 | NE | 2.9 | 1.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.51 | 724.2 | 29.88 | 759.1 | 78.8 | 26.0 | 28 | Calm | 1.3 | 0.6 | | | 0 | | | 0 | 0 | Blue sky | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm, higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,561 ft., or 411.5 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.87 | 758.8 | 30.30 | 769.5 | 46.2 | 7.9 | 47 | SW | 0.6 | 0.3 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.76 | 756.0 | 30.30 | 769.6 | 50.7 | 10.4 | 43 | SE | ..... | ..... | 1 | ..... | 8 | SW | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 30.20 | 767.0 | 30.31 | 769.9 | 48.7 | 9.3 | 43 | NNW | 4.3 | 1.9 | ..... | ..... | 10 | NE | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalleri | 29.40 | 746.8 | 30.34 | 770.5 | 46.8 | 8.2 | 59 | NNE | 1.3 | 0.6 | ..... | ..... | 5 | NNE | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 30.12 | 765.1 | 30.32 | 770.0 | 52.9 | 11.6 | 50 | W | 2.5 | 1.1 | ..... | ..... | 8 | N | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 28.86 | 720.4 | 30.32 | 770.2 | 43.0 | 6.1 | 59 | WNW | ..... | ..... | 2 | ..... | 7 | N | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 30.25 | 768.4 | 30.30 | 769.7 | 47.5 | 8.6 | 42 | N | 15.0 | 6.7 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 30.04 | 763.0 | 30.30 | 769.7 | 50.9 | 10.5 | 23 | N | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Cav. F Meucci |
| Leghorn | 30.22 | 767.5 | 30.30 | 769.7 | 51.1 | 10.6 | 37 | W | ..... | ..... | 6 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 30.04 | 762.9 | 30.22 | 767.5 | 50.2 | 10.1 | 25 | N | 13.7 | 6.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.74 | 755.3 | 30.00 | 761.9 | 46.4 | 8.0 | 78 | NE | 24.8 | 11.1 | ..... | ..... | 8 | NE | ..... | 0.157 | 4.0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.13 | 739.8 | 30.03 | 762.8 | 46.8 | 8.2 | 70 | NW | 3.1 | 1.4 | ..... | ..... | 6 | ..... | ..... | 0.106 | 2.7 | ..... | Prof. D. Conti. |
| Cagliari | 30.02 | 762.4 | 30.21 | 767.4 | 55.2 | 12.9 | 30 | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.84 | 757.9 | 30.10 | 764.5 | 48.7 | 9.3 | 43 | N | 6.3 | 2.8 | ..... | ..... | 10 | ..... | ..... | 0.244 | 6.2 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.93 | 760.3 | 30.01 | 762.2 | 49.5 | 9.7 | 51 | NW | 11.2 | 5.0 | ..... | ..... | 10 | E | ..... | 0.299 | 7.6 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.59 | 751.6 | 30.15 | 765.7 | 39.9 | 4.4 | ..... | N | 9.4 | 4.2 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 29.99 | 761.7 | 30.01 | 762.2 | 44.1 | 6.7 | 67 | NNE | 2.8 | 1.2 | ..... | ..... | 10n | ..... | ..... | 0.020 | 0.51 | Light rain... | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.97 | 761.2 | 30.18 | 766.6 | 39.3 | 4.1 | 62 | NW | 9.5 | 4.2 | ..... | ..... | 10ck;s | N | N | 0.020 | 0.51 | Cloudy..... | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.83 | 757.7 | 29.90 | 759.4 | 39.7 | 4.3 | 91 | ENE | 3.3 | 1.5 | ..... | ..... | 10s;ck | ..... | ..... | 0.255 | 6.48 | Cloudy..... | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.18 | 639.5 | 30.30 | 769.6 | 48.6 | 9.2 | 52 | Calm | ..... | ..... | 0 | 0 | 9 | ..... | SW | 0 | 0 | Very cloudy | Prof. L. Peres. |
| Leon | 24.55 | 623.5 | 30.21 | 767.4 | 52.0 | 11.1 | 70 | S | ..... | ..... | 2 | 6c | 0 | ..... | ..... | Inap. | Inap | ½ clouded... | Prof. M. Leal |
| Mexico, Central Obs'y | 23.15 | 588.1 | 30.37 | 771.4 | 42.8 | 6.0 | 63 | Calm | 0 | 0 | ..... | 0 | 1ck | ..... | W | 0 | 0 | Fine..... | The Staff. |
| Pabellon, (Aguascallentes) | ..... | ..... | ..... | ..... | 48.7 | 9.3 | 61 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | M. V. de Leon, M. E. |
| Tlacotalpam | 30.17 | 766.4 | 30.18 | 766.7 | 68 | 20 | 91 | W | ..... | ..... | 2 | 2 | 6 | N | NE | 0.071 | 1.8 | Threatening | M. M. Cházaro. |
| San Luis Potosi | 24.25 | 616.9 | 30.28 | 769.0 | 43.0 | 6.1 | 29 | ESE | ..... | ..... | 1 | 3 | 5 | W | ESE | 0 | 0 | Foggy ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.46 | 596.0 | 30.23 | 767.8 | 41.0 | 5.0 | 7 | ENE | 1.8 | 0.8 | ..... | ..... | 1c | ..... | WNW | 0 | 0 | Light clouds | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.45 | 722.7 | 30.11 | 764.8 | 74.3 | 23.5 | 70 | NE | ..... | ..... | 1 | 0 | 2 | ..... | W | 0 | 0 | Clear..... | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1893 m., or 6210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2201 m., or 7220.9 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 532 m., or 1745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm. *Rain-fall belongs to the 3rd, 4th and 5th.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.24 | 768.1 | 30.24 | 768.1 | 44.8 | 7.1 | ..... | W | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.091 | 2.3 | ..... | |
| Greningen | 30.06 | 763.5 | 30.11 | 764.9 | 42.6 | 5.9 | ..... | NW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 30.12 | 765.1 | 30.12 | 765.1 | 40.6 | 4.8 | ..... | WSW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 30.21 | 767.2 | 30.21 | 767.2 | 43.7 | 6.5 | 84 | W | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.14 | 765.5 | 30.19 | 766.7 | 49.5 | 9.7 | 69 | WNW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.067 | 1.7 | Cloudy..... | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instru'tal error and temperature. Inches. | Barometer. Corrected for instru'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.63 | 752.7 | 29.69 | 754.1 | 35.6 | 2.0 | 75 | NNW | 18.8 | 8.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.47 | 748.5 | 29.51 | 749.5 | 29.8 | — 1.2 | 69 | NNW | 31 | 14 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.48 | 748.8 | 29.63 | 752.7 | 35.6 | 2.0 | 57 | NNW | 18 | 8 | ..... | ..... | 0 | ..... | ..... | 0.553 | 14.8 | ..... | |
| Tromsö | 29.21 | 742.0 | 29.26 | 743.1 | 28.9 | — 1.7 | 84 | N | 31 | 14 | ..... | ..... | 10 | ..... | ..... | 0.047 | 1.2 | Light snow. | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.19 | 766.9 | 30.39 | 771.8 | 54.5 | 12.7 | 83 | NNE | 16.8 | 7.5 | ..... | ..... | 6 | ..... | ..... | 0.315 | 8.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.31 | 744.4 | 30.33 | 770.3 | 63.5 | 17.5 | 45 | SW | 1.3 | 0.6 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.30 | 769.5 | 30.38 | 771.7 | 64.4 | 18.0 | 50 | SW | 4.9 | 2.2 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. da Cunha. |
| Lisbon, Observatory | 30.02 | 762.6 | 30.39 | 771.8 | 56.8 | 13.8 | 70 | SSW | 4.9 | 2.2 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.30 | 769.7 | 30.37 | 771.5 | 56.5 | 13.6 | 91 | NNE | 13.0 | 5.8 | ..... | ..... | 10 | ..... | ..... | 0.921 | 23.4 | Raining ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | A. G. da Silva Costa Com'd.t. |
| D. Fernando | ..... | ..... | ..... | A. M. de Sande, Comd't. |
| India | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | J. F. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | 2 | W | D. clouds..... | A. J. de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | J. T. d'Oliveria, Com'd't |
| Rio Lima, Capt. S. C. da SilvaCosta, Porto Praya, Cape Verd Islands. | ..... | ..... | D. clouds.... | A. Ferreira, 2nd Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | Blue sky..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | L. Ribeiro da Costa, Com'd't. |
| Tejo, Macao, China | 1 | ..... | D. clouds..... | J. M. T. Guimaraes, Com'd't. |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.70 | 754.4 | 30.14 | 765.5 | 42.1 | 5.6 | 54 | SSE | 13 | 6 | ..... | ..... | 1c | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.68 | 753.8 | 30.11 | 764.8 | 40.1 | 4.5 | 65 | SSW | 13 | 6 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.47 | 748.4 | 29.71 | 754.7 | 38.1 | 3.4 | 85 | SSW | 18 | 8 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.59 | 751.5 | 29.80 | 751.9 | 37.4 | 3.0 | 87 | SW | 27 | 12 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.61 | 752.0 | 30.28 | 769.6 | 33.1 | 0.6 | 73 | ENE | 7 | 3 | ..... | ..... | 10ks;s; n] | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 30.18 | 766.6 | 30.25 | 768.4 | 41.9 | 5.5 | 83 | ENE | 18 | 8 | ..... | ..... | 8cs | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.16 | 766.1 | 30.18 | 766.6 | 39.2 | 4.0 | 85 | ENE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.65 | 753.1 | 30.23 | 767.7 | 30.9 | — 0.6 | 79 | S | 7 | 3 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.98 | 761.4 | 30.19 | 766.7 | 39.9 | 4.4 | 62 | E | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.34 | 745.1 | 29.36 | 745.6 | 32.7 | 0.4 | 89 | S | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Capt. Sseliwerstow. |
| Tiflis | 28.54 | 724.9 | 29.95 | 760.6 | 56.7 | 13.7 | 38 | NW | 13 | 6 | ..... | ..... | 5k | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.16 | 766.0 | 30.08 | 763.9 | 40.5 | 4.7 | 53 | NNE | 7 | 8. | ..... | ..... | 7ck;s | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.81 | 757.1 | 30.32 | 770.0 | 23.4 | — 4.8 | 52 | SSW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 30.02 | 762.4 | 30.31 | 769.8 | 19.2 | — 7.1 | 60 | Calm | 0 | 0 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Ekaterinburg | 29.24 | 742.6 | 30.28 | 769.0 | 18.9 | — 7.8 | 69 | SE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.61 | 752.0 | 29.84 | 758.0 | 55.4 | 13.0 | 22 | NW | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.29 | 718.6 | 29.95 | 760.7 | 68.0 | 20.0 | 21 | NW | 9 | 4 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 30.04 | 762.9 | 30.58 | 776.8 | 16.3 | — 8.7 | 67 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.40 | 772.2 | 30.72 | 780.2 | 19.2 | — 7.1 | 74 | NNW | 2 | 1 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 30.30 | 769.7 | 30.44 | 773.3 | 28.4 | — 2.0 | 32 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend 455? m, or 1,492.7? ft., Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.21 | 767.3 | 30.32 | 770.0 | 56.1 | 13.4 | 66 | ESE | 2.6 | 1.17 | ..... | ..... | 4k | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 30.28 | 769.2 | 30.34 | 770.6 | 61.3 | 16.3 | 66 | NE | 2.2 | 0.99 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.32 | 693.9 | ..... | ..... | 55.8 | 13.2 | 64 | N | 1.8 | 0.78 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 28.06 | 712.6 | ..... | ..... | 62.1 | 16.7 | 53 | SW | 4.5 | 2.00 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | The Staff. |
| Murcia, Met. Obs'y | 30.15 | 765.9 | 30.30 | 769.7 | 70.3 | 21.3 | 50 | E | 1.6 | 0.72 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.42 | 747.2 | 30.34 | 770.5 | 51.3 | 10.7 | 84 | SW | 0 | 0 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Almost cov'd | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 30.17 | 766.3 | 30.24 | 768.0 | 64.7 | 18.2 | 85 | Calm | 0 | 0 | ..... | ..... | 8pk | ..... | ENE | 0 | 0 | Fair..... | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.88 | 759.0 | 29.93 | 760.3 | 82.0 | 27.6 | 68 | E | 4.5 | 2.0 | ..... | 5k | 4k | N | N | 0 | 0 | Covered.. ... | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.23 | 767.8 | 30.33 | 770.4 | 62.6 | 17.0 | 59 | ESE | 3.7 | 1.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | ..... | Capt. C. Fujasca, R. N. Dir. |
| San Juan de Porto Rico, W. I. | 29.96 | 760.9 | 30.05 | 763.2 | 75.2 | 24.0 | 76 | NE | 9.4 | 4.21 | ..... | 4k | 3k | NE | NE | 0.295 | 7.50 | Cloudy..... | Leonardo de Tejeda, Ch'f. Eng'n. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.19 | 741.7 | 29.23 | 742.4 | 24.4 | — 4.2 | ..... | SW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0.669 | 17.0 | ..... | |
| Umea | 29.18 | 741.1 | 29.23 | 742.4 | 31.3 | — 0.4 | 100 | NW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.31 | 744.4 | 29.36 | 745.7 | 34.2 | 1.2 | 62 | WNW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0.106 | 2.7 | ..... | |
| Stockholm | 29.24 | 742.6 | 29.41 | 747.1 | 37.8 | 3.2 | 97 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.146 | 3.7 | ..... | |
| Wisby | 29.54 | 750.3 | 29.60 | 751.8 | 36.3 | 2.4 | 93 | WSW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.508 | 12.9 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.31 | 744.5 | 29.39 | 746.4 | 35.6 | 2.0 | 93 | N | 13.2 | 5.9 | ..... | ..... | 10 | ..... | ..... | 0.076 | 1.93 | Snowing | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.90 | 734.0 | 30.36 | 771.1 | 43.0 | 6.1 | 92 | NNE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | Vapory | The Observatory. |
| Zurich | 28.67 | 728.1 | 30.34 | 770.6 | 43.2 | 6.2 | 68 | W | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0.354 | 9.0 | Fair | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +8.8 mm.; Thermometer, —0.2 Cent.; Relative Humidity, +28 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.10 | 764.5 | 45.3 | 7.4 | 69 | NE | 19 | 8.5 | ..... | ..... | 7 | ..... | NE | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.24 | 768.0 | 62.6 | 17.0 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.97 | 761.1 | 44.2 | 6.8 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.24 | 6 | Covered | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.73 | 755.1 | 29.85 | 758.1 | 62.2 | 16.8 | 68 | WSW | ..... | ..... | 2 | ..... | 1ks | ..... | SW | 1.10 | 27.9 | D. clouds | Prof. C. V. A. Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.48 | 774.2 | 30.55 | 776.0 | — 1.5 | —18.6 | ..... | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Hon. J. Ferguson. |
| Brockville, Ontario | 29.98 | 761.5 | 30.32 | 770.1 | 5 | —15.0 | ..... | NE | 3 | 1.3 | ..... | ..... | 10n | ..... | NE | 0.01 | 0.3 | Light snow | W. R. Bigg. |
| *Chatham, N. B | 30.51 | 774.9 | 30.58 | 776.7 | — 3 | —19.4 | 89 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 30.47 | 773.9 | 30.52 | 775.2 | 8 | —13.3 | 89 | N | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 30.07 | 763.8 | 30.29 | 769.4 | 2.0 | —16.7 | 100 | E | ..... | ..... | 4 | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.20 | 5.1 | ..... | W. H. Bevis. |
| *Father Point, Quebec | 30.59 | 777.0 | 30.61 | 777.5 | — 7 | —21.7 | 92 | S | 5 | 2.2 | ..... | 1k | 1s | Calm | Calm | 0 | 0 | Clear | J. McWilliams. |
| Fredericton, N. B | 30.56 | 776.2 | 30.67 | 779.0 | — 1.9 | —18.8 | 97 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | Prof. Harrison. |
| *Fort Garry Manitoba | 29.26 | 742.9 | 30.10 | 766.1 | 6 | —14.4 | 93 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Stewart. |
| Granton, Ontario | 28.82 | 732.0 | 29.97 | 761.2 | 30 | — 1.1 | ..... | SE | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.10 | 2.5 | Cloudy | James Grant. |
| *Halifax, N. S | 30.35 | 770.9 | 30.50 | 774.7 | 8 | —13.3 | 82 | NW | 9 | 4.0 | ..... | 0 | 2ks | ..... | N | 0 | 0 | Fair | F. Allison, M. A. |
| Hamilton, Ontario | 29.72 | 754.9 | 30.12 | 765.0 | 23.7 | — 4.6 | 93 | Calm | ..... | ..... | 0 | 10cs | 0 | ..... | ..... | 0.30 | 7.6 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.85 | 758.2 | 30.22 | 767.6 | 9 | —12.8 | 78 | NE | 18 | 8.0 | ..... | ..... | 10n | ..... | NE | 0.04 | 1.0 | Light snow | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.36 | 771.1 | 30.40 | 772.1 | 10.0 | —12.2 | 94 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 30.20 | 767.1 | 30.43 | 772.9 | — 1 | —18.3 | 81 | NE | 7 | 3.1 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | C. H. McLeod, C. E |
| *Parry Sound, Ontario | 29.80 | 744.2 | 30.05 | 763.3 | 12 | —11.1 | 90 | SE | 18 | 8.0 | ..... | ..... | 10n | ..... | SE | 0.08 | 2.0 | Cloudy | Rev. R. Mosley. |
| Peterboro, Ontario | 29.74 | 755.4 | 30.56 | 776.2 | 17.5 | — 8.1 | 76 | Calm | ..... | ..... | ..... | 0 | 6ks | ..... | ..... | 0 | 0 | Fair | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.84 | 745.2 | 30.08 | 764.0 | 25 | — 3.9 | 88 | E | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | 0.10 | 2.5 | Threatening | H. Morgan. |
| Port Hastings, N. S | 30.38 | 771.6 | 30.44 | 773.2 | 5.0 | —14.5 | ..... | NW | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.38 | 746.2 | 30.06 | 763.5 | 31 | — 0.6 | 95 | E | 14 | 6.3 | ..... | ..... | 10n | ..... | E | 0.22 | 5.6 | Light snow | M. Payne. |
| *Quebec, Quebec | 30.22 | 767.6 | 30.59 | 777.0 | — 3 | —19.4 | 83 | Calm | ..... | ..... | 0 | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.68 | 753.9 | 30.19 | 766.8 | 3 | —16.1 | 87 | E | 15 | 6.7 | ..... | ..... | 10n | ..... | ..... | 0.14 | 3.6 | Heavy snow | W. H. McIntyre. |
| St. Andrews, N. B | 30.53 | 775.4 | 30.58 | 776.7 | 4 | —15.6 | 77 | N | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| St. John, N. B | 30.43 | 772.9 | 30.62 | 777.7 | 3 | —16.1 | 73 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.23 | 742.4 | 29.98 | 761.5 | 27 | — 2.8 | 89 | S | 17 | 7.6 | ..... | ..... | 10s | ..... | ..... | 0.05 | 1.3 | Cloudy | K. Stewart. |
| Stayner, Ontario | 29.21 | 741.9 | 30.05 | 763.3 | 16 | — 8.9 | 84 | SE | 13 | 5.8 | ..... | ..... | 10n | ..... | SE | 0.45 | 11.4 | Threatening | R. J. Cole. |
| Stratford, Ontario | 28.70 | 729.0 | 30.05 | 763.3 | 23.2 | — 4.9 | 96 | SE | 7.0 | 3.1 | ..... | ..... | 10s | ..... | ..... | 0.20 | 5.1 | Overcast | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.36 | 771.1 | 30.40 | 772.1 | 8 | —13.3 | 67 | NW | 13 | 5.8 | ..... | 0 | 2ks | ..... | NW | 0.02 | 0.5 | Clear | T. C. Hill. |
| *Toronto, Ontario | 29.68 | 753.9 | 30.09 | 764.3 | 27 | — 2.8 | 96 | E | 15 | 6.7 | ..... | ..... | 10n | ..... | ..... | 0.10 | 2.5 | Light snow | Magnetic Observatory. |
| Windsor, N. S | 30.44 | 773.2 | 30.54 | 775.7 | 8.5 | —13.1 | 89 | NW | 8 | 3.6 | ..... | 8k | 0 | ..... | ..... | 0.05 | 1.3 | Cloudy | Prof. John E. Oram |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 17.0 | — 8.3 | 83 | NE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.30 | 7.6 | ..... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters, Stratford, 1,182 ft., or 360.3 meters.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Cloud. Amount. Up'er 0—10. | Cloud. Amount. Low'r 0—10. | Cloud. Direction. Upper. From— | Cloud. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 30.26 | 768.6 | 30.52 | 775.2 | 11 | —11.7 | 80 | S | 8 | 3.6 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Alpena, Michigan | 29.25 | 742.9 | 29.93 | 760.2 | 20 | — 6.7 | 70 | SW | 4 | 1.8 | | | 10s | | Calm | 0.10 | 2.5 | Cloudy | |
| Atlanta, Georgia | 29.22 | 742.2 | 30.40 | 772.1 | 49 | 9.4 | 71 | E | 8 | 3.6 | | | Fg;smk | | Calm | 0 | 0 | Foggy | |
| Atlantic City, New Jersey | 30.49 | 774.4 | 30.51 | 774.9 | 36 | 2.2 | 86 | SE | 12 | 5.4 | | 10k | 0 | S | | 0 | 0 | Cloudy | |
| Augusta, Georgia | 30.27 | 768.8 | 30.45 | 773.4 | 47 | 8.3 | 77 | N | 3 | 1.3 | | 2ck | Fog | N | Calm | 0 | 0 | Fair | |
| Baltimore, Maryland | 30.41 | 772.4 | 30.46 | 773.7 | 35 | 1.7 | 80 | NE | 4 | 1.8 | | 5c | Fog | Calm | Calm | 0 | 0 | Foggy | |
| Barnegat, New Jersey | 30.48 | 774.2 | 30.50 | 774.7 | 34 | 1.1 | 79 | SE | 15 | 6.7 | | 10k | 0 | SE | | 0 | 0 | Cloudy | |
| Bismarck, Dakota | 28.28 | 718.3 | 30.14 | 765.5 | 11 | —11.7 | 90 | NE | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Boerne, Texas | 28.74 | 730.0 | 30.06 | 763.5 | 61 | 16.1 | 94 | S | 4 | 1.8 | | | 10s | | S | 0 | 0 | Cloudy | |
| Boise City, Idaho | 26.81 | 681.0 | 29.77 | 756.1 | 51 | 10.6 | 53 | SE | 12 | 5.4 | | | 10s | | S | 0.21 | 5.3 | Cloudy | |
| Boston, Massachusetts | 30.40 | 772.1 | 30.57 | 776.5 | 18 | — 7.8 | 76 | NE | 9 | 4.0 | | 5k; hz | Haze | Calm;SE | Calm | 0 | 0 | Fair | |
| Brackettville, Texas | 29.08 | 738.6 | 30.11 | 764.8 | 63 | 17.2 | 83 | SE | 5 | 2.2 | | | 10s | | SE | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 29.13 | 739.9 | 30.20 | 767.1 | 17 | — 8.3 | 83 | SW | 13 | 5.8 | | 1cs | 0 | Calm | | 0 | 0 | Clear | |
| Brownsville, Texas | 30.16 | 766.1 | 30.21 | 767.3 | 66 | 18.9 | 95 | SE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Buffalo, New York | 29.31 | 744.5 | 30.03 | 762.8 | 33 | 0.6 | 100 | NE | 6 | 2.7 | | | 10n;fg | | Calm | 0.20 | 5.1 | Light rain | |
| Burkes, Arizona | | | | | 52 | 11.1 | 66 | Calm | | | 0 | 0 | 0 | | | 0 | 0 | Clear | |
| Burlington, Vermont | 30.14 | 765.5 | 30.46 | 773.7 | 9 | —12.8 | 46 | S | 8 | 3.6 | | | 10c | | Calm | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.87 | 758.7 | 30.27 | 768.8 | 55 | 12.8 | 74 | S | 6 | 2.7 | | 8c | Haze | W | Calm | 0 | 0 | Fair | |
| Camp Apache, Arizona | | | | | | | | | | | | | | | | | | | |
| Camp Grant, Arizona | 25.28 | 642.1 | 30.08 | 764.0 | 52 | 11.1 | 41 | SE | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Camp Verde, Arizona | | | | | 36 | 2.2 | 45 | W | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Campo, California | 27.52 | 699.0 | 30.09 | 764.3 | 29 | — 1.7 | 100 | E | 4 | 1.8 | | | Fog | | SW | 0 | 0 | Foggy | |
| Cape Hatteras, N. Carolina | 30.44 | 773.2 | 30.45 | 773.4 | 43 | 6.1 | 83 | NE | 12 | 5.4 | | Haze | Haze | | | 0 | 0 | Hazy | |
| Cape Henry, Virginia | 30.45 | 773.4 | 30.47 | 773.9 | 36 | 2.2 | 90 | NE | 1 | 0.4 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Cape Lookout, N. Carolina | 30.41 | 772.4 | 30.42 | 772.6 | 45 | 7.2 | 92 | NE | 18 | 8.0 | | 0 | Haze | | NE | 0 | 0 | Hazy | |
| Cape May, New Jersey | 30.44 | 773.2 | 30.47 | 773.9 | 37 | 2.8 | 71 | E | 8 | 3.6 | | 1c | 0 | W | | 0 | 0 | Clear | |
| Castroville, Texas | 29.44 | 747.8 | 30.14 | 765.5 | 65 | 18.3 | 78 | S | 8 | 3.6 | | | 10s | | S | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 30.35 | 770.9 | 30.41 | 772.4 | 50 | 10.0 | 65 | NE | 6 | 2.7 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Cheyenne, Wyoming | 24.07 | 611.4 | 30.01 | 762 2 | 34 | 1.1 | 90 | W | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Chicago, Illinois | 29.41 | 747.0 | 30.12 | 765.0 | 40 | 4.4 | 91 | NW | 6 | 2.7 | | | 10s | | Calm | 0.87 | 22.1 | Cloudy | |
| Cincinnati Ohio | 29.55 | 750.6 | 30.20 | 767.1 | 55 | 12.8 | 68 | SW | 9 | 4.0 | | | 10ks | | W | 0 | 0 | Threatening | |
| Cleveland, Ohio | 29.32 | 744.7 | 30.05 | 763.3 | 43 | 6.1 | 92 | S | 29 | 13.0 | | | 10n | | SW | 0.27 | 6.9 | Light rain | |
| Coleman City, Texas | 28.37 | 720.6 | 29.93 | 760.2 | 59 | 15.0 | 70 | SE | 4 | 1.8 | | 2c | 8ks | Calm | SE | 0 | 0 | Cloudy | |
| Columbus, Ohio | 29.31 | 744.5 | 30.17 | 766.3 | 40 | 4.4 | 82 | NW | 4 | 1.8 | | | 10n | | W | 0.13 | 3.3 | Light rain | |
| Concho, Texas | 28.25 | 717.5 | 29.92 | 760.0 | 57 | 13.9 | 57 | S | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Corsicana, Texas | 29.75 | 755.6 | 30.22 | 767.6 | 62 | 16.7 | 83 | SE | 5 | 2.2 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.53 | 750.0 | 30.19 | 766.8 | 37 | 2.8 | 90 | N | 7 | 3.1 | | | 10s | | Calm | 0.47 | 11.9 | Cloudy | |
| Deadwood, Dakota | 25.25 | 641.3 | | | 46 | 7.8 | 54 | SW | 16 | 7.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Decatur, Texas | 28.99 | 736.3 | 30.19 | 766.8 | 55 | 12.8 | 96 | SW | 16 | 7.2 | | | 10s | | S | 0 | 0 | Cloudy | |
| Denison, Texas | 29.36 | 745.7 | 30.15 | 765.8 | 59 | 15.0 | 88 | SW | 17 | 7.6 | | 10k | 0 | SW | | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.84 | 630.9 | 30.06 | 763.5 | 35 | 1.7 | 80 | S | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Des Moines, Iowa | 29.32 | 744.7 | 30.25 | 768.3 | 32 | 0.0 | 79 | Calm | 0 | 0 | | 0 | 1s | | NW | 0.05 | 1.3 | Clear | |
| Detroit, Michigan | 29.36 | 745.7 | 30.05 | 763.3 | 35 | 1.7 | 100 | SW | 6 | 2.7 | | | Fog | | SW | 0.35 | 8.9 | Dense fog | |
| Dodge City, Kansas | 27.46 | 697.5 | 29.78 | 756.4 | 43 | 6.1 | 100 | N | 12 | 5.4 | | | Fog | | N | 0 | 0 | Foggy | |
| Dubuque, Iowa | 29.48 | 748.8 | 30.21 | 767 3 | 35 | 1.7 | 80 | Calm | 0 | 0 | | 0 | Fog | | Calm | 0.06 | 1.5 | Foggy | |
| Duluth, Minnesota | 29.28 | 743.7 | 29.98 | 761.5 | 29 | — 1.7 | 89 | SW | 12 | 5.4 | | 0 | 0 | | | 0.04 | 1.0 | Clear | |
| Eagle Pass, Texas | 29.38 | 746.2 | 30.13 | 765.3 | 59 | 15.0 | 94 | SE | 4 | 1.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Eastport, Maine | 30.52 | 775.2 | 30.60 | 777.2 | 6 | —14.4 | 64 | N | 9 | 4.0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Edinburg, Texas | | | | | 65 | 18.3 | 89 | Calm | | | 0 | | Fog | | | 0 | 0 | Foggy | |
| El Paso, Texas | 26.36 | 669.5 | | | 54 | 12.2 | 38 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.30 | 744.2 | 30.03 | 762.8 | 40 | 4.4 | 100 | S | 12 | 5.4 | | | 10n | | Calm | 0.11 | 2.8 | Light rain | |
| Escanaba, Michigan | 29.25 | 742.9 | 29.93 | 760.2 | 24 | — 4.4 | 74 | SW | 8 | 3.6 | | 0 | 0 | | | 0.23 | 5.8 | Clear | |
| Florence, Arizona | 28.56 | 725.4 | 30.16 | 766.1 | 50 | 10.0 | 39 | W | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Buford, Dakota | 28.01 | 711.4 | | | 10 | —12.2 | 79 | E | 7 | 3.1 | | 2c | 0 | Calm | | 0 | 0 | Fair | |
| Fort Craig, New Mexico | 25.64 | 351.2 | 29.70 | 754.4 | 39 | 3.9 | 39 | NW | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.35 | 643.9 | 30.31 | 769.9 | 46 | 7.8 | 71 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.58 | 751.3 | 30.11 | 764.8 | 59 | 15.0 | 70 | S | 12 | 5.4 | | 2cs | 0 | W | | 0.04 | 1.0 | Clear | |
| Fort Griffin, Texas | 28.77 | 730.7 | 30.05 | 763.3 | 53 | 11.7 | 80 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.36 | 694.9 | | | 22 | — 5.6 | 72 | N | 4 | 1.8 | | 5c | 0 | Calm | | 0 | 0 | Fair | |
| Fort McKavett, Texas | 27.91 | 708.9 | 29.84 | 757.9 | 55 | 12.8 | 87 | S | 8 | 3.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | | | | | | | | | | | | | | | | | | | |
| Fort Sill, Indian Territory | 28.87 | 733.3 | 29.99 | 761.7 | 52 | 11.1 | 79 | SE | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Stevenson, Dakota | 28.16 | 715.3 | | | 2 | —16.7 | 86 | Calm | 0 | 0 | | 1c | 0 | Calm | | 0 | 0 | Fair | |
| Fredericksburg, Texas | 28.47 | 723.1 | 30.01 | 762.2 | 64 | 17.8 | 68 | S | 5 | 2.2 | | | 10ks | | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 30.24 | 768.1 | 30.28 | 769.1 | 63 | 17.2 | 94 | SE | 7 | 3.1 | | 0 | 8ks | | SE | 0 | 0 | Cloudy | |
| Graham, Texas | 29.02 | 737.1 | 30.07 | 763.8 | 57 | 13.9 | 81 | SE | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.42 | 747.2 | 30.09 | 764.3 | 37 | 2.8 | 81 | NW | 13 | 5.8 | | | 10s | | NW | 0.36 | 9.1 | Cloudy | |
| Indianapolis, Indiana | 29.36 | 745.7 | 30.14 | 765.5 | 52 | 11.1 | 86 | SW | 4 | 1.8 | | | 10n | | SW | 0.25 | 6.3 | Light rain | |
| Indianola, Texas | 30.23 | 767.8 | 30.26 | 768.6 | 63 | 17.2 | 94 | S | 3 | 1.3 | | 1cs | 0 | Calm | | 0 | 0 | Clear | |
| Jacksboro, Texas | 29.04 | 737.6 | 30.18 | 766.6 | 55 | 12.8 | 68 | S | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.34 | 770.6 | 30.36 | 771.1 | 52 | 11.1 | 86 | NE | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.52 | 749.8 | 30.14 | 765.5 | 44 | 6.7 | 92 | N | 4 | 1.8 | | | 10s | | Calm | 0.31 | 7.9 | Cloudy | |
| Key West, Florida | 30.23 | 767.8 | 30.26 | 768.6 | 69 | 20.6 | 85 | NE | 13 | 5.8 | | 10k | 0 | NE | | 0 | 0 | Cloudy | |
| Kittyhawk North Carolina | 30.43 | 772.9 | 30.46 | 773.7 | 40 | 4.4 | 91 | NE | 9 | 4.0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.36 | 745.7 | 30.40 | 772.1 | 48 | 8.9 | 85 | SE | 2 | 0.9 | | 10k | Sm'e | W | | 0 | 0 | Cloudy | |
| La Crosse, Wisconsin | 29.39 | 746.5 | 30.15 | 765.8 | 37 | 2.8 | 53 | NW | 4 | 1.8 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| La Mesilla, New Mexico | 26.20 | 665.5 | 30.35 | 770 9 | 42 | 5.6 | 58 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Laredo, Texas | 29.76 | 755.9 | 30.10 | 764.5 | 66 | 18.9 | 79 | SE | 3 | 1.3 | | | 10s | | SE | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.24 | 742.7 | 30.09 | 764.3 | 50 | 10.0 | 86 | E | 5 | 2.2 | | | 10s | | | 0.01 | 0.3 | Cloudy | |
| Los Angeles, California | 29.81 | 757.2 | 30.15 | 765.8 | 51.0 | 10.6 | 86 | S | 1 | 0.4 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Louisville, Kentucky | 29.65 | 753.1 | 30.21 | 767.3 | 55 | 12.8 | 68 | S | 10 | 4.5 | | 5c;k | 2s | Calm;SW | Calm | 0 | 0 | Fair | |
| Lynchburg, Virginia | 29.78 | 756.4 | 30.50 | 774.7 | 37 | 2.8 | 62 | E | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Madison, Wisconsin | 29.11 | 739.4 | 30.14 | 765.5 | 33 | 0.6 | 90 | W | 12 | 5.4 | | | Fog | | Calm | 0.05 | 1.3 | Cloudy | |
| Marquette, Michigan | 29.10 | 739.1 | 29.82 | 757.4 | 30 | — 1.1 | 57 | SW | 24 | 10.7 | | | 0 | | | 0.26 | 6.6 | Clear | |
| Mason, Texas | 28.54 | 724.9 | 30.30 | 769.6 | 60 | 15.6 | 88 | S | 6 | 2.7 | | | 0 | | S | 0 | 0 | Fair | |
| Memphis, Tennessee | 29.96 | 761.0 | 30.28 | 769.1 | 56 | 13.3 | 68 | S | 7 | 3.1 | | | 0 | Sm'e | Calm | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.35 | 745.5 | 30.10 | 764.5 | 37 | 2.8 | 81 | W | 10 | 4.5 | | | 0 | 1s | Calm | 0.09 | 2.3 | Clear | |
| Mobile, Alabama | 30.34 | 770.6 | 30.39 | 771.9 | 49 | 9.4 | 100 | S | 3 | 1.3 | | | Fog | | | 0 | 0 | Dense fog | |
| Montgomery, Alabama | 30.17 | 766.3 | 30.41 | 772.4 | 51 | 10.6 | 78 | SE | 2 | 0.9 | | | Fog | | Calm | 0 | 0 | Foggy | |
| Morgantown, West Virginia | 29.13 | 739.9 | 30.20 | 767.1 | 46 | 7.8 | 62 | W | 3 | 1.3 | | | 10ks | | Calm | 0 | 0 | Cloudy | |
| Mt. Washington, N. H. | 28.79 | 604.3 | 30.15 | 765.8 | 2 | —16.7 | 72 | NW | 18 | 8.0 | | | 10s | | Calm | 0.05 | 1.3 | Cloudy | |
| Nashville, Tennessee | 29.77 | 756.1 | 30.32 | 770.1 | 46 | 7.8 | 77 | Calm | 0 | 0 | | 5cs | Haze | | | 0 | 0 | Fair | |
| New Haven, Connecticut | 30.43 | 772.9 | 30.56 | 776.2 | 19 | — 7.2 | 80 | NE | 9 | 4.0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| New London, Connecticut | 30.54 | 775.7 | 30.59 | 777.0 | 23 | — 5.0 | 80 | NE | 6 | 2.7 | | | 8s | | Calm | 0 | 0 | Cloudy | |
| New Orleans, Louisiana | 30.28 | 769.1 | 30.34 | 770.6 | 50 | 10.0 | 93 | NE | 4 | 1.8 | | | Fog | | Calm | 0 | 0 | Foggy | |
| Newport, Rhode Island | 30.52 | 775.2 | 30.58 | 776.7 | 26 | — 3.3 | 63 | NE | 4 | 1.8 | | 5ck | 0 | NW | | 0 | 0 | Fair | |
| New York, New York | 30.35 | 770.9 | 30.55 | 776.0 | 27 | — 2.8 | 65 | E | 13 | 5.8 | | | 8s;sn' | | Calm | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 30.42 | 772.6 | 30.49 | 774.4 | 36 | 2.2 | 80 | NE | 3 | 1.3 | | Haze | 0 | | | 0 | 0 | Clear | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.24 | 691.9 | 29.92 | 760.0 | 31 | — 0.6 | 79 | NW | 8 | 3.6 | ... ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy..... | |
| Olympia, Washington Ter. | 29.20 | 741.7 | 29.24 | 742.7 | 38.2 | 3.4 | 91 | S | 4 | 1.8 | ..... | 0 | 5s | ..... | S | 0.28 | 7.1 | Fair..... | |
| Omaha, Nebraska | 29.04 | 737.6 | 30.18 | 766.6 | 34 | 1.1 | 79 | N | 4 | 1.8 | ..... ... | 0 | 0 | ..... ..... | ..... | 0 | 0 | Clear..... | |
| Oswego, New York | 29.87 | 758.7 | 30.22 | 767.6 | 23 | — 5.0 | 73 | SE | 17 | 7.6 | ... ..... | ..... | 10n | ..... | ..... | 0.03 | 0.8 | Light snow. | |
| Pembina, Dakota | 29.21 | 741.9 | 30.11 | 764.8 | 10 | —12.2 | 100 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Philadelphia, Pa | 30.43 | 772.9 | 30.48 | 774.2 | 32 | 0.0 | 79 | NE | 1 | 0.4 | ..... | 5ck;cs | 0 | W;Calm | ..... | 0 | 0 | Fair..... | |
| Phœnix, Arizona | 28.89 | 733 8 | 30.73 | 780.5 | 49 | 9.4 | 51 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Pike's Peak, Colorado | 17.83 | 452.9 | 30.04 | 763.0 | 18 | — 7.8 | 22 | SW | 40 | 17.9 | ..... | 0 | 2s | ..... | SW | 0 | 0 | Clear..... | |
| Pioche, Nevada | 23.99 | 609.3 | 29.76 | 755.9 | 42 | 5.6 | 50 | S | 4 | 1.8 | .. ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Pittsburg, Pennsylvania | 29.34 | 745.2 | 30.17 | 766.8 | 45 | 7.2 | 68 | SW | 4 | 1.8 | ..... | ..... ... | 10n | ..... | SW | 0.02 | 0.5 | Light rain.. | |
| Port Huron, Michigan | 29.28 | 743.7 | 29.96 | 761.0 | 34 | 1.1 | 100 | S | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.16 | 4.1 | Light rain... | |
| Portland, Maine | 30.57 | 776.5 | 30.63 | 778.0 | 17 | — 8.3 | 67 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy ..... | |
| Portland, Oregon | 29.30 | 744.2 | 29.40 | 746.7 | 43.0 | 6.1 | 87 | S | 5 | 2.2 | ..... | 0 | 8s | ... ..... | S | 0.41 | 10.4 | Clear..... | |
| Prescott, Arizona | 24.60 | 629.9 | 30.16 | 766.1 | 32 | 0.0 | 59 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Pilot Point, Texas | 29.14 | 740.1 | 29.95 | 760.7 | 59 | 15.0 | 87 | SE | 16 | 7.2 | ..... | 5k | 5s | S | SE | 0 | 0 | Cloudy..... | |
| Punta Rassa, Florida | 30.31 | 769.9 | 30.38 | 770.4 | 60 | 15.6 | 71 | N | 12 | 5.4 | ..... | 5k | Sm'e | NE | Calm | 0 | 0 | Fair..... | |
| Red Bluff, California | 29.46 | 748.0 | 29.81 | 757.2 | 48 | 8.9 | 78 | SE | 16 | 7.2 | ..... | 2k | 2ks | SE | SE | 1.38 | 35.1 | Fair..... | |
| Rio Grande City, Texas | 29.92 | 760.0 | 30.14 | 765.5 | 64 | 17.8 | 94 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy..... | |
| Rochester, New York | 29.46 | 748.3 | 30.12 | 765.0 | 23 | — 5.0 | 86 | SE | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.10 | 2.5 | Heavy snow | |
| Roseburg, Oregon | 28.96 | 735.6 | 29.52 | 749.8 | 44.5 | 6.9 | 68 | S | 19 | 8.5 | ..... | ..... | 10n | ..... | Calm | 0.62 | 15.7 | Light rain... | |
| Sacramento, California | 29.87 | 758.7 | 29.95 | 760.7 | 51 | 10.6 | 72 | S | 8 | 3.6 | ..... | ..... | 10n | ..... | S | 1.65 | 41.9 | Light rain... | |
| St. Louis, Missouri | 29.62 | 752.3 | 30.20 | 767.1 | 58 | 11.7 | 80 | N | 5 | 2.2 | ..... | ..... | 10s | ..... | W | Inap | Inap. | Cloudy..... | |
| St. Marks, Florida | 30.38 | 771.6 | 30.39 | 771.9 | 41 | 5.0 | 91 | NE | 4 | 1.8 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear..... | |
| St. Paul, Minnesota | 29.24 | 742.7 | 30.11 | 764.8 | 28 | — 2.2 | 67 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear. ..... | |
| Salt Lake City, Utah | 25.50 | 647.7 | 29.83 | 757.7 | 58 | 14.4 | 27 | SE | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy ..... | |
| San Antonio, Texas | 29.62 | 749.8 | 30.10 | 764.5 | 66 | 18.9 | 84 | SE | 6 | 2.7 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy..... | |
| San Diego, California | 30.10 | 764.5 | 30.17 | 766.3 | 56 | 13.3 | 93 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Sandusky, Ohio | 29.37 | 746.0 | 30.05 | 763.3 | 45 | 7.2 | 84 | SW | 25 | 11.2 | ..... | ..... | 10s | ..... | SW | 0.40 | 10.2 | Threatening | |
| Sandy Hook, New Jersey | 30.48 | 774.2 | 30.52 | 775.2 | 32 | 0.0 | 69 | SE | 23 | 10.3 | ..... | 5k | 2s | NW | NW | 0 | 0 | Cloudy..... | |
| San Francisco, California | 29.90 | 759.4 | 29.97 | 761.2 | 53.7 | 12.1 | 67 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 2.21 | 56.1 | Cloudy..... | |
| Santa Fé, New Mexico | 23.37 | 593.6 | 29.91 | 759.7 | 37 | 2.8 | 53 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Savannah, Georgia | 30.31 | 769.9 | 30.41 | 772.4 | 49 | 9.4 | 85 | N | 5 | 2.2 | ..... | 5cs | 2s | E | Calm | 0 | 0 | Fair..... | |
| Shreveport, Louisiana | 30.04 | 763.0 | 30.26 | 768.6 | 57 | 13.9 | 81 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Silver City, New Mexico | 24.41 | 620 0 | 30.70 | 779.8 | 40 | 4 4 | 56 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Smithville, North Carolina | 30.40 | 772.1 | 30.48 | 772.9 | 42 | 5.6 | 83 | N | 6 | 2.7 | ..... | 1c | Haze | W | Calm | 0 | 0 | Clear..... | |
| Springfield, Massachusetts | 30.43 | 772.9 | 30.58 | 776.7 | 17 | — 8.3 | 67 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy ..... | |
| Stockton, Texas | 27.09 | 688.1 | 30.09 | 764 3 | 48 | 8.9 | 93 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Thatcher's Island, Mass | 30.41 | 772.4 | 30.46 | 773.7 | 26 | — 3.3 | 88 | SE | 12 | 5.4 | ..... | ..... | 10n | ..... | S | Inap. | Inap. | Light snow.. | |
| Toledo, Ohio, | 29.33 | 745.0 | 30.02 | 762.5 | 45 | 7.2 | 92 | SW | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0.29 | 7.4 | Cloudy..... | |
| Tucson, Arizona | 27.62 | 705.1 | 30.17 | 766.3 | 51 | 10.6 | 46 | S | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Umatilla, Oregon | 29.12 | 739.6 | 29.61 | 752.1 | 39.0 | 3.9 | 82 | SE | 2 | 0.9 | ..... | ..... | 10n | ..... | W | 0.12 | 3.0 | Light rain.... | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 34 | 1.1 | 73 | SW | ..... | ..... | 4 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Uvalde, Texas | 29.33 | 745.0 | 30.15 | 765.8 | 63 | 17.2 | 83 | SE | 7 | 3.1 | ..... | 0 | 5s | ..... | SE | 0 | 0 | Fair..... | |
| Vicksburg, Mississippi | 30.10 | 764.5 | 30.36 | 771.1 | 54 | 12.2 | 80 | SE | 6 | 2.7 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy..... | |
| Virginia City, Montana | 24.04 | 610.6 | 29.52 | 749.8 | 45 | 7.2 | 68 | SW | 18 | 8.0 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy..... | |
| Visalia, California | 29.72 | 754.9 | 30.09 | 764.3 | 53 | 11.7 | 70 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy..... | |
| Washington, D. C | 30.33 | 770 4 | 30.46 | 773.4 | 33 | 0.6 | 89 | Calm | 0 | 0 | ..... | Haze | Fog | Calm | Calm | 0 | 0 | Fair... ..... | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 40 | 4.4 | 56 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Wilmington, N. Carolina | 30.32 | 770.1 | 30.41 | 772.4 | 41 | 5.0 | 65 | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Winnemucca, Nevada | 25.39 | 644.9 | 29.75 | 755.6 | 49 | 9.4 | 31 | SW | 19 | 8.5 | ..... | ..... | 10s | ..... | SW | 0.14 | 3.6 | Cloudy ..... | |
| Wood's Holl, Mass | 30.52 | 775.2 | 30.57 | 776.5 | 28 | — 2.2 | 88 | NE | 14 | 6.3 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy..... | |
| Yankton, Dakota | 28.05 | 735.3 | 30.33 | 770.4 | 23 | — 5.0 | 72 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Yuma, Arizona | 29.86 | 758.4 | 30.03 | 762.8 | 53 | 11.7 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.57 | 725.7 | 29.96 | 761.0 | 58 | 14.4 | 64 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.17 | 766.3 | 30.22 | 767.6 | 69 | 20.6 | 71 | Calm | 0 | 0 | ..... | 0 | 4n | ..... | E | 0 | 0 | Cloudy..... | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.22 | 640.6 | ..... | ..... | 67.5 | 19.7 | 75 | Calm | 0 | 0 | ..... | 0 | 2ks | ..... | ..... | 0 | 0 | ..... | Thomas Herran. |
| Navassa, W. I | 29.99 | 761.0 | 30.04 | 763.0 | 76 | 24.4 | ..... | NE | 9.2 | 4.1 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair... ..... | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.01 | 762.2 | 30.01 | 762.2 | 78 | 25.6 | 91 | NE | ..... | ..... | 3 | 4c | 5k | E | ..... | 0 | 0 | Fair ..... | O. J. Hering |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck, 1,704.3 feet, or 519.5 m.; Boerne, 1,393 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m., Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,385.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.855 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.46 in. The instrumental error of the barometer at Medellin is not known.

## UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.89 | 759.2 | 51 | 10.6 | 52 | 11.1 | 66 | WSW | 24 | 10.7 | ..... | ..... | 8 | ..... | wsw | 0.97 | 24.6 | ..... | ..... | Cloudy..... | |
| Navy Yard, Pensacola, Fla. | 30.45 | 773.4 | 52 | 11.1 | 52 | 11.1 | 86 | NE | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Navy Yard, Portsmouth, N.H | 30.57 | 776.5 | 56 | 13.3 | 12 | —11.1 | 80 | NNE | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast.... | |
| Naval Hospital, Yokohama, Japan.....* | 29.87‡ | 758.7‡ | ..... | ..... | 41.2 | 5.1 | 79 | NE | ..... | ..... | 3 | ..... | 9ks;k | ..... | SW | 0.83 | 21.1 | ..... | ..... | Clearing..... | |
| Adams, Panama ..... | 29.97 | 761.2 | 76 | 24.4 | 75 | 23.9 | 95 | NW | ..... | ..... | 2 | ..... | 5 | ..... | N;W | ..... | ..... | ..... | ..... | Fair..... | |
| Alaska, N. 28° 49′, W. 115° 31′..... | 30.24 | 768.1 | 66 | 18.9 | 57 | 13.9 | 94 | NW | ..... | ..... | 5 | ..... | 5 | ..... | SE | ..... | ..... | Mod'ate | NW | Hazy..... | |
| Alliance, Villafranca, France..... | 30.31‡ | 769.9‡ | ..... | ..... | 58 | 14.4 | 58 | SSE | ..... | ..... | 1 | ..... | 5 | ..... | Calm | ..... | ..... | ..... | .... .... | Pleasant..... | |
| Ashuelot, Hong-Kong, China. ..... | 30.21‡ | 767.3‡ | ..... | ..... | 66 | 18.3 | 63 | ESE | ..... | ..... | 2 | ..... | 10 | ..... | SW | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Canonicus, New Orleans, La..... | 30.30 | 769.6 | 41 | 5.0 | 50 | 10.0 | 93 | NE | ..... | ..... | 2 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Foggy ..... | |
| Colorado, New York, N. Y..... | 30.47 | 773.9 | 29 | — 1.7 | 28 | — 2.2 | 100 | NE | 5 | 2.2 | ..... | ..... | 8 | ..... | E | 0 | 0 | ..... | ..... | Cloudy..... | |
| Constitution Lisbon, Portugal..... | 30.36‡ | 771.1‡ | ..... | ..... | 61 | 16.1 | 88 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear..... | |
| Despatch, Constantinople, Turkey | 30.10‡ | 764.5‡ | ..... | ..... | 47 | 8.3 | 70 | NE | ..... | ..... | 2 | ..... | 8 | ..... | NE | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Franklin, Norfolk, Va..... | 30.50 | 774.7 | 66 | 18.9 | 40 | 4.4 | 91 | NNW | 3.6 | 1.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Gettysburg, Genoa, Italy ..... | 30.20‡ | 767.1‡ | ..... | ..... | 61 | 16.1 | 71 | W | ..... | ..... | 2 | ..... | 5 | ..... | W | 0 | 0 | ..... | ..... | D. clouds..... | |
| Hartford, Montevideo, Uruguay... | 29.90 | 759.4 | 72 | 22.2 | 76 | 24.4 | 61 | N | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Lackawana, Panama.....*... | 29.73‡ | 755.1‡ | ..... | ..... | 76 | 24.4 | 91 | NNW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Fair..... | |
| Michigan, Erie, Pa.....† | 30.01 | 762.2 | ..... | ..... | 39 | 3.9 | 82 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Monocacy, San Moon Bay, China* | 30.43‡ | 772.9‡ | ..... | ..... | 39 | 3.9 | 66 | NNE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Monongehela, Yokohama, Japan ....*.. | 29.86‡ | 758.4‡ | ..... | ..... | 42 | 5.6 | 50 | NE | ..... | ..... | 1–2 | ..... | 10 | ..... | ..... | Mod'ate | Mod'ate | ..... | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C..... | 30.41 | 772.4 | 52 | 11.1 | 52 | 11.1 | 79 | NE | 2 | 0.9 | ..... | ..... | 8 | ..... | NE | 0 | 0 | ..... | ..... | Misty..... | |
| Onward, Callao, Peru.....† | 30.06 | 763.5 | ..... | ..... | 68 | 20.0 | 90 | SSE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Palos, Tientsin, China..... | 30.34 | 770.6 | 25 | — 3.9 | 25 | — 3.9 | 87 | SSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 31 | — 0.6 | 100 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Fair ..... | |
| Pensacola, Talcahuano. Chili ..... | 29.96‡ | 761.0‡ | ..... | ..... | 71 | 21.7 | 50 | N | 4 | 1.8 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | Smooth | S | Fair ..... | |
| Powhatan, N. 21° 42′, W. 76° 37′..... | 30.24‡ | 768.1‡ | ..... | ..... | 74 | 23.3 | 56 | NE | ..... | ..... | 5 | ..... | 5 | ..... | NE | 0 | 0 | Mod'ate | NE | Fair..... | |
| Quinnebaug, Villafranca, France..... | 30.32‡ | 770.1‡ | ..... | ..... | 58 | 14.4 | 64 | ESE | ..... | ..... | 1 | ..... | 5 | ..... | E | ..... | ..... | ..... | ..... | Fair ..... | |
| Ranger. Kobe, Japan.....*... | 29.99‡ | 761.7‡ | ..... | .. ..... | 47 | 8.3 | 70 | NNE | ..... | ..... | 3–5 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | ..... | D. clouds,.... | |
| Richmond, Naples, Italy..... | 30.13‡ | 765.3‡ | ..... | ..... | 49 | 9.4 | 50 | N | ..... | ..... | 3 | ..... | 8 | ..... | N | 0 | 0 | Mod'ate | N | Cloudy..... | |
| Rio Bravo, Brownsville, Texas..... | 30.17 | 766.3 | 65 | 18.3 | 65 | 18.3 | 100 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Santee, Annapolis, Md... ..... | 30.46‡ | 773.7‡ | ..... | ..... | 38 | 3.3 | 81 | S | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | .... .... | ..... | Hazy..... | |
| Saratoga, Washington, D. C..... | 30.51 | 774.9 | ..... | ..... | 34 | 1.1 | 90 | S | ..... | ..... | 1 | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Misty..... | |
| St. Louis, League Island, Pa..... | 30.32 | 770.1 | 54 | 12.2 | 34 | 1.1 | 79 | E | 10 | 4.5 | ..... | ..... | 5 | ..... | W | 0 | 0 | ..... | ..... | Fair..... | |
| Supply, N. 28° 55′, W. 71° 40′..... | 30.32‡ | 770.1‡ | ..... | ..... | 68 | 20.0 | 79 | ENE | ..... | ..... | 6 | ..... | 2 | ..... | NE | ..... | ..... | Mod'ate | NE | Clear..... | |
| Trenton, Villafranca, France..... | 30.30‡ | 769.6‡ | ..... | ..... | 63 | 17.2 | 52 | SE | ..... | ..... | 2 | ..... | 8 | ..... | S;E | 0 | 0 | None | ..... | Cloudy..... | |
| Tuscarora, Acapulco, Mexico..... | 29.98‡ | 761.5‡ | ..... | ..... | 78 | 25.6 | 86 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear. ..... | |
| Wabash, Boston, Mass..... | 30.60‡ | 777.2‡ | ..... | ..... | 17 | — 8.3 | 83 | N | 2 | 0.9 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Wyoming, N. 40° 49′, E. 28° 02′.. ..... | 30.14‡ | 765.5‡ | ..... | .. ..... | 46 | 7.8 | 92 | NE | ..... | ..... | 6 | ..... | 10 | ..... | NE | ..... | ..... | Mod'ate | NE | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Dakota, Capt. Morse | | | | | | | | | | | | | | | | | | | |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | |
| S. S. Granada, Capt. Austin, Punta Arenas, Costa Rica †. | | 30.11‡ | 764.8‡ | 79 | 26.1 | ?? | W | | | 2 | | k | | NW | 0 | | | Clear. | F. W. Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

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| **WHITE STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Glendell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

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| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, Capt. L. Meyer, Hong-Kong, China *. | | 30.01‡ | 762.2‡ | 56 | 13.3 | 81 | NNE | | | 3 | | cs | | N | | Mod'ate | NNE | D. clouds | J. A. Thompson, 2d Off't |
| S. S. Gaelic, N. 36° 42′, E. 156° 48′ †. | | 29.97‡ | 761.2‡ | 56 | 13.3 | 94 | ESE | | | 6 | | k | | NE | Blank | High | S | Overcast | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

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| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 26° 24′, W. 48° 42′ | | 29.82‡ | 757.4‡ | 81.0 | 27.2 | 91 | S | | | 6 | | 8 | | SW | 12hours | High | S;NNW | Rainy | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Lo'wr 0—10. | Upper. From— | Lower. From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 47° 06', W. 33° 27' | | 30 56‡ | 771.1‡ | 52 | 11.1 | | SW | | | 3 | | 2 | | SW | 0 | Smooth | WNW | Partly cl'dy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

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| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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**ALLAN LINE MARINE SERIES.**

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| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES.** (Miscellaneous.)

Furnished by the coöperation of the Observer named.

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| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

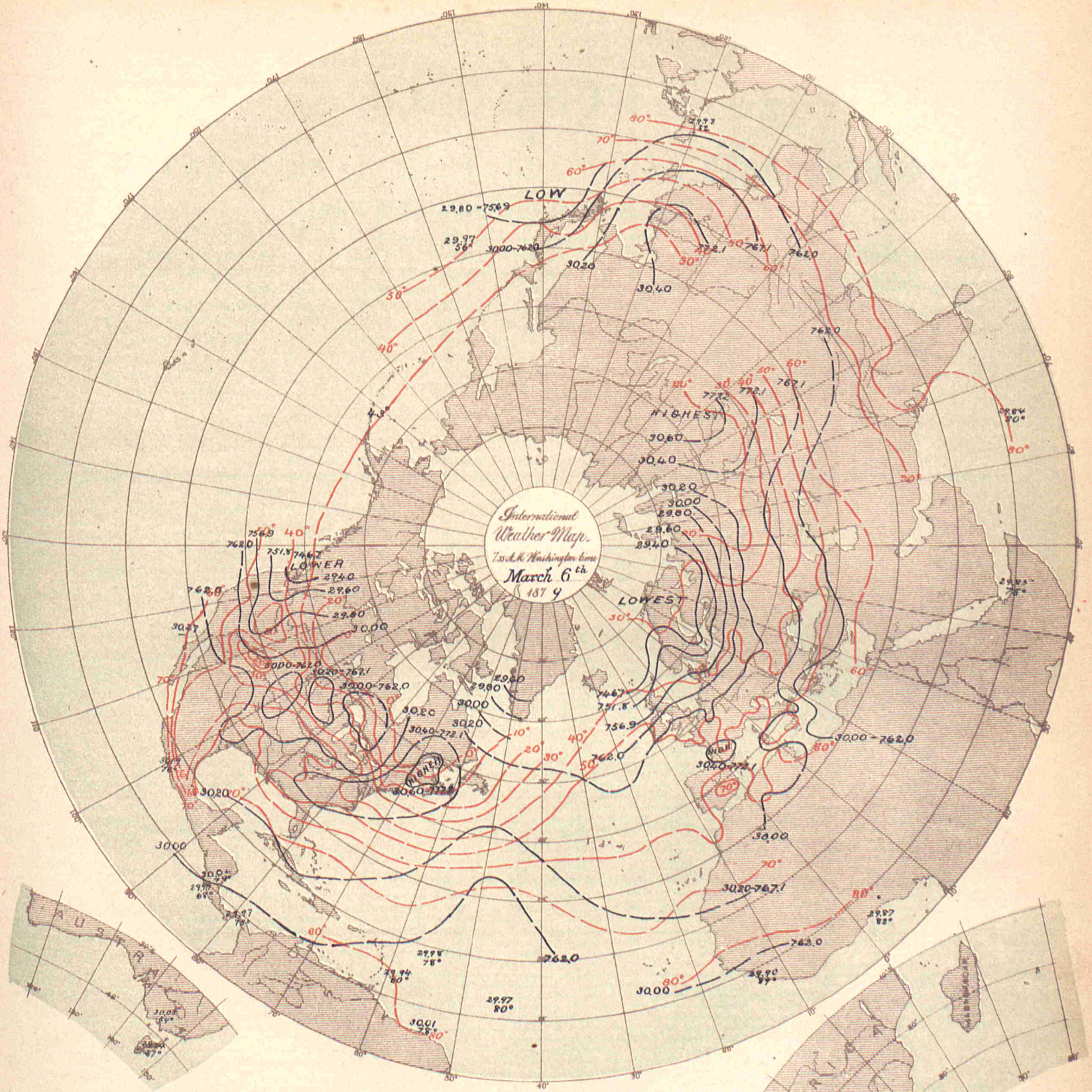
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

## OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 7, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:28 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 30.26 | 768.5 | 60.1 | 15.6 | 84 | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | |
| Nemours | ..... | ..... | 30.29 | 769.4 | 63.0 | 17.2 | 84 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Kesxuche. |
| Algiers | ..... | ..... | 30.32 | 770.1 | 59.0 | 15.0 | 74 | NNE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear. | Tourillere. |
| La Calle | ..... | ..... | 30.38 | 771.6 | 64.4 | 18.0 | 71 | NNE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Foufrede. |
| Tunis | ..... | ..... | 30.40 | 772.2 | 59.2 | 15.1 | 51 | NNW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 30.40 | 772.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 30.23 | 767.9 | 58.1 | 14.5 | 18 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Herbin. |
| Tebessa | ..... | ..... | 30.41 | 772.3 | 54.9 | 12.7 | 36 | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Watrin. |
| Geriville | ..... | ..... | 30.16 | 766.1 | 57.0 | 13.9 | 95 | E | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Brugniaux. |
| Laghouat | ..... | ..... | 30.32 | 770.1 | 56.5 | 13.6 | 38 | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bertrand. |
| Biskra | ..... | ..... | 30.38 | 771.7 | 64.2 | 17.9 | 40 | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

## AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.79 | 756.6 | 30.35 | 770.8 | 50.4 | 10.2 | 45 | NE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.52 | 749.9 | 30.32 | 770.2 | 39.2 | 4.0 | 73 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.028 | 0.7 | ..... | Dr. Wierzbiski |
| Eperies | 29.36 | 745.5 | 30.27 | 768.8 | 37.8 | 3.2 | 89 | S | ..... | ..... | 1 | ..... | 9ks | ..... | SE | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 29.09 | 738.8 | 30.37 | 771.4 | 48.7 | 9.3 | 36 | NE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.78 | 731.1 | 30.27 | 768.8 | 39.2 | 4.0 | 63 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.037 | 0.95 | ..... | Prof. A. Gottschling. |
| Kremsmünster | 29.08 | 738.6 | 30.48 | 774.2 | 39.9 | 4.4 | 73 | WNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.102 | 2.6 | ..... | Prof. C. Wagner. |
| Lemberg | 29.15 | 740.4 | 30.18 | 766.5 | 36.9 | 2.7 | 87 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.012 | 0.3 | ..... | Dr. T. Stanecki. |
| Pola | 30.24 | 768.1 | 30.36 | 771.1 | 51.4 | 10.8 | 60 | WNW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.84 | 758.0 | 30.33 | 770.3 | 40.3 | 4.6 | 65 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 30.29 | 769.3 | 30.39 | 771.9 | 49.6 | 9.8 | 64 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | P. Busin. |
| Vienna | 29.07 | 753.6 | 30.41 | 772.5 | 48.0 | 6.1 | 69 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

## BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Royal Observatory |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. E. de Cae. |
| Maeseyck | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Pierrot |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:9, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.21 | 767.3 | 30.31 | 769.9 | 48.9 | 9.4 | ..... | WSW | 20 | 8.9 | ..... | ..... | 3 | ..... | ..... | Blank | Blank | Blue sky... | W. Boswell. |
| Ardrossan | 30.42 | 772.6 | 30.44 | 773.2 | 46 | 7.8 | ..... | SW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky.... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.52 | 775.2 | 50.2 | 10.1 | ..... | SW | 7 | 3.1 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds.... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.52 | 775.2 | 49 4 | 9.7 | ..... | W | 11 | 4.9 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky.... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 30.52 | 775.2 | 50.4 | 10.2 | ..... | WSW | ..... | ..... | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | Thomas Mackereth. |
| Bradford, Yorkshire | 30.11 | 764.8 | 30.51 | 774.9 | 48.1 | 8.9 | ..... | W | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | D. clouds.... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.91 | 759.7 | 29.94 | 760.5 | 81.5 | 27.5 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. Surgener, A. H. C. |
| Cambridge, Observatory | ..... | ..... | 30.53 | 775.4 | 57.0 | 13.9 | ..... | NNW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds.... | H. Todd. |
| Cardington | ..... | ..... | 30.47 | 773.9 | 51.0 | 10.6 | ..... | NW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky.... | John McLaren. |
| Chatham, School M. E. | 30.41 | 772.4 | 30.54 | 775.7 | 52.9 | 11.6 | ..... | Calm | ..... | ..... | 0 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky.... | Corpl. Daly, R. E. |
| Dartmoor | 28.98 | 736.1 | 30.49 | 774.4 | 47.0 | 8.3 | ..... | E | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 30.46 | 773.7 | 30.51 | 774.9 | 48 | 8.9 | ..... | W | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | J. Mac Gowan. |
| Dover | 30.53 | 775.4 | 30.56 | 776.2 | 44 | 6.7 | ..... | WSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Misty..... | J. Costello. |
| Falmouth, Observatory | 30.31 | 769.9 | 30.55 | 776.0 | 46.5 | 8.1 | ..... | ESE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.37 | 695.2 | 29.69 | 754.1 | 72.0 | 22.2 | ..... | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.69 | 754.1 | 29.92 | 760.0 | 85 | 29.4 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | |
| Galway, Queen's College | ..... | ..... | 30.46 | 773.7 | 52 | 11.1 | ..... | S | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.92 | 760.0 | 30.27 | 768.8 | 58.9 | 14.9 | ..... | E | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky.... | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 30.20 | 767.1 | 30.41 | 772.4 | 48.8 | 9.3 | ..... | WSW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | D. G. Maclean. |
| Great Yarmouth | 30.51 | 774.9 | 30.52 | 775.2 | 45 | 7.2 | ..... | NNE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Misty..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.37 | 771.4 | 30.55 | 776.0 | 48.0 | 8.9 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The Staff, for G. B. Airy |
| Guernsey | 30.29 | 769.4 | 30.52 | 775.2 | 48 | 8.9 | ..... | ENE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | Dr. S. E. Hoskins, F.R.S |
| Helston | 30.46 | 773.7 | 30.58 | 776.7 | 50 | 10.0 | ..... | E | ..... | ..... | 2 | ..... | 8ck | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 30.49 | 774.4 | 30.55 | 776.0 | 48 | 8.9 | ..... | SW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky.... | John Tilston. |
| Jersey | 30.23 | 767 8 | 30.53 | 775.4 | 52.3 | 11.3 | ..... | S | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | J. Fisher. |
| Kew, Observatory | 30.51 | 774.9 | 30.55 | 776.0 | 51.2 | 10.7 | ..... | SW | 4 | 1.8 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Misty..... | The Meteorological Of. |
| Leicester, Museum | 30.27 | 768.8 | 30.53 | 775.4 | 53.1 | 11.7 | ..... | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | Wm. J. Harrison, F.G.S |
| Malta, (Mediterranean) | 30.08 | 764.0 | 30.16 | 766.1 | 58 | 14.4 | ..... | N | ..... | ..... | 2 | ..... | 3k | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 30.16 | 766.1 | 30.25 | 768.3 | 51 | 10.6 | ..... | W | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | ¾ clouded... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.17 | 766.3 | 69.5 | 20.8 | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 30.35 | 770.9 | 30.55 | 776.0 | 57.4 | 14.1 | ..... | WSW | ..... | ..... | 2 | ..... | 1k | ..... | WNW | 0 | 0 | Blue sky .... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 30.00 | 762.0 | 30.53 | 775.4 | 50.5 | 10.3 | ..... | S | ..... | ..... | 1–2 | ..... | 9 | ..... | ..... | ..... | ..... | Hazy..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.54 | 775.7 | 54 | 12.2 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky.... | H. E. Bellamy. |
| Plymouth | 30.46 | 773.7 | 30.53 | 775.4 | 47.2 | 8.4 | ..... | SW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | John Merrifield. |
| Roche's Point | 30.48 | 774.2 | 30.53 | 775.4 | 49 | 9.4 | ..... | SE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded... | W. Kennedy. |
| Saint Ann's Head | 30.38 | 771.6 | 30.54 | 775.7 | 47 | 8.3 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy ..... | John C. Walker. |
| Sandwick Manse, (Orkneys. | ..... | ..... | 30.08 | 764.0 | 46.6 | 8 1 | ..... | WSW | 39 | 17.4 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Dr. Hoskins. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 30.04 | 763.0 | 48.0 | 8.9 | ..... | NNE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | Blank | Blank | D. clouds.... | W. H. Lyne. |
| Sheffield | 30.25 | 768.3 | 30.52 | 775.2 | 51.7 | 10.9 | ..... | W | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Blue sky..... | W. F. Cooper. |
| Silloth Rectory | 30.47 | 773.9 | 30.40 | 774.7 | 50.6 | 10.3 | 71 | W | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0.010 | 0.25 | Blue sky..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 30.12 | 765.0 | 30.52 | 775.2 | 46.8 | 8.2 | ..... | SW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. S. J. Perry. |
| Stratfield Turgiss | 30.33 | 770.4 | 30.55 | 776.0 | 53.4 | 11.9 | ..... | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | C.H.Griffith, F.M.S. |
| Thurso | 30.10 | 764.5 | 30.17 | 766.8 | 50 | 10.0 | ..... | W | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | John Trotter. |
| Truro, Royal Institution | 30.44 | 773.2 | 30.50 | 774.7 | 54 | 12.2 | ..... | SE | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | W. Newcombe. |
| Valencia, Observatory | 30.48 | 774.2 | 30.51 | 774.9 | 52.0 | 11.1 | ..... | SW | 9 | 4.0 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.95 | 760.7 | 29.99 | 761.7 | 74.2 | 23.4 | 64 | S | 18 | 8.0 | ..... | 0 | 1 | ..... | ..... | 0 | 0 | Fine..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.92 | 760.0 | 59.0 | 15.0 | 83 | S | ..... | ..... | 2 | ..... | 7k | ..... | ..... | 0.15 | 3.8 | Starlight.... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 30.06? | 763.5? | 52.0 | 11.1 | ..... | W | ..... | ..... | 4 | ..... | 2c | ..... | ..... | 0 | 0 | Light clouds | Andrew Gibb. |
| Mauritius, Observatory | 29.81 | 757.2 | 30.00 | 761.9 | 80.9 | 27.2 | 64 | E | 17.0 | 7.6 | ..... | 4 | 4 | ..... | E | 0 | 0 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 30.05 | 763.3 | 30.14 | 765.5 | 56.8 | 13.8 | 88 | SSE | 6 | 2.7 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 30.28 | 769.1 | 48 | 8.9 | ..... | SW | ..... | ..... | 4 | 5 | 3 | SW | ..... | 1.00 | 25.4 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.90 | 759.4 | 44 | 6.7 | ..... | W | ..... | ..... | 7 | 5 | 7 | W | ..... | ..... | ..... | ..... | Robert Burnet. |

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day,) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day,) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|
| H. M. S. "Fawn," N. 35° 54', E. 14° 30' | ..... | ..... | Blue sky..... | Capt. W. J. L. Wharton. |
| Brig Alliance, N 11° 24', W. 46° 41' | ..... | ..... | Blue sky..... | Capt. W. Scott. |
| S. S. Amanda, [Bab El Mandeb / Off Island of Perim, Strait of] | ..... | ..... | Blue sky..... | Capt. B. Boyes. |
| Barque Belle Isle, N. 28° 05', W. 84° 25' | ..... | ..... | D. clouds.... | Capt. A. J. Brown. |
| Ship British Commodore, N. 42° 25', W. 40° 10' | ..... | ..... | D. clouds.... | Capt. J. W. Thorne. |
| —— City of Agra, N. 0° 40', W. 29° 31' | ..... | ..... | Raining..... | Capt. Thos. Young. |
| Barque Commewyne, N. 18° 10', W. 55° 50' | ..... | ..... | D. clouds.... | Capt. A. Buchan. |
| —— Denbighshire | ..... | ..... | | Capt. H. Murdoch. |
| Barque Fedalina | ..... | ..... | | Capt. H. L. Fox. |
| Barque Mertole, N. 43° 54' W. 13° 41' | ..... | ..... | Drizzling.... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | | Capt. Barlow. |
| S. S. Strathleven, N. 9° 55', E. 62° 51' | ..... | ..... | D. clouds.... | Capt. C. W. Pearson. |
| S. S. Wyberton, N. 12° 57', E. 59° 09' | ..... | ..... | Blue sky..... | Capt. W. R. McMontry. |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity Miles per hour. | WIND. Velocity Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | | | | | | | | | | | | | | | | | | | Mr. Ansart. |
| San José | 26.28 | 667.5 | 30.00 | 762.0 | 65.8 | 18.8 | 88 | SE | | | 2 | | 8s | | E | 0 | 0 | | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| STATIONS. | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.13 | 765.2 | 30.17 | 766.4 | 39.6 | 4.2 | 87 | NW | | | 4 | | 5 | | | | | | |
| Fanöe | 30.29 | 769.8 | 30.31 | 769.8 | 38.5 | 3.6 | 92 | WNW | | | 4 | | 0 | | | | | | |
| Godthaab, (Greenland) | 29.71 | 754.7 | 29.76 | 755.8 | 1.6 | —16.9 | 95 | N | | | 3 | | 1 | | | | | | |
| Stykkisholm, (Iceland) | | | | | | | | | | | | | | | | | | | |
| Thorshavn, (Faröe) | 29.78 | 756.3 | 29.81 | 757.2 | 39.6 | 4.2 | 92 | W | | | 4 | | 7 | | | | | | Raining |
| Vestervig | 30.07 | 763.8 | 30.24 | 768.1 | 39.9 | 4.4 | 90 | W | | | 6 | | 0 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| STATIONS. | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.99 | 761.7 | 30.54 | 775.7 | 46.8 | 8.2 | 80 | NE | | | 1 | | 0 | | | 0.004 | 0.1 | Clear | Collignon, Director. |
| Amiens, Normal School | 30.45 | 773.4 | 30.56 | 776.3 | 46.4 | 8.0 | 89 | SW | | | 1 | | 0 | | | 0 | 0 | Clear | Bonvallet, Director. |
| Avignon, Normal School | 29.27 | 768.7 | 30.34 | 770.7 | 62.2 | 16.8 | 52 | N | | | 2 | | 0 | | | 0 | 0 | Very clear | M. Giraud, Director. |
| Bar-sur-Seine | 29.94 | 760.5 | 30.51 | 775.0 | 50.4 | 10.2 | 61 | SE | | | 1 | | 5n | | E | 0.236 | 6.0 | Cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 30.28 | 769.1 | 30.58 | 776.6 | 49.1 | 9.5 | 59 | E | | | 1 | | 0 | | | 0.014 | 0.36 | Clear | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.58 | 751.2 | 30.49 | 774.5 | 49.3 | 9.6 | 80 | E | | | 2 | | 2 | | NE | 0.126 | 3.2 | Slightly cl'dy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.59 | 751.6 | 30.52 | 775.1 | 52.0 | 11.1 | 90 | NW | | | 1 | | | N | N | 0 | 0 | Slightly cl'dy | M. Marlot, Director. |
| Bourges, Normal School | 29.94 | 760.5 | 30.51 | 774.9 | 50.4 | 10.2 | 90 | SSW | | | 4 | | 5 | SSW | SSW | 0.08 | 0.2 | Foggy | A. Waquet, Director. |
| Brest, Naval Observatory | 30.17 | 766.4 | 30.41 | 772.5 | 50.7 | 10.4 | 76 | E | | | 3 | | 9 | | E | 0.197 | 5.00 | | M.de Rermarez, Director |
| Carcassonne, Normal School | 29.90 | 759.5 | 30.31 | 769.9 | 66.2 | 1.9 | 80 | W | | | 1 | | 1 | | W | 0 | 0 | Clear | September, Director. |
| Caen, Normal School | 30.47 | 773.9 | 30.54 | 775.8 | 51.1 | 10.6 | 65 | NE | | | 1 | | 0 | | | 0.008 | 0.2 | Clear | M. Lair, Director. |
| Chartres, Normal School | 29.95 | 760.7 | 30.53 | 775.4 | 54 3 | 12.4 | 83 | E | | | 1 | | 0 | | | 0.098 | 2.5 | Clear | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 30.24 | 768.2 | 30.57 | 776.4 | 53.4 | 11.9 | 60 | Calm | | | 0 | | 8 | | | 0 | 0 | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 29.06 | 738.0 | 30.44 | 773.3 | 50.5 | 10.3 | 70 | N | | | 1 | | 10 | | | 0 | 0 | | Allnard, Director. |
| Commercy, Normal School | 29.65 | 753.0 | 30.55 | 775.9 | 41.7 | 5.4 | 91 | WNW | | | 1 | | 1c | | WNW | 0.08 | 2. | Clear | Dr. Coulet, Director. |
| Commune de Gréasque* | 29.22 | 742.3 | 30.37 | 771.3 | 57.4 | 14.1 | 52 | E | | | 2 | | 2 | | E | 0 | 0 | ¾ covered | M. Kina, Director. |
| Grenoble, Normal School | 29.64 | 752.9 | 30.43 | 772.8 | 51.1 | 10.6 | 72 | SE | | | 1 | | 1k | | | 0 | 0 | Slightly cl'dy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 30.23 | 767.8 | 30.45 | 773.4 | 54.7 | 12.6 | 81 | N | | | 1 | | 5 | | N | 0 | 0 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 30.19 | 766.8 | 30.50 | 774.8 | 52.2 | 11 2 | 59 | ESE | | | 4 | | 1 | | E | 0 | 0 | Slightly cl'dy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.52 | 749.9 | 30.48 | 774.1 | 51.8 | 11 | 77 | NE | | | 4 | | 0 | | | 0 | 0 | Clear | Baudry, Director. |
| Lorient, Naval Observatory | 30.37 | 771.5 | 30.47 | 774.0 | 52.6 | 11.4 | 85 | E | | | 2 | | | | NE | 0.004 | 0.1 | | Lt T. Carré, Director. |
| Mâcon, Normal School | | | | | | | | | | | | | | | | | | | M. Galzin, Director |
| Mirecourt, Normal School | 29.41 | 746.9 | 30.48 | 774.2 | 45.3 | 7.4 | 83 | NNW | | | 1 | | n | | SSE | 0 | 0 | | M. Barbier, Director. |
| Nismes, Normal School | 30.15 | 765.8 | 30.35 | 771.0 | 63.0 | 17.2 | 44 | N | | | 4 | | 0 | | | 0 | 0 | Clear | Boyer, Director. |
| Privas, Normal School | 29.33 | 744.9 | 30.40 | 772.1 | 58.3 | 14.6 | 53 | N | | | 3 | | 2 | N | N | 0 | 0 | Slightly cl'dy | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 25.42 | 645.6 | | | 31.8 | — 0.1 | 100 | ENE | | | 2 | | | | | 0 | 0 | Foggy | Allnard, Director. |
| Rochefort, Naval Obs'y | 30.40 | 772.2 | 30.43 | 773.0 | 56.7 | 13.7 | 73 | E | | | 2 | | 0 | | | 0 | 0 | Clear | Lt. Decante, Director. |
| Rouen, Normal School | 30.45 | 773.5 | 30.54 | 775.7 | 53.6 | 12.0 | 43 | NW | | | 1 | | 0 | | | 0 | 0 | Clear | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 30.46 | 773.6 | 30.49 | 774.4 | 53.4 | 11.9 | 55 | ESE | | | 3 | | 1 | SE | SE | 0.121 | 3.08 | Clear | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 30.37 | 771.3 | 30.53 | 775.5 | 54.5 | 12.5 | 47 | NE | | | 1–2 | | | NW | | 0 | 0 | | E. Renou, Director. |
| Tarbes, Normal School | 29.31 | 744.4 | 30.40 | 772.2 | 55.4 | 13 | 55 | W | | | 2 | | 0 | | | 0 | 0 | Clear | T. Huguet, Director. |
| Versailles Observatory | 30.03 | 762.8 | 30.52 | 775.3 | 50.4 | 10.2 | | SE | | | 1 | | 0 | | | 0.004 | 0.10 | Foggy | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.67 | 753.7 | 30.40 | 772.1 | 55.0 | 12.8 | 75 | SW | | | 1 | | 2 | | S | 0.008 | 0.2 | Slightly cl'dy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.91 | 759.7 | 29.94 | 760.4 | 75.4 | 24.1 | | | | | | | | | | 0.04 | 1. | | L'Abbé Marchesi. |
| Lyons Obs'y, (Park Station) | 29.80 | 756.8 | 30.43 | 772.8 | 55.4 | 13.0 | 64 | NNW | | | 3 | | 3cn | | | 0 | 0 | | Mr. Jays. |
| Marseilles, Observatory | | | | | | | | | | | | | | | | | | | The Staff. |
| Mont-Louis | 25.00 | 686.6 | 30.38 | 771.6 | 44.6 | 7.0 | 47 | NE | 7.4 | 3.3 | | | 0 | | | 0 | 0 | | M. Cave. |
| Nice | | | 30.39 | 771.8 | 58.3 | 14.6 | 70 | SE | | | 1 | | 0 | | | 0 | 0 | | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 30.24 | 768.2 | | | 51.6 | 10.9 | 59 | NE | | | 2 | | 0 | | | 0.079 | 2.0 | | Marié Davy, Director. |
| Perpignan | 30.24 | 768.1 | 30.35 | 770.8 | 60.4 | 15.8 | 59 | S | 7.4 | 3.3 | | | 0 | | | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.72 | 577.1 | | | 33.0 | 0.0 | | N | | | 1 | | 0 | | | 0 | 0 | Clear | Gen'l de Nansouty. |
| Toulouse, Observatory | 29.67 | 753.5 | 30.40 | 772.1 | 54.9 | 12.7 | 66 | NE | | | 1 | | 1 | | | 0 | 0 | | M. Mercadier Juller. |
| Tours | 30.28 | 769.0 | 30.47 | 774.0 | 51.6 | 10.9 | 80 | ESE | | | 2 | | 7 | | E | 0 | 0 | | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.41 | 772.3 | 30.43 | 772.9 | 37.4 | 3.0 | 85 | ESE | 16.8 | 7.5 | 2cs | | | | | 0 | 0 | Clear | Marc Dechevrens, S. J. |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque on the scale 0 to 4 and Brest on the scale 0 to 10; Mirecourt apparently gives cloud direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1.010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-12 | Clouds. Amount. Up'er 0-10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.56 | 750.7 | 30.41 | 772.4 | 37.6 | 3.1 | 84 | SE | | | 4 | | 3 | S | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 30.12 | 765.1 | 30.30 | 769.6 | 43.5 | 6.4 | 78 | NW | | | 4 | | 7 | | | 0.035 | 0.9 | | Prof. Arndt. |
| Breslau | 29.81 | 757.1 | 30.34 | 770.7 | 41.2 | 5.1 | 65 | W | | | 4 | | 9 | | | 0.004 | 0.09 | | Royal University Obs'y |
| Carlsruhe | 30.08 | 764.1 | 30.53 | 775.5 | 45.3 | 7.4 | 81 | NE | | | 1 | | 1 | SW | | 0 | 0 | | Albert Sens. |
| Cassel | 29.85 | 758.3 | 30.47 | 774.0 | 47.1 | 8.4 | 68 | SSW | | | 2 | | 7 | NW | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 30.32 | 770.1 | 30.48 | 774.3 | 50.9 | 10.5 | 64 | NW | | | 3 | | 4k | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 30.19 | 766.8 | 30.56 | 776.1 | 40.1 | 4.5 | | SSW | | | 1 | | 4 | | | Inap. | Inap. | | Physical Society. |
| Friedrichshafen | 29.06 | 738.2 | 30.48 | 774.1 | 43.2 | 6.2 | 72 | SW | | | 2 | | 6 | NE | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 30.32 | 770.0 | 30.39 | 771.9 | 45.7 | 7.6 | 70 | NW | | | 5 | | 0 | | | 0.031 | 0.8 | Clear | Captain F. Hegemann. |
| Kiel | 30.32 | 770.1 | 30.34 | 770.6 | 43.5 | 6.4 | 77 | WSW | | | 1 | | 1 | | | 0.010 | 0.25 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.09 | 764.3 | 30.18 | 766.5 | 36.0 | 2.2 | 65 | W | | | 3 | | 4 | | | 0.008 | 0.2 | | Prof. E. Luther. |
| Köslin | | | 30.17 | 766.4 | 34.0 | 1.1 | | W | | | 4 | | 5 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 30.00 | 761.9 | 30.43 | 773.0 | 41.7 | 5.4 | 72 | SW | | | 3 | | 6 | WSW | | 0 | 0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 30.10 | 764.5 | 30.15 | 765.7 | 35.6 | 2.0 | 78 | WNW | | | 2 | 5c | 8s | SW | WNW | | | | Skalweit. |
| Neufahrwasser | 30.18 | 766.6 | 30.20 | 767.0 | 38.8 | 3.8 | 67 | WSW | | | 2 | | 10 | | | 0.031 | 0.8 | | A. Lothes. |
| Posen | 30.02 | 762.4 | 30.32 | 770.0 | 40.3 | 4.6 | 67 | NW | | | 6 | | 10 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.99 | 761.8 | 30.56 | 776.3 | 47.1 | 8.4 | 74 | NNE | | | 1 | | 2 | NE | | 0.046 | 1.25 | | Imp. University Observatory. |
| Stuttgart | 29.53 | 750.0 | 30.47 | 773.9 | 46.4 | 8.0 | 65 | NE | | | 1 | | 8 | E | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | | | | | | | | | | | | | | | | | | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.96 | 735.5 | 30.54 | 775.7 | 40.5 | 4.7 | 74 | NW | 4 | 2 | | | 1k | | | 0.031 | 0.8 | | Dr. Van Bebber. |
| Wustrow, Naval School | 30.25 | 768.4 | 30.28 | 769.0 | 35.8 | 2.1 | 96 | W | | | 5 | | 5s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.67 | 753.7 | 30.07 | 763.8 | 51.4 | 10.8 | | NE | | | 7.0 | | | | | | | ½ Clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dessa | 29.41 | 746.9 | 29.88 | 758.9 | 85.6 | 29.8 | 19 | W | 6.3 | 2.8 | | | 7 | W | | 0 | 0 | D. clouds | |
| Bombay | 29.85 | 758.3 | 29.89 | 759.2 | 78.9 | 26.1 | 71 | NW | 19 | 8.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.18 | 741.2 | 29.93 | 760.2 | 77.9 | 25.5 | 24 | Calm | 1.1 | 0.5 | | | 7 | | | 0 | 0 | Cloudy | |
| Belgaum | 27.36 | 694.9 | 29.87 | 758.6 | 83.4 | 28.6 | 63 | W | 11.0 | 4.9 | | | 1 | | | 0 | 0 | Squally | |
| Roorkee | 29.03 | 737.4 | 29.95 | 760.6 | 73.8 | 23.2 | 26 | W | 1.2 | 0.5 | | | 3 | | | 0 | 0 | D. clouds | |
| Agra | 29.38 | 746.2 | 29.94 | 760.6 | 81.7 | 27.6 | 26 | N | | | | | | | | 0 | 0 | | |
| Nagpur | 28.82 | 732.0 | 29.85 | 758.1 | 88.5 | 31.4 | 33 | N | 2.3 | 1.0 | | | | | | 0 | 0 | Blue sky | |
| Lucknow | 29.55 | 750.5 | 29.93 | 760.3 | 73.3 | 22.9 | 80 | NNW | 1.1 | 0.5 | | | 2 | NNE | | 0 | 0 | D. clouds | |
| Allahabad | 29.61 | 752.0 | 29.92 | 760.0 | 81.3 | 27.4 | 28 | Calm | 1.1 | 0.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.72 | 755.0 | 29.91 | 759.6 | 80.5 | 26.9 | 43 | W | 0.8 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.88 | 708.2 | 29.90 | 759.5 | 77.6 | 25.3 | 15 | NW | 3.6 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.82 | 757.3 | 29.90 | 759.4 | 85.0 | 29.4 | 57 | S | 2.1 | 0.9 | | | | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.91 | 759.6 | 29.93 | 760.2 | 79.5 | 26.4 | 53 | SSW | 5.0 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.51 | 749.5 | 29.90 | 759.6 | 75.4 | 24.1 | 31 | Calm | 1.0 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.86 | 758.5 | 29.96 | 760.9 | 75.4 | 24.1 | 57 | WSW | 5.3 | 2.4 | | | 0 | | | 0 | 0 | | |
| Sibsagar | 29.56 | 750.9 | 29.91 | 759.6 | 69.0 | 20.6 | 78 | W | 2.7 | 1.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.51 | 724.0 | 29.86 | 758.3 | 86.3 | 30.2 | 20 | Calm | 2.6 | 1.2 | | | 0 | | | 0 | 0 | | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.94 | 760.6 | 30.37 | 771.3 | 53.4 | 11.9 | 38 | SW | 1.3 | 0.6 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.85 | 758.3 | 30.39 | 771.9 | 51.4 | 10.8 | 55 | S | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 30.26 | 769.0 | 30.39 | 771.9 | 50.4 | 10.2 | 59 | E | 1.3 | 0.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 29.46 | 748.2 | 30.39 | 771.8 | 51.1 | 10.6 | 44 | S | 2.5 | 1.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 30.19 | 766.7 | 30.38 | 771.7 | 55.9 | 13.3 | 65 | SW | 2.5 | 1.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 28.43 | 722.1 | 30.39 | 771.9 | 46.6 | 8.1 | 54 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 30.34 | 770.5 | 30.39 | 771.8 | 48.2 | 9.0 | 63 | NW | 9.4 | 4.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 30.11 | 764.8 | 30.37 | 771.5 | 53.6 | 12.0 | 49 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci |
| Leghorn | 30.27 | 768.8 | 30.35 | 771.0 | 55.4 | 13.0 | 67 | W | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 30.13 | 765.4 | 30.32 | 770.0 | 57.0 | 13.9 | 25 | N | 4.9 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.94 | 760.4 | 30.20 | 767.1 | 50.0 | 10.0 | 50 | NE | 15.4 | 6.9 | ..... | ..... | 2 | NNE | ..... | 0.008 | 0.2 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.33 | 744.9 | 30.23 | 767.9 | 53.2 | 11.8 | 74 | NW | 5.6 | 2.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 30.15 | 765.9 | 30.36 | 770.9 | 56.5 | 13.6 | 40 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 30.07 | 763.8 | 30.33 | 770.4 | 53.2 | 11.8 | 45 | N | 11.9 | 5.3 | ..... | ..... | 1 | ..... | ..... | 0.024 | 0.6 | ..... | Prof. G. Cacciatore. |
| Syracuse | 30.17 | 766 3 | 30.24 | 768.2 | 55.4 | 13.0 | 47 | NNE | 6.3 | 2.8 | ..... | ..... | 6 | NNE | ..... | 0.016 | 0.4 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.76 | 756.0 | 30.32 | 770.1 | 54.3 | 12.4 | 29 | N | 3.1 | 1.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. V. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.29 | 769.3 | 30.31 | 769.9 | 37.1 | 2.8 | 71 | ESE | 2.7 | 1.2 | ..... | ..... | 10ck;s | ..... | NW | 0.25 | 0.63 | Cloudy | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 30.18 | 766.6 | 30.40 | 772.1 | 37 0 | 2.8 | 69 | NW | 1.9 | 0.8 | ..... | ..... | 9ck;s | NW | NW | 0 | 0 | Cloudy | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.92 | 759.9 | 29.99 | 761.7 | 37.5 | 3.1 | 91 | N | 8.7 | 3.9 | ..... | 1ck | 10k | W | N | 0.100 | 2.5 | Fair | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.13 | 638.2 | 30.16 | 766.0 | 44.6 | 7.0 | 52 | SW | ..... | ..... | 1 | 2 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. L. Perez. |
| Leon | 24.60 | 622.3 | 30.15 | 765.9 | 52.0 | 11.1 | 65 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | Prof. M. Leal |
| Mexico, Central Obs'y | 23.12 | 587.3 | 30.37 | 771.3 | 41.0 | 5.0 | 50 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | The Staff. |
| Pabellon, (Aguascallentes) | ..... | ..... | ..... | ..... | 50.5 | 10.3 | 64 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | M. V. de Leon, M. E. |
| Tiacotalpam | 30.12 | 765.1 | 30.13 | 765.4 | 66.7 | 19.3 | 90 | W | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | M. M. Cházaro. |
| San Luis Potosi | 24.26 | 615.9 | 30.27 | 768.9 | 44.0 | 6.7 | 24 | E | ..... | ..... | 1 | 0 | 10 | ..... | E | 0 | 0 | Covered | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Puebla, (Catholic Institute) | 23.44 | 595.4 | 30.20 | 767.2 | 37.4 | 3.0 | 55 | N | 0.4 | 0.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.46 | 722.6 | 30.11 | 764.8 | 74.1 | 23 4 | 63 | NE | ..... | ..... | 1 | 0 | 2 | ..... | W | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1893 m., or 6210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2201m., or 7220.9 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 532 m., or 1745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.56 | 776.2 | 30.56 | 776.2 | 44.6 | 7.0 | ..... | WNW | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.004 | 0.1 | ..... | |
| Groningen | 30.42 | 772.6 | 30.47 | 774.0 | 45.7 | 7.6 | ..... | NW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.098 | 2.5 | ..... | |
| Helder | 30.47 | 774.0 | 30.47 | 774.0 | 41.4 | 5.2 | ..... | WSW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 30.53 | 775.5 | 30.53 | 775.5 | 47.3 | 8.5 | 68 | NW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.46 | 773.8 | 30.51 | 775.0 | 50.9 | 10.5 | 62 | WNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.98 | 761.4 | 30.02 | 762.4 | 41.7 | 5.4 | 85 | S | 12.8 | 5.7 | ..... | ..... | 4 | ..... | ..... | 0.087 | 2.2 | Light rain... | |
| Bröno | 29.80 | 757.0 | 29.84 | 758.0 | 31.1 | — 0.5 | 59 | SSW | 9 | 4 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.84 | 757.9 | 29.99 | 761.8 | 31.8 | — 0.1 | 60 | WSW | 7 | 3 | ..... | ..... | 0 | ..... | ..... | 0.012 | 0.3 | ..... | |
| Tromsö | 29.83 | 757.7 | 29.87 | 758.8 | 25.5 | — 3.6 | 74 | SW | 13 | 6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.11 | 764.9 | 30.31 | 769.8 | 60.1 | 15.6 | 91 | SSW | 8.1 | 3.6 | ..... | ..... | 4 | ..... | ..... | 0.059 | 1.5 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.31 | 744.4 | 30.34 | 770.5 | 60.8 | 16.0 | 56 | ESE | 1.8 | 0.8 | ..... | ..... | 3 | W | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.27 | 768.8 | 30.35 | 771.0 | 62.6 | 17.0 | 57 | SE | 5.6 | 2.5 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 30.00 | 761.9 | 30.36 | 771.1 | 56.5 | 13.6 | 75 | SE | 4.9 | 2.2 | ..... | ..... | 8 | WSW | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.26 | 768.6 | 30.33 | 770.4 | 64.8 | 18.2 | 69 | SSW | 15.4 | 6.9 | ..... | ..... | 4 | ..... | ..... | 0.205 | 5.2 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0–9 | Sea or swell. Direction from — | | |
|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | A. G. da Silva Costa Com'd.t. |
| D. Fernando | ..... | ..... | ..... | A. M. de Sande, Comd't. |
| India | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | 2 | S | D. clouds.... | A. J. de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | J. T. d'Oliveria, Com'd't |
| Rio Lima, Capt. S. C. da SilvaCosta, Porto Praya, Cape Verd Islands. | 3 | NE | D. clouds..... | A. Ferreira, 2nd Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | D. clouds..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | 1 | ..... | D. clouds..... | J. M. T. Guimaraes, Com'd't. |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.78 | 756.5 | 30.23 | 767.7 | 35.4 | 1.9 | 66 | NW | 13 | 6 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.70 | 754.3 | 30.13 | 765.4 | 35.8 | 2.1 | 84 | W | 2 | 1 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Snowing..... | Astronomical Obs. |
| Dorpat | 29.77 | 756 2 | 30.03 | 762.7 | 30.0 | — 1.1 | 82 | WSW | 9 | 4 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.86 | 758.5 | 29 88 | 758.9 | 31.1 | — 0.6 | 73 | W | 11 | 5 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.46 | 748.3 | 30.12 | 765.1 | 38.7 | 3.7 | 72 | SW | 7 | 3 | ..... | ..... | 4c;k;ks | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Nikolaiev | 30.15 | 765.8 | 30.22 | 767.6 | 35.2 | 1.8 | 75 | NNE | 18 | 8 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.06 | 763.5 | 30.08 | 764.0 | 39.4 | 4.1 | 76 | ENE | 9 | 4 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.54 | 750.3 | 30.11 | 764.9 | 29.8 | — 1.2 | 78 | S | 9 | 4 | ..... | ..... | 8s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.91 | 759.7 | 30.12 | 765.1 | 36.3 | 2.4 | 55 | E | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.60 | 751.9 | 29.62 | 752.4 | 31.6 | — 0.2 | 85 | SW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.55 | 725.2 | 29.98 | 761.4 | 51.8 | 11.0 | 64 | Calm | 0 | 0 | ..... | ..... | 4ck | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.10 | 764.4 | 30.01 | 762.3 | 48.0 | 8.9 | 53 | NE | 4 | 2 | ..... | ..... | 5ck;s | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Trotkowo* | 29.71 | 754.5 | 30.21 | 767.3 | 26.6 | — 3.0 | 45 | SW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.91 | 759.8 | 30.20 | 767.1 | 19.9 | — 6.7 | 66 | SE | 4 | 2 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Ekaterinburg | 29.22 | 742.2 | 30.23 | 767.9 | 30.2 | — 1.0 | 61 | Calm | 0 | 0 | ..... | ..... | 10c | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Nukuss | 29.64 | 760.4 | 29.78 | 756.3 | 61.2 | 16.2 | 14 | N | 9 | 4 | ..... | ..... | 8cs | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.29 | 718.6 | 29.95 | 760.7 | 68.0 | 20.0 | 23 | NW | 7 | 3 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.98 | 761.4 | 30.53 | 775.5 | 9.9 | —12.3 | 81 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.32 | 770.2 | 30.64 | 778.3 | 17.4 | — 8.1 | 92 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 30.14 | 765.5 | 30.28 | 769.1 | 31.5 | — 0.3 | 34 | SW | 7 | 3 | ..... | ..... | 2c | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend 455? m, or 1,492.7? ft., Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.27 ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.23 | 767.9 | 30.34 | 770.6 | 57.6 | 14.2 | 62 | SSE | 2.0 | 0.92 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 30.23 | 767.8 | 30.28 | 769.2 | 66.6 | 19.2 | 49 | E | 2.4 | 1.08 | ..... | 2 | 0 | SE | ..... | 0 | 0 | Almost clear | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.32 | 693.8 | ..... | ..... | 58.1 | 14.5 | 66 | W | 2.1 | 0.98 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 28.07 | 713.0 | ..... | ..... | 62.1 | 16.7 | 54 | SW | 3.0 | 1.33 | ..... | 1 | 0 | SE | ..... | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 30.21 | 767.4 | 30.36 | 771.2 | 64.4 | 18.0 | 68 | E | 1.4 | 0.69 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.37 | 746.9 | 30.28 | 769.2 | 50.9 | 10.5 | 84 | SW | 7.4 | 3.3 | ..... | ..... | 10 | ..... | ..... | 0.055 | 1.4 | Covered..... | R. Gil Villanueva, Dir. |
| Sub-Series | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.10 | 764.6 | 30.17 | 766.3 | 65.2 | 18.4 | 86 | E | 1.1 | 0.5 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear ..... | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.96 | 761.0 | 30.02 | 762.5 | 81.5 | 26.9 | 67 | E | 3.8 | 1.7 | ..... | ..... | 5ck | ..... | E | 0 | 0 | Covered?..... | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.20 | 767.1 | 30.30 | 769.6 | 69.9 | 19.4 | 37 | ESE | 15.2 | 6.8 | ..... | 0 | 3 | ..... | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N. Dir. |
| San Juan de Porto Rico, W. I. | 29.98 | 761.6 | 30.08 | 763 9 | 78.0 | 22.8 | 82 | Calm | 0 | 0 | ..... | 5kn | 4kn | E | E | 0.118 | 3.00 | Cloudy..... | Leonardo de Tejeda, Ch't. Eng'r. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upper. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.89 | 759.2 | 29.93 | 760.2 | 26.2 | — 3.2 | ..... | N | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.91 | 759.6 | 29.96 | 760.9 | 25.5 | — 3.6 | 69 | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.92 | 759.9 | 29.97 | 761.2 | 33.1 | 0.6 | 82 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.84 | 757.9 | 30.02 | 762.4 | 32.7 | 0.4 | 57 | Calm | ..... | ..... | 0 | ..... | 7 | ..... | ..... | 0.028 | 0.7 | ..... | |
| Wisby | 29.95 | 760.8 | 30.01 | 762.3 | 33.1 | 0.6 | 85 | W | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0.051 | 1.3 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.92 | 759.9 | 29.99 | 761.8 | 30.2 | — 1.0 | 67 | WNW | 1 | 0.4 | ..... | ..... | 7 | WNW | ..... | 0.005 | 0.13 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.08 | 736.1 | 30.43 | 772.9 | 46.8 | 8.2 | 76 | N | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | The Observatory. |
| Zurich | 28.85 | 732.7 | 30.52 | 775.2 | 48.2 | 6.2 | 84 | SE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | Cloudy..... | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +10.9 mm.; Thermometer, +1.8 cent.; Relative Humidity, +12 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.08 | 764.0 | 46.4 | 8.0 | 66 | NE | 19 | 8.5 | ..... | ..... | 10 | ..... | NE | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.20 | 767.0 | 64.4 | 18.0 | ..... | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 30.09 | 764.3 | 52.0 | 11.1 | ..... | NW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.50 | 749.3 | 29.62 | 752.4 | 62.4 | 16.9 | 68 | N | ..... | ..... | 4 | ..... | 5c | ..... | ..... | 0 | 0 | D. clouds..... | Prof. C. V. A. Van Dyck |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.04 | 763.0 | 30.11 | 764.8 | 7.5 | —13.6 | 80 | NE | 16 | 7.2 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast..... | Hon. J. Ferguson |
| Brockville, Ontario | 29.80 | 756.9 | 30.12 | 765.0 | 24 | — 4.4 | ..... | W | 1 | 0.4 | ..... | ..... | 10n | ..... | W | 0.26 | 6.6 | Light snow.. | W. R. Bigg. |
| *Chatham, N. B | 29.99 | 761.7 | 30.06 | 763.5 | 12 | —11.1 | 90 | SE | 9 | 4.0 | ..... | 2k | 8s | SE | SE | 0.12 | 3.0 | Cloudy..... | G. A. Blair. |
| Charlottetown, P. E. Island | 29.96 | 761.0 | 30.00 | 762.0 | 13 | —10.6 | 89 | E | 12 | 5.4 | ..... | 0 | 2ks | ..... | Calm | 0 | 0 | Fair..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.82 | 757.4 | 30.03 | 762.8 | 15.8 | — 9.0 | 79 | NW | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0.30 | 7.6 | Overcast..... | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 29.41 | 747.0 | 29.46 | 748.3 | 36.1 | 2.3 | 100 | Calm | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | W. H. Bevis. |
| *Father Point, Quebec | 30.00 | 762.0 | 30.03 | 762.8 | 13 | —10.6 | 73 | E | 25 | 11.2 | ..... | ..... | 10n | ..... | Calm | 0.06 | 1.5 | Light snow.. | J. McWilliams. |
| Fredericton, N. B | 29.86 | 758.4 | 29.93 | 760.2 | 13.3 | —10.4 | 91 | NE | 15 | 6.7 | ..... | ..... | 10n | ..... | ..... | 0.19 | 4.8 | Light snow.. | Prof. Harrison. |
| *Fort Garry Manitoba | 28.94 | 735.1 | 29.80 | 756.9 | 24 | — 4.4 | 87 | SE | 22 | 9.8 | ..... | 5k | 5ks | SE | SE | 0 | 0 | Cloudy..... | James Stewart. |
| Granton, Ontario | 29.00 | 738.9 | 30.27 | 768.8 | 24 | — 4.4 | ..... | N | ..... | ..... | 1 | 1cs | 0 | N | ..... | 0 | 0 | Clear..... | James Grant. |
| *Halifax, N. S | 29.64 | 752.8 | 29.78 | 756.4 | 22 | — 5.6 | 97 | E | 15 | 6.7 | ..... | ..... | 10n | ..... | ..... | 0.20 | 5.1 | Heavy snow | F. Allison, M. A. |
| Hamilton, Ontario | 29.90 | 759.4 | 30.30 | 769.6 | 22.7 | — 5.2 | 82 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.77 | 756.1 | 30.12 | 765.0 | 25 | — 3.9 | 86 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.14 | 3.6 | Cloudy..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.02 | 762.5 | 30.06 | 763.5 | 13.8 | —10.1 | 93 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast..... | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 29.80 | 756.9 | 30.02 | 762.5 | 13 | —10.6 | 79 | W | 12 | 5.4 | ..... | 2c | 2s | ..... | ..... | 0.33 | 8.4 | Cloudy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.54 | 750.3 | 30.30 | 769.6 | 7 | —13.9 | 73 | W | 8 | 3.6 | ..... | 2ck | 2ks | NW | NW | 0 | 0 | Fair..... | Rev. R. Mosley. |
| Peterboro, Ontario | 29.33 | 745.0 | 30.16 | 766.1 | 8.7 | —12.9 | 69 | NE | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.10 | 2.5 | Overcast..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.55 | 750.6 | 30.20 | 769.4 | 26 | — 3.3 | 75 | N | 8 | 3.6 | ..... | 10k | 0 | Calm | ..... | 0.07 | 1.8 | Fair..... | H. Morgan. |
| Port Hastings, N. S | 29.97 | 761.2 | 30.02 | 762.5 | 9.7 | —12.4 | ..... | E | 10 | 4.5 | ..... | ..... | ..... | ..... | ..... | 0.40 | 10.2 | Cloudy..... | Peter Grant. |
| Port Stanley, Ontario | 29.59 | 751.6 | 30.28 | 769.1 | 26 | — 3.3 | 79 | NW | 2 | 0.9 | ..... | 2ck | 5ks | SW | NW | Inap. | Inap. | Cloudy..... | M. Payne. |
| *Quebec, Quebec | 29.60 | 751.8 | 29.95 | 760.7 | 10 | —12.2 | 100 | NE | ..... | ..... | 6 | ..... | 10n | ..... | NE | 0.42 | 10.7 | Cloudy..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.66 | 753.4 | 30.14 | 765.5 | 23 | — 5.0 | 73 | W | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.21 | 5.3 | Light snow.. | W. H. McIntyre. |
| St. Andrews, N. B | 29.76 | 754.4 | 29.75 | 755.6 | 21 | — 6.1 | 94 | E | ..... | ..... | 4 | ..... | 10n | ..... | ..... | 0.46 | 11.4 | Light snow.. | Dr. Gove. |
| St. John, N. B | 29.63 | 752.6 | 29.81 | 757.2 | 19 | — 7.2 | 100 | NE | 20 | 8.9 | ..... | ..... | 10n | ..... | ..... | 0.52 | 13.2 | Heavy snow | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.51 | 749.5 | 30.27 | 768.8 | 21 | — 6.1 | 89 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | K. Stewart. |
| Stayner, Ontario | 29.46 | 748.3 | 30.20 | 769.4 | 21 | — 6.1 | 87 | N | 8 | 3.6 | ..... | 2k | 0 | NW | ..... | 0 | 0 | Fair..... | R. J. Cole. |
| Stratford, Ontario | 28.90 | 734.0 | 30.27 | 768.8 | 22.4 | — 5.3 | 90 | NW | 6.5 | 2.9 | ..... | 3cs;k | 6ks;s | ..... | ..... | 0 | 0 | Overcast..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.08 | 764.0 | 30.13 | 765.3 | 11 | —11.7 | 90 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy..... | T. C. Hill. |
| *Toronto, Ontario | 29.87 | 758.7 | 30.28 | 769.1 | 20 | — 6.7 | 79 | NW | 7 | 3.1 | ..... | 0 | 2s | ..... | NW | Inap. | Inap. | Clear..... | Magnetic Observatory |
| Windsor, N. S | 29.72 | 754.9 | 29.82 | 757.4 | 17.5 | — 8.1 | 92 | E | 20 | 8.9 | ..... | ..... | 10n | ..... | ..... | 0.44 | 11.2 | Snowing..... | Prof. John E. Oram |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 16.0 | — 8.9 | 100 | NE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.03 | 0.8 | Fine..... | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters, Stratford, 1,182 ft., or 360.3 meters.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount.. Up'er 0—10. | Clouds. Amount.. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.79 | 756.7 | 30.04 | 763.0 | 29 | — 1.7 | 67 | NW | 16 | 7.2 | ..... | 0 | 2ks | ..... .. . | NW | 0.46 | 11.7 | Fair | |
| Alpena, Michigan | 29.62 | 752.3 | 30.32 | 770.1 | 20 | — 6.7 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Atlanta, Georgia | 29.09 | 738.9 | 30.25 | 768.3 | 54 | 12.2 | 68 | SW | 9 | 4.0 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Smoky | |
| Atlantic City, New Jersey | 30.06 | 763.5 | 30.08 | 764.0 | 40 | 4.4 | 65 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Augusta, Georgia | 30.10 | 764.5 | 30.29 | 769.4 | 49 | 9.4 | 78 | NW | 1 | 0.4 | ..... | 2cs | Hz;fog | Calm | Calm | 0 | 0 | Hazy | |
| Baltimore, Maryland | 30.09 | 764.3 | 30.14 | 765.5 | 46 | 7.8 | 54 | NW | 3 | 1.3 | ..... | 5c | 2s | NW | NW | 0.02 | 0.5 | Fair | |
| Barnegat, New Jersey | 30.03 | 762.8 | 30.05 | 763.3 | 41 | 5.0 | 49 | NW | 10 | 4.5 | ..... | 2k | 0 | NW | ..... | 0.02 | 0.5 | Clear | |
| Bismarck, Dakota | 27.66 | 702.6 | 29.52 | 749.8 | 29 | — 1.7 | 100 | E | 6 | 2.7 | ..... | 5c | 0 | S | ..... | 0 | 0 | Fair | |
| Boerne, Texas | 28.66 | 728.0 | 29.07 | 761.2 | 61 | 16.1 | 94 | SE | ..... | ..... | 2 | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.02 | 686.3 | 29.98 | 761.5 | 37 | 2.8 | 58 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boston, Massachusetts | 29.67 | 753.6 | 29.83 | 757.7 | 31 | — 0.6 | 79 | NW | 15 | 6.7 | ..... | 1k | 0 | NW | ..... | 0.15 | 3.8 | Clear | |
| Brackettville, Texas | 28.96 | 735.6 | 29.98 | 761.5 | 65 | 18.3 | 78 | SE | 9 | 4.0 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 28.71 | 729.2 | 29.71 | 754.6 | 35 | 1.7 | 80 | SE | 29 | 13.0 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Brownsville, Texas | 30.07 | 763.8 | 30.12 | 765.0 | 65 | 18.3 | 80 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.51 | 749.5 | 30.26 | 768.6 | 24.5 | — 4.2 | 74 | W | 7 | 3.1 | ..... | 1ck | 0 | NW | ..... | Inap. | Inap. | Clear | |
| Burkes, Arizona | . .... | ..... | ..... | ..... | 53 | 11.7 | 19 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.70 | 754.4 | 30.01 | 762.2 | 18 | — 7.8 | 68 | N | 12 | 5.4 | ..... | 2k | 2s | NW | NW | 0.05 | 1.3 | Fair | |
| Cairo, Illinois | 29.78 | 756.4 | 30.18 | 766.6 | 58 | 14.4 | 58 | S | 8 | 3.6 | ..... | 2c | 0 | Calm | ..... | 0.01 | 0.3 | Fair | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.16 | 639.0 | 29.96 | 761.0 | 49 | 9.4 | 31 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 36 | 2.2 | 53 | S | ..... | ..... | 2 | 2c | 0 | S | ... ..... | 0 | 0 | Clear | |
| Campo, California | 27.50 | 698.5 | 30.07 | 763.8 | 38 | 3.3 | 90 | SW | 4 | 1.8 | ..... | ..... | Fog | ..... | SW | 0 | 0 | Foggy | |
| Cape Hatteras, N. Carolin | 30.11 | 764.8 | 30.12 | 765.0 | 49 | 9.4 | 93 | W | 12 | 5.4 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Cape Henry, Virginia | 30.04 | 763.0 | 30.06 | 763.5 | 57 | 13.9 | 58 | W | 10 | 4.5 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Hazy | |
| Cape Lookout, N. Carolin | 30.14 | 765.5 | 30.15 | 765.8 | 51 | 10.6 | 100 | SW | 17 | 7.6 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 30.04 | 763.0 | 30.08 | 764.0 | 41 | 5.0 | 65 | NW | 24 | 10.7 | ..... | 5cs | 0 | Calm | ..... | 0.01 | 0.3 | Fair | |
| Castroville, Texas | 29.44 | 747.8 | 30.04 | 763.0 | 64 | 17.8 | 78 | S | 5 | 2.2 | ..... | ..... | 10ks | ... ..... | S | 0 | 0 | Cloudy | |
| Charleston, South Carolin | 30.21 | 767.3 | 30.27 | 768.8 | 53 | 11.7 | 86 | W | 4 | 1.8 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Cheyenne, Wyoming | 23.82 | 605.0 | 29.76 | 755.9 | 42 | 5.6 | 27 | SW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.48 | 748.8 | 30.20 | 767.1 | 38 | 3.3 | 81 | E | 7 | 3.1 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Cincinnati Ohio | 29.58 | 751.3 | 30.25 | 768.3 | 46 | 7.8 | 80 | E | 1 | 0.4 | ..... | ..... | 10n;fog | ..... | Calm | 0.14 | 3.6 | Light rain | |
| Cleveland, Ohio | 29.54 | 750.3 | 30.30 | 769.6 | 30 | — 1.1 | 68 | N | 9 | 4.0 | ..... | 5cs | 0 | Calm | ..... | 0.05 | 1.3 | Fair | |
| Coleman City, Texas | 28.27 | 718.0 | 29.93 | 760.2 | 56 | 13.3 | 81 | S | 6 | 2.7 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Columbus, Ohio | 29.39 | 746.5 | 30.26 | 768.6 | 36 | 2.2 | 80 | NW | 1 | 0.4 | ..... | 2ck | Fog | Calm | Calm | 0.05 | 1.3 | Foggy | |
| Concho, Texas | 28.15 | 715.0 | 29.81 | 757.2 | 57 | 13.9 | 87 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.65 | 753.1 | 30.12 | 765.0 | 64 | 17.8 | 83 | SE | 13 | 5.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.42 | 747.2 | 30.07 | 763.8 | 42 | 5.6 | 74 | E | 14 | 6.3 | ..... | 10cs | 0 | E | ..... | 0 | 0 | Cloudy | |
| Deadwood, Dakota | 24.94 | 633.5 | ..... | ..... | 57 | 13.9 | 20 | S | 28 | 12.5 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Decatur, Texas | 28.92 | 734.6 | 30.08 | 764.0 | 61 | 16.1 | 86 | SE | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.27 | 743.4 | 30.06 | 763.5 | 61 | 16.1 | 88 | S | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.56 | 623.8 | 29.78 | 756.4 | 45 | 7.2 | 31 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Des Moines, Iowa | 29.04 | 737.6 | 29.93 | 760.2 | 40 | 4.4 | 78 | SE | 2 | 0.9 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Detroit, Michigan | 29.58 | 751.3 | 30.29 | 769.4 | 28 | — 2.2 | 77 | NE | 4 | 1.8 | ..... | 2cs | 8s | Calm | NE | 0 | 0 | Cloudy | |
| Dodge City, Kansas | 27.26 | 692.4 | 29.53 | 750.0 | 46 | 7.8 | 84 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.41 | 747.0 | 30.13 | 765.3 | 37 | 2.8 | 81 | SE | 4 | 1.8 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 29.40 | 746.7 | 30.10 | 764.5 | 29 | — 1.7 | 89 | NE | 18 | 8.0 | ..... | 2ck | 2s | NE | Calm | 0 | 0 | Fair | |
| Eagle Pass, Texas | 29.28 | 743.7 | 30.02 | 762.5 | 60 | 15.6 | 88 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.62 | 753.4 | 29.74 | 755.4 | 22 | —5.6 | 100 | NE | 38 | 17.0 | ..... | ..... | 10n | ..... | ..... | 0.50 | 12.7 | Light snow | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 63 | 17.2 | 89 | S | ..... | ..... | 1 | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| El Paso, Texas | 26.21 | 665.7 | ..... | ..... | 56 | 13.3 | 34 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.51 | 749.5 | 30.26 | 768.6 | 29 | — 1.7 | 78 | N | 2 | 0.9 | ..... | 2k | 5s | N | N | 0.15 | 3.8 | Cloudy | |
| Escanaba, Michigan | 29.61 | 752.1 | 30.32 | 770.1 | 21 | — 6.1 | 71 | N | 3 | 1.3 | ..... | 0 | 5s | ..... | N | 0 | 0 | Fair | |
| Florence, Arizona | 28.48 | 723.4 | 30.08 | 764.0 | 50 | 10.0 | 45 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.57 | 700.3 | ..... | ..... | 27 | — 2.8 | 77 | NW | 12 | 5.4 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Fort Craig, New Mexico | 25.47 | 646.9 | 29.54 | 750.3 | 40 | 4.4 | 56 | Calm | 0 | 0 | ..... | 2ck | 0 | Calm | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.20 | 640.1 | 30.16 | 766.1 | 57 | 13.9 | 53 | SW | 5 | 2.2 | ..... | 2k | 0 | W | ..... | Inap. | Inap. | Fair | |
| Fort Gibson, Indian Ter | 29.48 | 748.8 | 30.01 | 762.2 | 62 | 16.7 | 77 | S | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.73 | 729.7 | 29.95 | 761.5 | 60 | 15.6 | 82 | SE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.14 | 689.3 | ..... | ..... | 37 | 2.8 | 90 | NW | 13 | 5.8 | ..... | ..... | 10s | ..... | Calm | 0.06 | 1.5 | Cloudy | |
| Fort McKavett, Texas | 27.81 | 706.4 | 29.71 | 754.6 | 57 | 13.9 | 87 | S | 8 | 3.6 | ..... | 0 | 8s | ..... | S | 0 | 0 | Fair | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.78 | 731.0 | 29.89 | 759.2 | 52 | 11.1 | 86 | S | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Stevenson, Dakota | 27.87 | 702.8 | ..... | ..... | 20 | —6.7 | 86 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fredericksburg, Texas | 28.36 | 720.3 | 29.91 | 759.7 | 62 | 16.7 | 83 | S | 4 | 1.8 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 30.15 | 765.8 | 30.20 | 767.1 | 63 | 17.2 | 94 | SE | 4 | 1.8 | ..... | 0 | 0 | ... | ..... | 0 | 0 | Clear | |
| Graham, Texas | 28.94 | 735.1 | 29.98 | 761.5 | 62 | 16.7 | 72 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.58 | 751.3 | 30.26 | 768.6 | 31 | — 0.6 | 58 | E | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Indianapolis, Indiana | 29.40 | 746.7 | 30.20 | 767.1 | 41 | 5.0 | 82 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.10 | 2.5 | Cloudy | |
| Indianola, Texas | 30.17 | 766.3 | 30.20 | 767.1 | 62 | 16.7 | 89 | S | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Jacksboro, Texas | 29.10 | 739.1 | 30.24 | 768.1 | 60 | 15.6 | 60 | S | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.25 | 768.3 | 30.27 | 768.8 | 53 | 11.7 | 93 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Keokuk, Iowa | 29.37 | 746.0 | 29.99 | 761.7 | 46 | 7.8 | 77 | E | 12 | 5.4 | ..... | 9k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Key West, Florida | 30.16 | 766.1 | 30.20 | 767.1 | 68 | 20.0 | 79 | NE | 8 | 3.6 | ..... | 1k | 0 | Calm | ..... | 0.07 | 1.8 | Clear | |
| Kittyhawk North Carolina | 30.04 | 763.0 | 30.06 | 763.5 | 53 | 11.7 | 81 | W | 12 | 5.4 | ..... | 2cs | Haze | W | W | 0 | 0 | Fair | |
| Knoxville, Tennessee | 29.24 | 742.7 | 30.24 | 768.1 | 54 | 12.2 | 67 | SW | 6 | 2.7 | ..... | ..... | 10ks | ..... | NW | 0 | 0 | Cloudy | |
| La Crosse, Wisconsin | 29.32 | 744.7 | 30.08 | 764.0 | 41 | 5.0 | 49 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 26.19 | 665.2 | 30.34 | 770.6 | 42 | 5.6 | 83 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.65 | 753.1 | 29.98 | 761.5 | 68 | 20.0 | 74 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.01 | 736.8 | 29.84 | 757.9 | 53 | 11.7 | 93 | S | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.77 | 756.1 | 30.12 | 765.0 | 47.5 | 8.6 | 81 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Louisville, Kentucky | 29.62 | 752.2 | 30.18 | 766.6 | 53 | 11.7 | 86 | NE | 4 | 1.8 | ..... | ..... | 10s;fg | ..... | Calm | 0.08 | 2.0 | Cloudy | |
| Lynchburg, Virginia | 29.44 | 747.8 | 30.11 | 764.8 | 60 | 15.6 | 59 | W | 2 | 0.9 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Madison, Wisconsin | 29.15 | 740.4 | 30.18 | 766.6 | 36 | 2.2 | 71 | SE | 14 | 6.3 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | |
| Marquette, Michigan | 29.54 | 750.3 | 30.29 | 769.4 | 22 | —5.6 | 72 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Mason, Texas | 28.46 | 722.9 | 30.20 | 767.1 | 62 | 16.7 | 77 | S | 5 | 2.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.88 | 758.9 | 30.20 | 767.1 | 56 | 13.3 | 57 | S | 5 | 2.2 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.48 | 748.8 | 30.24 | 768.1 | 34 | 1.1 | 70 | E | 18 | 8.0 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Mobile, Alabama | 30.26 | 768.6 | 30.30 | 769.6 | 47 | 8.3 | 100 | S | 1 | 0.4 | ..... | 0 | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Montgomery, Alabama | 30.05 | 763.3 | 30.30 | 769.6 | 49 | 9.4 | 85 | SE | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Morgantown, West Virginia | 29.13 | 739.9 | 30.21 | 767.3 | 44 | 6.7 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... ..... | ..... | 0.39 | 9.9 | Clear | |
| Mt. Washington, N. H. | 23.20 | 589.3 | 29.56 | 750.8 | 0 | —17.8 | 100 | NW | 36 | 16.1 | ..... | ... ... | 10n | ..... | NW | 0.58 | 14.7 | Light snow | |
| Nashville, Tennessee | 29.69 | 754.1 | 30.24 | 768.1 | 50 | 10.0 | 79 | Calm | 0 | 0 | ..... | 2c | Haze | Calm | ..... | 0 | 0 | Fair | |
| New Haven, Connecticut | 29.84 | 757.9 | 29.96 | 761.0 | 34 | 1.1 | 75 | NW | 23 | 10.3 | ..... | 0 | 0 | ..... | ..... | 0.20 | 5.1 | Clear | |
| New London, Connecticut | 29.88 | 758.9 | 29.93 | 760.2 | 36 | 2.2 | 53 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| New Orleans, Louisiana | 30.19 | 766.8 | 30.25 | 768.3 | 51 | 10.6 | 93 | S | 4 | 1.8 | ..... | ... ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Newport, Rhode Island | 29.83 | 757.7 | 29.88 | 758.9 | 35 | 1.7 | 53 | W | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear | |
| New York, New York | 29.87 | 758.7 | 30.06 | 763.5 | 37 | 2.8 | 62 | NW | 16 | 7 2 | ..... | 2k | 2s | SE | Calm | 0.02 | 0.5 | Fair | |
| Norfolk, Virginia | 30.04 | 763.0 | 30.10 | 764.5 | 54 | 12.2 | 67 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. | | Barometer. Reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. Direction. | Wind. Velocity. | | Wind. Force. | Clouds. Amount. | | Clouds. Direction. | | Rain-fall or melted snow in the past 24 hours. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10 | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | Inches. | Millimeters. | | |
| North Platte, Nebraska | 26.85 | 682.0 | 29.40 | 746.7 | 42 | 5.6 | 96 | SW | 7 | 3.1 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Olympia, Washington Ter. | 29.56 | 750.8 | 29.59 | 751.6 | 37.3 | 2.9 | 90 | S | 9 | 4.0 | ..... | ..... | 10n | ..... | S | 0.38 | 9.7 | Light rain | |
| Omaha, Nebraska | 28.68 | 728.5 | 29.78 | 756.4 | 43 | 6.1 | 83 | E | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Oswego, New York | 29.85 | 758.2 | 30.19 | 766.8 | 30 | — 1.1 | 78 | NW | 16 | 7.2 | ..... | 8k | 0 | NW | ..... | 0.05 | 1.3 | Fair | |
| Pembina, Dakota | 28.89 | 733.8 | 29.74 | 755.4 | 32 | 0.0 | 79 | SE | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Philadelphia, Pa | 30.03 | 762.8 | 30.08 | 764.0 | 42 | 5.6 | 58 | NW | 11 | 4.9 | ..... | 2cs | 0 | Calm | ..... | 0.05 | 1.3 | Fair | |
| Phœnix, Arizona | 28.80 | 731.5 | 30.65 | 778.5 | 43 | 6.1 | 51 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.62 | 447.5 | 29.83 | 757.7 | 16 | — 8.9 | Inap. | SW | 40 | 17.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pioche, Nevada | 23.97 | 608.8 | 29.64 | 752.8 | 37 | 2.8 | 45 | S | 7 | 3.1 | ..... | 5k | 5s | S | S | 0 | 0 | Cloudy | |
| Pittsburg, Pennsylvania | 29.39 | 746.5 | 30.23 | 767.8 | 37 | 2.8 | 71 | N | 6 | 2.7 | ..... | 1k | 0 | ..... | N | 0.22 | 5.6 | Clear | |
| Port Huron, Michigan | 29.56 | 750.8 | 30.27 | 768.8 | 25 | — 3.9 | 75 | N | 6 | 2.7 | ..... | 5cs | 0 | W | ..... | 0.02 | 0.5 | Fair | |
| Portland, Maine | 29.73 | 755.1 | 29.78 | 756.4 | 23 | — 5.0 | 60 | NW | 4 | 1.8 | ..... | 1k | Haze | Calm | ..... | 0.41 | 10.4 | Fair | |
| Portland, Oregon | 29.59 | 751.6 | 29.69 | 754.1 | 40.0 | 4.4 | 91 | S | 8 | 3.6 | ..... | ..... | 10n | ..... | S | 1.07 | 27.2 | Light rain | |
| Prescott, Arizona | 24.66 | 626.4 | 30.02 | 762.5 | 28 | — 2.2 | 66 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.16 | 740.7 | 29.99 | 761.7 | 53 | 11.7 | 72 | E | 12 | 5.4 | ..... | 0 | 2s | ..... | SE | 0 | 0 | Fair | |
| Punta Rassa, Florida | 30.24 | 768.1 | 30.25 | 768.3 | 61 | 16.1 | 88 | NE | 8 | 3.6 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Red Bluff, California | 29.56 | 750.8 | 29.92 | 760.0 | 45 | 7.2 | 84 | SE | 24 | 10.7 | ..... | Haze | 5ks | Calm | S | 0 | 0 | Fair | |
| Rio Grande City, Texas | 29.93 | 760.2 | 30.15 | 765.8 | 65 | 18.3 | 89 | E | 12 | 5.4 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Rochester, New York | 29.54 | 750.3 | 30.19 | 766.8 | 26 | — 3.3 | 88 | NW | 13 | 5.8 | ..... | 5k | 0 | NW | ..... | 0.02 | 0.5 | Fair | |
| Roseburg, Oregon | 29.16 | 740.7 | 29.73 | 755.1 | 35.0 | 3.3 | 91 | S | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | 0.86 | 21.8 | Light rain | |
| Sacramento, California | 29.96 | 761.0 | 30.05 | 763.3 | 47 | 8.3 | 81 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | S | 0.20 | 5.1 | Threatening | |
| St. Louis, Missouri | 29.49 | 749.0 | 30.06 | 763.5 | 54 | 12.2 | 50 | Calm | 0 | 0 | ..... | 5c | Sm'e | Calm | ..... | 0.10 | 2.5 | Fair | |
| St. Marks, Florida | 30.25 | 768.3 | 30.27 | 768.8 | 45 | 7.2 | 92 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.09 | 738.9 | 29.93 | 760.2 | 39 | 3.9 | 63 | E | 16 | 7.2 | ..... | 10ck | 0 | S | ..... | 0 | 0 | Cloudy | |
| Salt Lake City, Utah | 25.52 | 648.2 | 29.85 | 758.2 | 40 | 4.4 | 48 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| San Antonio, Texas | 29.45 | 748.0 | 30.02 | 762.5 | 65 | 18.3 | 84 | SE | 6 | 2.7 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Cloudy | |
| San Diego, California | 30.08 | 764.0 | 30.16 | 766.1 | 54 | 12.2 | 80 | NW | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.59 | 751.6 | 30.30 | 769.6 | 35 | 1.7 | 70 | E | 16 | 7.2 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Sandy Hook, New Jersey | 30.00 | 762.0 | 30.04 | 763.0 | 38 | 3.3 | 63 | NW | 28 | 12.5 | ..... | 1k | 0 | NW | ..... | 0.05 | 1.3 | Clear | |
| San Francisco, California | 29.98 | 761.5 | 30.04 | 763.0 | 49.3 | 9.6 | 75 | S | 6 | 2.7 | ..... | 0 | 8ks | ..... | S | 0.33 | 8.4 | Fair | |
| Santa Fé, New Mexico | 23.24 | 590.3 | 29.78 | 756.4 | 42 | 5.6 | 42 | NE | 5 | 2.2 | ..... | 10ck | 0 | NE | ..... | 0 | 0 | Cloudy | |
| Savannah, Georgia | 30.17 | 766.3 | 30.27 | 768.8 | 52 | 11.1 | 93 | W | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Shreveport, Louisiana | 29.96 | 760.7 | 30.17 | 766.3 | 63 | 17.2 | 89 | SW | 6 | 2.7 | ..... | 8cs | 0 | SW | ..... | 0 | 0 | Fair | |
| Silver City, New Mexico | 24.28 | 616.7 | 30.58 | 776.7 | 43 | 6.1 | 48 | W | 8 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.20 | 767.1 | 30.24 | 768.1 | 60 | 10.0 | 100 | W | 6 | 2.7 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Springfield, Massachusetts | 29.50 | 749.0 | 29.93 | 760.2 | 34 | 1.1 | 52 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.36 | 9.1 | Clear | |
| Stockton, Texas | 26.96 | 684.8 | 29.96 | 761.0 | 57 | 13.9 | 69 | S | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.79 | 756.7 | 29.85 | 758.2 | 30 | — 1.1 | 68 | NW | 30 | 13.4 | ..... | 0 | 2s | ..... | NW | 0.10 | 2.5 | Fair | |
| Toledo, Ohio, | 29.55 | 750.6 | 30.28 | 769.1 | 33 | 0.6 | 70 | E | 8 | 3.6 | ..... | 5cs | 0 | N | ..... | 0 | 0 | Fair | |
| Tucson, Arizona | 27.51 | 698.7 | 30.06 | 763.5 | 48 | 8.9 | 49 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.34 | 745.2 | 29.84 | 757.9 | 34.5 | 1.4 | 85 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.06 | 1.5 | Cloudy | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 33 | 0.6 | 79 | W | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Uvalde, Texas | 29.21 | 741.9 | 30.02 | 762.5 | 65 | 18.3 | 78 | S | 2 | 0.9 | ..... | 0 | 2s | ..... | S | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 30.02 | 762.5 | 30.29 | 769.4 | 55 | 12.8 | 87 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Virginia City, Montana | 25.99 | 660.3 | 29.47 | 748.5 | 28 | — 2.2 | 77 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.46 | 11.7 | Cloudy | |
| Visalia, California | 29.76 | 755.9 | 30.14 | 765.5 | 45 | 7.2 | 84 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | E | 0.09 | 2.3 | Cloudy | |
| Washington, D. C. | 30.02 | 762.5 | 30.14 | 765.5 | 46 | 7.8 | 40 | NW | 8 | 3.6 | ..... | 8c;cs | 0 | N;calm | ..... | Inap. | Inap. | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 36 | 2.2 | 61 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.10 | 764.5 | 30.18 | 766.6 | 55 | 12.8 | 87 | W | 8 | 3.6 | ..... | 5ck | Haze | Calm | ..... | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.50 | 647.7 | 29.86 | 758.4 | 30 | — 1.1 | 68 | SW | 12 | 5.4 | ..... | 5k | 0 | SW | ..... | 0.03 | 0.8 | Fair | |
| Wood's Holl, Mass | 29.78 | 756.4 | 29.82 | 757.4 | 34 | 1.1 | 69 | NW | 30 | 13.4 | ..... | 0 | 2ks | ..... | NW | 0.07 | 1.8 | Clear | |
| Yankton, Dakota | 28.50 | 723.9 | 29.79 | 756.7 | 42 | 5.6 | 74 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.81 | 757.2 | 29.98 | 761.5 | 57 | 13.9 | 58 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.50 | 723.9 | 29.88 | 758.9 | 60 | 15.6 | 70 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.12 | 765.0 | 30.17 | 766.3 | 70 | 21.1 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.23 | 640.8 | ..... | ..... | 66.0 | 18.9 | 80 | Calm | 0 | 0 | ..... | 3cs;k | 2ks | ..... | ..... | 2.28 | 58.6 | ..... | Thomas Herran. |
| Navassa, W. I | 29.95 | 760.7 | 30.03 | 762.8 | 76 | 24.4 | ..... | NE | 6 | 2.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Partly old'y | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.02 | 762.5 | 30.02 | 762.5 | 78 | 25.6 | 86 | E | ..... | ..... | 2 | 5ck | 6k | E | ..... | 0 | 0 | Fair | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Fortescue & W. Wood. |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,181.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,037.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,862.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,642 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,385.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.556 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.39 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

## UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | | | | | | | | | | | | | | | | | | | | | |
| Navy Yard, Pensacola, Fla. | 30.35 | 770.9 | 54 | 12.2 | 54 | 12.2 | 93 | N | 1 | 0.4 | | | Fog | | | 0 | 0 | | | Clear. | |
| Navy Yard, Portsmouth, N.H | 29.82 | 757.4 | 56 | 13.3 | 29 | — 1.7 | 66 | W | 3 | 1.3 | | | 2 | | | | | | | Clear. | |
| Naval Hospital, Yokohama, Japan....* | 29.98‡ | 761.5‡ | | | 39.2 | 4.0 | 82 | N | | | 4 | | 2ck | | SW | Slight | Slight | | | Fair | |
| Adams, Panama | 29.94 | 760.5 | 76 | 24.4 | 76 | 24.4 | 95 | NW | | | 3 | | 5 | | N;W | | | | | Fair | |
| Alaska, N. 30° 16′, W. 116° 02′ | 30.21 | 767.3 | 65 | 18.3 | 58 | 14.4 | 58 | NW | | | 5 | | 5 | | SE | | | Mod'ate | NW | Hazy | |
| Alliance, Villafranca, France | 30.35‡ | 770.9‡ | | | 60 | 15.6 | 58 | E | | | 0–1 | | 2 | | N;E | | | | | Clear | |
| Ashuelot, Hong-Kong, China | 30.21‡ | 767.3‡ | | | 67 | 19.9 | 75 | ENE | | | 4 | | 10 | | ENE | | | Smooth | | Cloudy | |
| Canonicus, New Orleans, La | 30.20 | 767.1 | 43 | 6.1 | 49 | 9.4 | 93 | NE | | | 2 | | 10 | | NE | | | | | Foggy | |
| Colorado, New York, N. Y. | 30.03 | 762.8 | 39 | 3.9 | 38 | 3.3 | 100 | NW | 15 | 6.7 | | | 2 | | NW | | | | | Light haze. | |
| Constitution Lisbon, Portugal | 30.33‡ | 770.4‡ | | | 64 | 17.8 | 94 | SE | | | 2 | | 9 | | Calm | | | | | Cloudy | |
| Despatch, Constantinople, Turkey | 30.11‡ | 764.8‡ | | | 47 | 8.3 | 70 | NE | | | 3 | | 8 | | NE | | | Smooth | | Cloudy | |
| Franklin, Norfolk, Va. | 30.19 | 766.8 | 66 | 18.9 | 55 | 12.8 | 62 | NNW | 12 | 5.4 | | | 10 | | Calm | 0 | 0 | | | Overcast | |
| Gettysburg, Genoa, Italy | 30.25‡ | 768.3‡ | | | 60 | 15.6 | 88 | S | | | 3 | | 2 | | S | 0 | 0 | | | Clear | |
| Hartford, Montevideo, Uruguay | 29.89 | 759.2 | 77 | 25.0 | 76 | 24.4 | 68 | S | | | 1 | | 2 | | | 0 | 0 | Smooth | | Fair | |
| Lackawana, Panama....* | 29.73‡ | 755.1‡ | | | 76 | 24.4 | 95 | NNW | | | 1 | | 2 | | | 0 | 0 | | | Clear | |
| Michigan, Erie, Pa....† | 30.11 | 764.8 | | | 29 | — 1.7 | 89 | ENE | | | 2 | | 8 | | SW | | | | | Cloudy | |
| Monocacy, Bough Pass, China, (N. 30° E. 122)* | 30.48‡ | 774.2‡ | | | 44 | 6.7 | 68 | ENE | | | 1 | | 2 | | ENE | | | | | Fair | |
| Monongehela, Yokohama, Japan....* | 29.95‡ | 760.7‡ | | | 41 | 5.0 | 58 | NNW | | | 2–4 | | 2 | | N;W | Light | Light | | | D. clouds | |
| New Hampshire, Port Royal, S. C. | 30 40 | 772.1 | 58 | 14.4 | 55 | 12.8 | 41 | SE? | 0? | 0? | | | 8 | | SE | 0 | 0 | | | Misty | |
| Onward, Callao, Peru....† | 30.04 | 763.0 | | | 68 | 20.0 | 90 | SSE | | | 2 | | 8 | | | | | Long | W | Misty | |
| Palos, Tientsin, China | 30.30 | 769.6 | 26 | — 3.3 | 27 | — 2.8 | 66 | S | | | 2 | | 0 | | | | | | | Clear | |
| Passaic, Washington, D. C. | | | | | 47 | 8.3 | 85 | W | | | 3 | | 5 | | | | | | | Fair | |
| Pensacola, Talcahuano, Chili | 29.89‡ | 759.2‡ | | | 65 | 18.3 | 73 | S | 9 | 4.0 | | | 2 | | | 0 | 0 | Smooth | | Clear | |
| Powhatan, N. 20° 25′, W. 73° 48′ | 30.06‡ | 763.5‡ | | | 71 | 21.7 | 85 | E | | | 5 | | 8 | | E | | | Mod'ate | E | Fair | |
| Quinnebaug, Villafranca, France | 30.37‡ | 771.4‡ | | | 61 | 16.1 | 71 | S | | | 1 | | 1 | | SE | | | Smooth | | Clear | |
| Ranger, Kobe, Japan....* | 30.24‡ | 768.1‡ | | | 47 | 8.3 | 62 | WSW | | | 1 | | 0 | | | | | Smooth | | Clear | |
| Richmond, Naples, Italy | 30.27‡ | 768.8‡ | | | 57 | 13.9 | 33 | N | | | 2 | | 0 | | | 0 | 0 | Smooth | | Clear | |
| Rio Bravo, Brownsville, Texas | 30.10 | 764.5 | 64 | 17.8 | 64 | 17.8 | 100 | SE | | | 1 | | 2 | | S | | | | | Fair | |
| Santee, Annapolis, Md. | 30.11‡ | 764.8‡ | | | 45 | 7.2 | 54 | NW | | | 2 | | 8 | | SW | 0.01 | 0.3 | | | Hazy | |
| Saratoga, Potomac River | 30.21 | 767.3 | | | 47 | 8.3 | 92 | NW | | | 3 | | 7 | | Calm | Light | Light | | | D. clouds | |
| St. Louis, League Island, Pa | 30.00 | 762.0 | 57 | 13.0 | 44 | 6.7 | 76 | NW | 12 | 5.4 | | | 2 | | NW | 0.02 | 0.5 | | | Fair | |
| Supply, N. 29° 40′, W. 71° 56′ | 30.30‡ | 769.6‡ | | | 71 | 21.7 | 71 | Calm | | | 0 | | 2 | | SW | | | Mod'ate | SW | Clear | |
| Trenton, Villafranca, France | 30.34‡ | 770.6‡ | | | 68 | 20.0 | 79 | SSE | | | 0–1 | | 0 | | | 0 | 0 | None | | Clear | |
| Tuscarora, Acapulco, Mexico | 29.97‡ | 761.2‡ | | | 77 | 25.0 | 69 | Calm | | | 0 | | 0 | | | 0 | 0 | Smooth | | Clear | |
| Wabash, Boston, Mass. | 29.82‡ | 757.4‡ | | | 32 | 0.0 | 100 | NW | 10 | 4.5 | | | 2 | | | | | | | Fair | |
| Wyoming, N. 40° 40′, E. 28° 23′ | 30.15‡ | 765.8‡ | | | 46 | 7.8 | ?? | NNE | | | 4–6 | | 10 | | NE | | | Mod'ate | NE | Cloudy | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | |
| S. S. Colima, N. 16° 50', W. 93° 29'....† | | 30.00‡ | 762.0‡ | 70 | 26.1 | 66 | NW | | | 2 | | 2 | | Calm | 0 | Small | W | D. clouds.... | Capt. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota, Capt. Morse | | | | | | | | | | | | | | | | | | | |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Granada, Capt. Austin, N. 7° 38, W. 82° 50'.... † | | 30.13‡ | 765.3‡ | 83 | 28.3 | 96 | ESE | | | 3 | | 0 | | | 0 | | | Clear | F. W. Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation, no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |
| **WHITE STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. | | | | | | | | | | | | | | | | | | | |
| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, Capt. L. Meyer, Hong-Kong, China....* | | 30.04‡ | 763.0‡ | 68 | 17.2 | 88 | NNE | | | 4 | | cs | | NE | | Smooth | NNE | D. clouds.... | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 35° 42', E. 151° 45'....† | | 28.97‡ | 735.8‡ | 50 | 10.0 | ?? | W | | | 5 | | k;hz | | Var. | Blank | Swell | Confused | Squally..... | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |
| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 26° 10', W. 52° 17' | | 30.10‡ | 764.5‡ | 82.0 | 27.8 | 83 | NNW | | | 5 | | 2 | | | | Mod'ate | N | Squally..... | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 48° 54', W. 26° 11', | | 30 19‡ | 766.8‡ | 61 | 10.6 | | SSE | | | 7 | | 4 | | SE | 0 | Mod'ate | SW | Partly cl'dy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | |
|---|---|
| S. S. Nederland | Capt. Randle. |
| S. S. Switzerland | Capt. Jackson. |
| S. S. Vaderland | Capt. Nichols. |

**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

| | |
|---|---|
| S. S. Austrian | Capt. W. Richardson. |
| S. S. Hibernian | |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the cooperation of the Observer named.

| | |
|---|---|
| Schooner Addie Fuller | Capt. James Jorgensen. |

Note.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

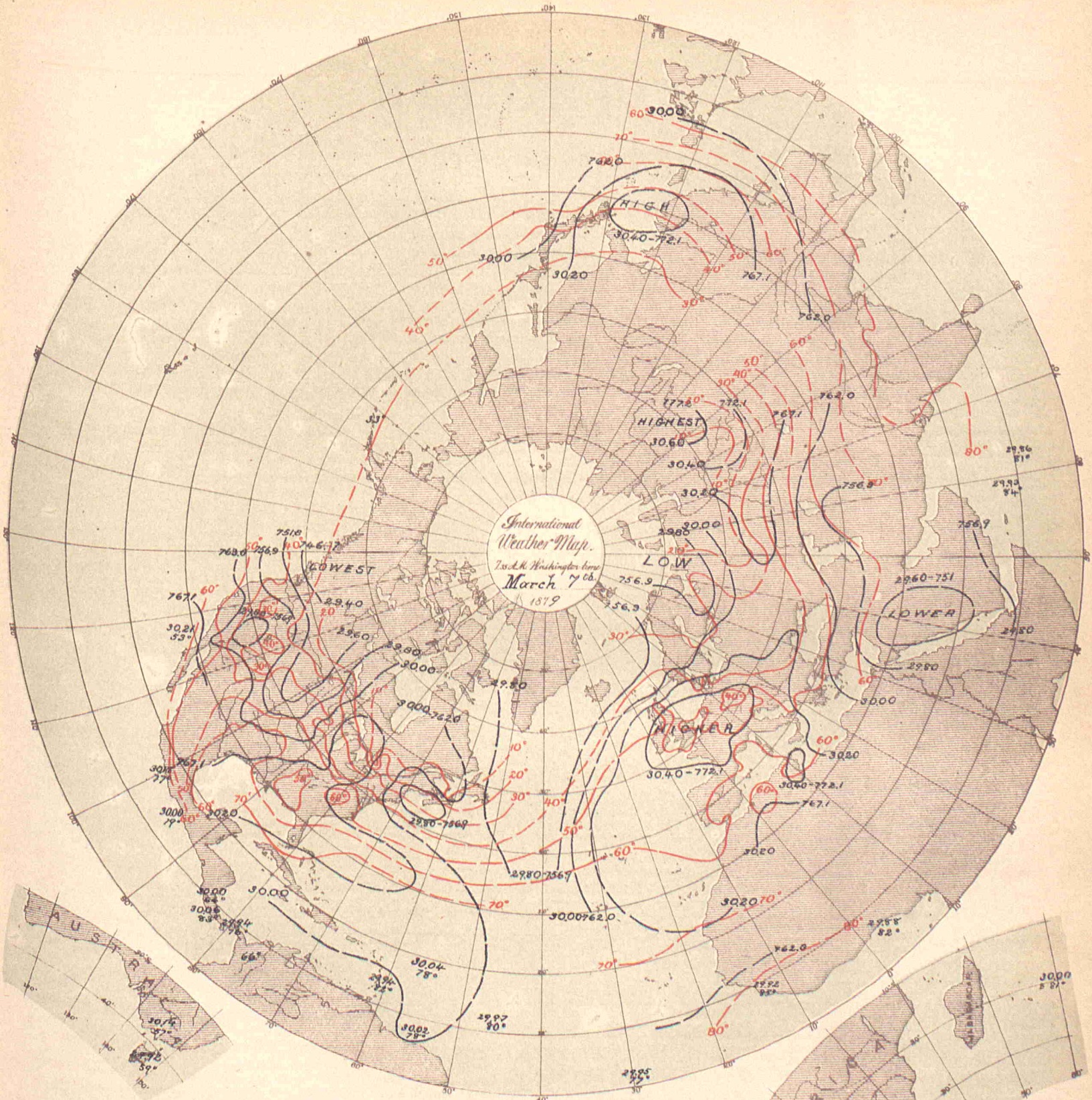
Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 8, 1879.

**7:33 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:28 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 30.25 | 768.4 | 60.1 | 15.6 | 86 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | |
| Nemours | ..... | ..... | 30.30 | 769.7 | 63.3 | 17.4 | 84 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Clear ..... | Kesxuche. |
| Algiers | ..... | ..... | 30.29 | 769.4 | 59.7 | 15.4 | 80 | ENE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair ..... | Tourillere. |
| La Calle | ..... | ..... | 30.41 | 772.4 | 58.5 | 14.7 | 68 | E | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | Foufrede. |
| Tunis | ..... | ..... | 30.44 | 773.2 | 59.7 | 15.4 | 58 | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | Jacques. |
| Sfax | ..... | ..... | 30.43 | 773.0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 30.22 | 767.5 | 55.4 | 13.0 | 48 | S | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Fair..... | Herbin. |
| Tebessa | ..... | ..... | 30.41 | 772 3 | 56.8 | 13.8 | 10 | ESE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | Watrin. |
| Geriville | ..... | ..... | 30.09 | 764.2 | 52.5 | 11.4 | 95 | E | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy ..... | Brugniaux. |
| Laghouat | ..... | ..... | 30.28 | 769.2 | 53.2 | 11.8 | 42 | E | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | Bertrand. |
| Biskra | ..... | ..... | 30.36 | 771.1 | 64.2 | 17.9 | 39 | ESE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair... ..... | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.95 | 760.6 | 30.50 | 774.8 | 53.2 | 11.8 | 34 | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.69 | 754.2 | 30.50 | 774.7 | 37.4 | 3.0 | 90 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.016 | 0.4 | ..... | Dr. Wierzbiski |
| Eperies | 29.44 | 747.7 | 30.35 | 771.0 | 39.2 | 4.0 | 67 | NW | ..... | ..... | 2 | ..... | 7ks | ..... | ..... | 0.039 | 1.00 | ..... | Julius Mikolik. |
| Gratz | 29.24 | 742 7 | 30.53 | 775.4 | 50.4 | 10.2 | 40 | WSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.82 | 731.9 | 30.31 | 769.9 | 36.1 | 2.3 | 91 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.124 | 3.15 | Snowing..... | Prof. A. Gottschling. |
| Kremsmünster | 29.22 | 742.2 | 30.61 | 777.6 | 48.9 | 6.6 | 59 | WNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner. |
| Lemberg | 29.26 | 743.1 | 30.29 | 769.4 | 34.3 | 1.3 | 87 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.051 | 1.3 | ..... | Dr. T. Stanecki. |
| Pola | 30.44 | 775.1 | 30.55 | 776.0 | 52.2 | 11.2 | 61 | WNW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.87 | 758.6 | 30.35 | 770.8 | 44.1 | 6.7 | 54 | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.039 | 1.0 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 30 48 | 774.2 | 30.58 | 776.8 | 51.8 | 11.0 | 82 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | P. Busin. |
| Vienna | 29.81 | 757.1 | 30.54 | 775.7 | 49.5 | 9.7 | 51 | WNW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Royal Observatory |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. E. de Cae. |
| Maeseyck | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Pierrot |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.26 | 768.6 | 30.36 | 771.1 | 49.0 | 9.4 | ..... | SSW | 21 | 9.4 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Blue sky..... | W. Boswell. |
| Ardrossan | 30.40 | 772.1 | 30.42 | 772.6 | 47 | 8.3 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.41 | 772.4 | 50.0 | 10.0 | ..... | S | 18 | 8.0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Squally..... | S. Dall. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.49 | 774.4 | 52.1 | 11.2 | ..... | SSE | 15 | 6.7 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 30.01 | 762.2 | 50.7 | 10.4 | ..... | S | 24 | 10.7 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Thomas Mackereth. |
| Bradford, Yorkshire | 30.08 | 764.0 | 30.48 | 774.2 | 51.6 | 10.9 | ..... | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.93 | 760.2 | 29.96 | 761.0 | 81.5 | 27.5 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Surgener, A. H. C. |
| Cambridge, Observatory | ..... | ..... | 30.62 | 777.7 | 57.0 | 13.9 | ..... | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | H. Todd. |
| Cardington | ..... | ..... | 30.49 | 774.4 | 55.0 | 12.8 | ..... | W | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John McLaren. |
| Chatham, School M. E. | 30.46 | 773.7 | 30.60 | 777.2 | 50.5 | 10.3 | ..... | Calm | ..... | ..... | 0 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Corpl. Daly, R. E. |
| Dartmoor | 28.98 | 736.1 | 30.48 | 774.2 | 47.0 | 8.3 | ..... | E | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 30.37 | 771.4 | 30.42 | 772.6 | 49 | 9.4 | ..... | SW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | J. Mac Gowan. |
| Dover | 30.56 | 776.2 | 30.58 | 776.7 | 45 | 7.2 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Misty..... | J. Costello. |
| Falmouth, Observatory | 30.24 | 768.1 | 30.48 | 774.2 | 47.7 | 8.7 | ..... | ESE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Hazy..... | The Staff. |
| Fort Napier, (Natal) | 27.55 | 699.8 | 29.88 | 758.9 | 69.0 | 20.6 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.64 | 752.8 | 29.87 | 758.7 | 89 | 31.7 | ..... | W ? | ..... | ..... | 0? | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | 30.31 | 769.9 | 50 | 10.0 | ..... | S | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.23 | 767.8 | 30.29 | 769.4 | 58.2 | 14.6 | ..... | E | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 30.19 | 766.8 | 30.40 | 772.1 | 48.2 | 9.0 | ..... | SSW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | D. G. Maclean. |
| Great Yarmouth | 30.60 | 777.2 | 30.61 | 777.5 | 42 | 5.6 | ..... | SSE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Misty..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.40 | 772.1 | 30.58 | 776.7 | 54.6 | 12.6 | ..... | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | The Staff, for G. B. Airy. |
| Guernsey | 30.25 | 768.3 | 30.48 | 774.2 | 50 | 10.0 | ..... | ESE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Dr. S. F. Hoskins, F.R.S. |
| Helston | 30.38 | 771.6 | 30.60 | 774.7 | 53 | 11.7 | ..... | SE | ..... | ..... | 6 | ..... | 1ck | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 30.40 | 772.1 | 30.46 | 773.7 | 51 | 10.6 | ..... | S | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 30.18 | 766.6 | 30.48 | 774.2 | 53.0 | 11.7 | ..... | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | J. Fisher. |
| Kew, Observatory | 30.53 | 775.4 | 30.56 | 776.2 | 54.1 | 12.3 | ..... | SE | 13 | 5.8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | The Meteorological Of. |
| Leicester, Museum | 30.28 | 769.1 | 30.54 | 775.7 | 54.1 | 12.3 | ..... | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Wm. J. Harrison, F.G.S |
| Malta, (Mediterranean) | 30.26 | 768.6 | 30.34 | 770.6 | 58 | 14.4 | ..... | NE | ..... | ..... | 2 | ..... | 4ck | ..... | ..... | ..... | ..... | D. clouds..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 30.17 | 766.3 | 30.27 | 768.8 | 52 | 11.1 | ..... | WSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Clear..... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.18 | 766.6 | 72.0 | 22.2 | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 30.37 | 771.6 | 30.56 | 776.2 | 56.7 | 13.7 | ..... | S | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 30.00 | 762.0 | 30.58 | 776.2 | 54.0 | 12.2 | ..... | S | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Hazy..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.55 | 776.0 | 53 | 11.7 | ..... | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Misty..... | H. E. Bellamy. |
| Plymouth | 30.41 | 772.4 | 30.49 | 774.4 | 53.2 | 11.8 | ..... | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | John Merrifield. |
| Roche's Point | 30.37 | 771.4 | 30.42 | 772.6 | 50 | 10.0 | ..... | SE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ¼ clouded... | W. Kennedy. |
| Saint Ann's Head | 30.30 | 769.6 | 30.47 | 773.9 | 47 | 8.3 | ..... | ESE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | John C. Walker. |
| Sandwick Manse, (Orkneys | ..... | ..... | 30.22 | 767.6 | 48.1 | 8.9 | ..... | SSW | 13 | 5.8 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. Hoskins. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 30.11 | 764.8 | 42.8 | 6.0 | ..... | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | W. H. Lyne. |
| Sheffield | 30.31 | 769.9 | 30.59 | 777.0 | 53.8 | 12.1 | ..... | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | W. F. Cooper. |
| Silloth Rectory | 30.44 | 773.2 | 30.47 | 773.9 | 47.2 | 8.4 | 85 | E | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 30.10 | 764.5 | 30.50 | 774.7 | 50.1 | 10.1 | ..... | S | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Misty..... | Rev. S. J. Perry. |
| Strathfield Turgiss | 30.36 | 771.1 | 30.58 | 776.7 | 53.6 | 12.0 | ..... | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | C.H.Griffith, F.M.S. |
| Thurso | 30.18 | 766.6 | 30.24 | 768.1 | 52 | 11.1 | ..... | S | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | John Trotter. |
| Truro, Royal Institution | 30.38 | 771.6 | 30.43 | 772.9 | 53 | 11.7 | ..... | SE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | W. Newcombe. |
| Valencia, Observatory | 30.33 | 770.4 | 30.36 | 771.1 | 50.5 | 10.3 | ..... | SE | 42 | 18.8 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.00 | 762.0 | 30.04 | 763.0 | 74.8 | 23.8 | 63 | S | 18 | 8.0 | ..... | 0 | 1 | ..... | ..... | 0 | 0 | Fine..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.91 | 759.7 | 58.0 | 14.6 | 88 | NW | ..... | ..... | 2 | ..... | 4k | ..... | ..... | 0.01 | 0.3 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 30.43 | 772.9 | 51.2 | 10.7 | ..... | W | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Fine..... | Andrew Gibb. |
| Mauritius, Observatory | 29.82 | 757.4 | 30.00 | 762.1 | 81.2 | 27.3 | 63 | E | 15.5 | 6.9 | ..... | 6 | 1 | WSW | E | 0.05 | 1.3 | Cloudy..... | C. Meldrum. |
| Melbourne, Observatory | 30.06 | 763.5 | 30.15 | 765.8 | 59.4 | 15.2 | 79 | S | 4 | 1.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Very fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 30.22 | 767.6 | 46 | 7.8 | ..... | SW | ..... | ..... | 4 | 3 | 3 | SW | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.03 | 762.8 | 46 | 7.8 | ..... | W | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day,) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day,) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 35° 54', E. 14° 30' | ..... | ..... | 30.34‡ | 770.6‡ | 59 | 15.0 | ENE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Brig Alliance, N. 10° 27', W. 47° 32' | ..... | ..... | 29.96‡ | 761.0‡ | 80.5 | 26.9 | NE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle Isle, N. 23° 20', W. 33° 55' | ..... | ..... | 30.13 | 765.3 | 74 | 23.3 | ENE | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | 4 | NE | Showery..... | Capt. A. J. Brown. |
| Ship British Commodore, N. 41° 45', W. 43° 16' | ..... | ..... | 30.04 | 763.0 | 52 | 11.1 | SE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | 5 | SE;NW | Overcast..... | Capt. J. W. Thorne. |
| —— City of Agra, N. 1° 26', W. 29° 56' | ..... | ..... | 29.89‡ | 759.2‡ | 79 | 26.1 | WNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | D. clouds..... | Capt. Thos. Young. |
| Barque Commewyne, N. 20° 05' W. 56° 50' | ..... | ..... | 30.10‡ | 764.5‡ | 78 | 25.6 | ENE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | D. clouds..... | Capt. A. Buchan. |
| —— Denbighshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Murdoch. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole, N. 45° 9', W. 12° 58' | ..... | ..... | 30.25‡ | 768.8‡ | 54.8 | 12.7 | SSW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Blue sky..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven, N. 10° 37', E. 59° 12' | ..... | ..... | 29.86‡ | 758.4‡ | 80 | 26.7 | ENE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | D. clouds..... | Capt. C. W. Pearson. |
| S. S. Wyberton, N. 13° 39', E. 55° 30' | ..... | ..... | 29.96‡ | 761.0‡ | 80 | 26.7 | SE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Blue sky..... | Capt. W. R. McMontry. |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected (or instru'm'tal error and temperature. Inches. | Barometer. Corrected (or instru'm'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity Miles per hour. | Wind. Velocity Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.28 | 667.5 | 30.00 | 762.0 | 64.8 | 18.2 | 85 | SE | ..... | ..... | 1 | ..... | 2ks | ..... | NE | 0 | 0 | ..... | Federico Maison. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.35 | 770.9 | 30.40 | 772.1 | 44.2 | 6.8 | 81 | W | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fande | 30.49 | 774.5 | 30.55 | 776.0 | 37.6 | 3.1 | 93 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.58 | 751.2 | 29.62 | 752.3 | 4.5 | —15.3 | 90 | NNE | ..... | ..... | 5 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 29.85 | 758.2 | 29.89 | 759.1 | 46.8 | 8.2 | 77 | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 30.23 | 767.8 | 30.40 | 772.1 | 37.8 | 3.2 | 95 | SW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.95 | 760.7 | 30.50 | 774.7 | 47.1 | 8.4 | 67 | ENE | ..... | ..... | 2 | ..... | 2 | ..... | E | 0 | 0 | Slightlyol'dy | Colligaon, Director. |
| Amiens, Normal School | 30.50 | 774.7 | 30.62 | 777.6 | 54.0 | 12.2 | 86 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear.a | Bonvallet, Director. |
| Avignon, Normal School | 30.46 | 773.6 | 30.54 | 775.6 | 62.6 | 17 | 57 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | M. Giraud, Director. |
| Bar-sur-Seine | 29.96 | 761.1 | 30.53 | 775.4 | 55.8 | 13.2 | 37 | SSE | ..... | ..... | 1 | 2c | ..... | ..... | ..... | 0 | 0 | Slightly cl'dy | O. Saillard, Director. |
| Beauvais, Normal School | 30.29 | 769.4 | 30.58 | 776.8 | 52.3 | 11.3 | 54 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear. | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.68 | 753.9 | 30.60 | 777.3 | 50.5 | 10.3 | 56 | SSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.69 | 754.1 | 30.62 | 777.7 | 50.2 | 10.1 | 74 | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Marlot, Director. |
| Bourges, Normal School | 29.93 | 760.2 | 30.50 | 774.7 | 49.6 | 9.8 | 89 | S | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Waquet, Director. |
| Brest, Naval Observatory | 30.12 | 765.1 | 30.36 | 771.2 | 57.9 | 14.4 | 60 | ESE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0.010 | 0.25 | ..... | M.de Rermaree, Director |
| Carcassonne, Normal School | 30.12 | 765.1 | 30.54 | 775.8 | 56.5 | 13.6 | 62 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | September, Director. |
| Caen, Normal School | 30.42 | 772.6 | 30.50 | 774.6 | 54.0 | 12.2 | 50 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | M. Lair, Director. |
| Chartres, Normal School | 29.92 | 759.9 | 30.50 | 774.6 | 53.6 | 12 | 85 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 30.28 | 769.0 | 30.60 | 777.2 | 55.4 | 13.0 | 66 | SE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 29.08 | 738.6 | 30.43 | 773.0 | 60.8 | 16.0 | 41 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Misty | Alluard, Director. |
| Commercy, Normal School | 29.71 | 754.5 | 30.60 | 777.1 | 47.5 | 8.6 | 63 | E | ..... | ..... | 1 | 1c | ..... | ..... | E | 0 | 0 | Clear | Dr. Coulet, Director. |
| Commune de Gréasque* | 29.43 | 747.4 | 30.57 | 776.4 | 62.1 | 16.7 | 40 | E | ..... | ..... | 2 | ..... | 2 | ..... | E | 0 | 0 | ¼ covered | M. Kins, Director. |
| Grenoble, Normal School | 29.92 | 760.0 | 30.55 | 776.0 | 53.6 | 12 | 72 | ENE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 30.17 | 766.2 | 30.39 | 771.8 | 59.0 | 15.0 | 78 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Mouillot, Director. |
| Le Mans, Normal School | 30.18 | 766.5 | 30.49 | 774.5 | 53.2 | 11.8 | 48 | ESE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.61 | 752.2 | 30.57 | 776.5 | 50.5 | 10.3 | 76 | W | ..... | ..... | 1 | ..... | 1 | ..... | N | 0 | 0 | Clear | Baudry, Director. |
| Lorient, Naval Observatory | 30.29 | 769.4 | 30.39 | 771.9 | 54.7 | 12.6 | 70 | ESE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Mirecourt, Normal School | 29.45 | 748.0 | 30.57 | 776.4 | 46.4 | 8 | 65 | NNW | ..... | ..... | 1 | ..... | kn | ..... | SSE | 0 | 0 | ..... | M. Barbier, Director. |
| Nismes, Normal School | 30.34 | 770.6 | 30.55 | 776.0 | 64.4 | 18 | 53 | S | ..... | ..... | 1 | ..... | 2 | ..... | SE | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 29.46 | 748.3 | 30.54 | 775.6 | 59.0 | 15 | 58 | N | ..... | ..... | 1 | ..... | ..... | N | N | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 25.53 | 648.4 | ..... | ..... | 40.6 | 4.8 | 67 | SSE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.38 | 771.7 | 30.41 | 772.5 | 62.2 | 16.8 | 63 | ESE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear. | Lt. Decante, Director. |
| Rouen, Normal School | 30.46 | 773.8 | 30.55 | 776.0 | 56.8 | 13.8 | 10 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 30.39 | 771.8 | 30.42 | 772.6 | 56.8 | 13.8 | 43 | SSE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 30.36 | 771.2 | 30.53 | 775.4 | 56.8 | 13.8 | 37 | ENE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 29.35 | 745.5 | 30.45 | 773.4 | 53.6 | 12 | 43 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Huguet, Director. |
| Versailles Observatory | 30.02 | 762.5 | 30.51 | 775.0 | 53.8 | 12.1 | ..... | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.84 | 757.9 | 30.57 | 776.5 | 53.6 | 12 | 76 | SW | ..... | ..... | 1 | ..... | 1 | ..... | W | 0 | 0 | Clear | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.92 | 759.9 | 29.94 | 760.6 | 77.0 | 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.31 | 8. | ..... | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 29.90 | 759.4 | 30.53 | 775.5 | 56.1 | 13.4 | 53 | NNE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 25.18 | 639.6 | 30.50 | 774.6 | 45.0 | 7.2 | 67 | SE | 16.8 | 7.5 | ..... | ..... | 2 | ..... | SE | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | 30.56 | 776.1 | 58.3 | 14.6 | 74 | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 30.24 | 768.0 | ..... | ..... | 54.3 | 12.4 | 40 | ENE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Marié Davy, Director. |
| Perpignan | 30.43 | 772.8 | 30.53 | 775.5 | 55.2 | 12.9 | 79 | SE | 9.4 | 4.2 | ..... | ..... | 7 | ..... | SSE | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | 22.77 | 578.3 | ..... | ..... | 30.4 | — 0.9 | ..... | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 29.72 | 755.0 | 30.46 | 773.6 | 56.1 | 13.4 | 70 | SSE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Gen'l de Nansouty. |
| Toulouse, Observatory | 30.26 | 768.6 | 30.46 | 773 6 | 55.4 | 13.0 | 66 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Mercadier Juller. |
| Tours | 30.32 | 770.2 | 30.35 | 770.8 | 45.9 | 7.7 | 82 | ESE | 8.3 | 3.7 | ..... | 10ck | 0 | ..... | ..... | 0.004 | 0.1 | Clear | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.008 | 0.2 | Raining | Marc Dechevrens, S. J. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque on the scale 0 to 4 and Brest on the scale 0 to 10; Mirecourt apparently gives cloud direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.3 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,686.40 m., or 5,204.8 ft.; Pic du Midi, (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.72 | 754.8 | 30.58 | 776.7 | 32.5 | 0.3 | 89 | E | | | 3 | | 3 | NW | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 30.40 | 772.1 | 30.58 | 776.6 | 46.8 | 8.2 | 71 | W | | | 1 | | 3 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.97 | 761.3 | 30.51 | 775.0 | 46.6 | 8.1 | 67 | NW | | | 6 | | 9 | | | Inap. | Inap. | | Royal University Obs'y |
| Carlsruhe | 30.17 | 766.4 | 30.62 | 777.7 | 49.3 | 9.6 | 61 | NE | | | 1 | | 0 | | | 0 | 0 | | Albert Sens. |
| Cassel | 30.02 | 762.5 | 30.64 | 778.2 | 47.1 | 8.4 | 68 | SE | | | 2 | | 0 | | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 30.47 | 774.0 | 30.64 | 778.2 | 51.4 | 10.8 | 48 | N | | | 2 | | 7 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 30.30 | 769.5 | 30.68 | 779.3 | 47.8 | 8.8 | | E | | | 1 | | 5 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 29.13 | 739.8 | 30.55 | 775.9 | 38.5 | 3.6 | 81 | W | | | 4 | | 2 | NE | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 30.54 | 775.7 | 30.62 | 777.6 | 48.6 | 9.2 | 66 | W | | | 5 | | 7cs | | | 0.004 | 0.1 | | Captain F. Hegemann. |
| Kiel | 30.54 | 757.8 | 30.56 | 776.2 | 46.4 | 8.0 | 80 | WSW | | | 4 | | 5 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.25 | 768.4 | 30.34 | 770.6 | 34.7 | 1.5 | 91 | W | | | 2 | | 8 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 30.39 | 771.9 | 39.7 | 4.3 | | W | | | 4 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 30.23 | 767.8 | 30.67 | 779.0 | 43.2 | 6.2 | 74 | WSW | | | 3 | | 2 | | | 0 | 0 | | Prof. Bruhns, Privy Counsellor. |
| Memel, Naval School | 30.25 | 768.5 | 30.30 | 769.7 | 35.6 | 2.0 | 91 | SW | | | 3 | | 10 | | | | | Light fog | Skalweit. |
| Neufahrwasser | 30.36 | 771.2 | 30.38 | 771.6 | 39.6 | 4.2 | 84 | NW | | | 2 | | 10 | | | 0 | 0 | | A. Lothes. |
| Posen | 30.22 | 767.6 | 30.52 | 775.2 | 45.5 | 7.5 | 82 | NW | | | 2 | | 10 | | | 0.012 | 0.3 | Raining | Dr. Magener. |
| Strassburg (in Alsace) | 30.06 | 763.6 | 30.63 | 778.1 | 47.8 | 8.8 | 63 | NE | | | 2 | | 2 | | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 29.64 | 752.9 | 30.59 | 776.9 | 47.3 | 8.5 | 62 | E | | | 1 | | 2 | | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | | | | | | | | | | | | | | | | | | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 29.13 | 739.8 | 30.71 | 780.0 | 40.8 | 4.9 | 65 | Calm | 0 | 0 | | | 1c | | | 0 | 0 | Fair | Dr. Van Bebber. |
| Wustrow, Naval School | 30.50 | 774.6 | 30.52 | 775.1 | 36.1 | 2.3 | 94 | SW | | | 4 | | 8s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.75 | 755.7 | 30.15 | 765.8 | 49.5 | 9.7 | | NE | | | 0.5 | | | | | | | Covered | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 30.04 | 762.9 | 30.09 | 764.2 | 66.0 | 18.9 | 67 | NNW | 17 | 7.6 | | | 7 | | | 0 | 0 | D. clouds | |
| Deesa | 29.45 | 748.0 | 29.92 | 760.0 | 82.0 | 27.8 | 30 | N | 7 | 3.1 | | | 8 | SW | | 0 | 0 | D clouds | |
| Bombay | 29.86 | 758.4 | 29.90 | 759.3 | 78.9 | 26.1 | 79 | NNW | 19 | 8.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.20 | 741.7 | 29.96 | 761.0 | 70.7 | 21.5 | 42 | Calm | 1.5 | 0.7 | | | 10 | | | 0 | 0 | Cloudy | |
| Belgaum | 27.36 | 694.9 | 29.84 | 758.0 | 87.1 | 30.6 | 49 | W | 9.0 | 4.0 | | | 6 | | SSE | 0 | 0 | D. clouds | |
| Roorkee | 29.99 | 736.2 | 29.90 | 759.4 | 71.8 | 22.1 | 34 | SW | 1.8 | 0.8 | | | 7 | | | 0 | 0 | | |
| Agra | 29.36 | 745.9 | 29.93 | 760.2 | 81.7 | 27.6 | 33 | W | | | | | 7 | | W | 0 | 0 | | |
| Nagpur | 28.83 | 732.2 | 29.85 | 758.2 | 90 | 32.2 | 33 | Calm | 1.6 | 0.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.51 | 749.6 | 29.89 | 759.1 | 82.3 | 27.9 | 22 | N | 1.0 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.57 | 751.0 | 29.88 | 758.9 | 85.1 | 29.5 | 29 | NW | 2.1 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.67 | 753.6 | 29.85 | 758.3 | 82.3 | 27.9 | 24 | W | 1.2 | 0.5 | | | 4 | W | W | 0 | 0 | D. clouds | |
| Hazaribagh | 27.86 | 707.7 | 29.87 | 758.6 | 80.8 | 27.1 | 16 | NW | 6.2 | 2.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.81 | 757.3 | 29.90 | 759.3 | 84.8 | 29.3 | 61 | S | 4.3 | 1.9 | | | | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.86 | 758.3 | 29.88 | 758.9 | 80.6 | 27.0 | 73 | SSW | 4.0 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.48 | 748.9 | 29.87 | 758.8 | 77.7 | 25.4 | 22 | WNW | 3.0 | 1.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.86 | 758.2 | 29.94 | 760.5 | 76.8 | 24.9 | 77 | WSW | 5.5 | 2.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Sibsagar | 29.58 | 751.3 | 29.92 | 760.0 | 71.4 | 21.9 | 60 | NE | 2.0 | 0.9 | | | 8 | WSW | WSW | 0 | 0 | D clouds | |
| Jubbulpore | 28.49 | 723.7 | 29.84 | 757.8 | 88.8 | 31.6 | 21 | Calm | 3.5 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 30.14 | 765.6 | 30.56 | 776 3 | 52.7 | 11.5 | 48 | SW | 1.3 | 0.6 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 30.02 | 762.4 | 30.56 | 776.1 | 54.3 | 12.4 | 50 | E | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 30.47 | 773.9 | 30.58 | 776.8 | 51.8 | 11.0 | 63 | SW | 0.7 | 0.3 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 29.63 | 752.6 | 30.56 | 776.3 | 51.6 | 10.9 | 64 | SSE | 3.8 | 1.7 | ..... | ..... | 2 | ESE | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 30.37 | 771.4 | 30.57 | 776.4 | 57.0 | 13.9 | 70 | SW | 1.3 | 0.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 28.58 | 725.8 | 30.54 | 775.7 | 48.0 | 8.9 | 67 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 30.52 | 775.2 | 30.57 | 776.5 | 49.6 | 9.8 | 76 | WNW | 8.7 | 3.9 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 30.29 | 769.3 | 30.55 | 776.0 | 55.9 | 13.3 | 32 | WSW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Cav. F Meucci |
| Leghorn | 30.46 | 773.6 | 30.54 | 775.8 | 58.8 | 14.9 | 33 | N | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 30.29 | 769.3 | 30.47 | 773.9 | 59.7 | 15.4 | 25 | N | 7.8 | 4.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 30.10 | 764.6 | 30.36 | 771.2 | 51.8 | 11.0 | 39 | NE | 31.1 | 13.9 | ..... | ..... | 8 | N | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.48 | 748.7 | 30.38 | 771.7 | 52.2 | 11.2 | 73 | NNW | 8.7 | 3.9 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 30.28 | 767.9 | 30.43 | 772.9 | 55.9 | 13.3 | 65 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 30.17 | 766.2 | 30.43 | 772.8 | 54.1 | 12.3 | 47 | NE | 12.5 | 5.6 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 30.26 | 768.6 | 30.33 | 770.4 | 55.8 | 13.2 | 58 | N | 12.5 | 5.6 | ..... | ..... | 4 | NNE | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.90 | 759.5 | 30.46 | 773.6 | 54.7 | 12.6 | 40 | NE | 6.3 | 2.8 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.41 | 772.4 | 30.43 | 772.9 | 36.3 | 2.4 | 76 | N | 1.4 | 0.6 | ..... | ..... | 7cajck | W | ..... | 0 | 0 | Fair | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 30.23 | 767.8 | 30.45 | 773.4 | 38.2 | 3.4 | 74 | NNE | 3.5 | 1.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Fair | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 30.15 | 765.8 | 30.22 | 767.6 | 37.3 | 2.9 | 69 | NNW | 2.5 | 1.1 | ..... | ..... | 1ck | ..... | ..... | 0 | 0 | Clear | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | | | | | | | | | | | | | | | | | | | P. Ceballos. |
| Guadalajara | 25.08 | 637.0 | 30.15 | 766.7 | 49.1 | 9.5 | 46 | SW | ..... | ..... | 1 | 4 | 0 | NW | ..... | 0 | 0 | ½ clouded | Prof. L. Perez. |
| Leon | 24.44 | 620.8 | 30.05 | 763.3 | 56.7 | 13.7 | 78 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | Prof. M. Leal |
| Mexico, Central Obs'y | 23.08 | 586.1 | 30.24 | 768.1 | 44.6 | 7.0 | 53 | Calm | 0 | 0 | ..... | 0 | 1s | ..... | ..... | 0 | 0 | Fine | The Staff. |
| Pabellon, (Aguascallentes) | | | | | 53.4 | 11.9 | 81 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | M. V. de Leon, M. E. |
| Tlacotalpam | 30.10 | 764.4 | 30.11 | 764.7 | 69.3 | 20.7 | 90 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | M. M. Chazaro. |
| San Luis Potosi | 24.19 | 613.6 | 30.14 | 765.6 | 47.0 | 8.3 | 32 | ESE | ..... | ..... | 1 | 3 | 0 | W | ..... | 0 | 0 | Hazy | G. Barreda, M. D. |
| Vera-Cruz | | | | | | | | | | | | | | | | | | | Prof. J. Rossell. |
| Zacatecas | | | | | | | | | | | | | | | | | | | |
| Puebla, (Catholic Institute) | 23.39 | 594.0 | 30.15 | 765.8 | 39.2 | 4.0 | 67 | WNW | 1.3 | 0.6 | ..... | ..... | 1 | ..... | Calm | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | | | | | | | | | | | | | | | | | | | M. V. de Leon, C. E. |
| Colima | 28.41 | 721.6 | 30.06 | 763.4 | 75.7 | 24.3 | 76 | Calm | ..... | ..... | 0 | 0 | 3 | ..... | W | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | | | | | | | | | | | | | | | | | | | Antonio Guerra y Guerra. |

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1893 m., or 6210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2201m., or 7220.9 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 532 m., or 1745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | | | | | | | | | | | | | | | | | | | |
| Groningen | 30.65 | 778.6 | 30.65 | 778.6 | 47.5 | 8.6 | ..... | ESE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.016 | 0.4 | ..... | |
| Helder | 30.59 | 776.9 | 30.64 | 778.3 | 45.9 | 7.7 | ..... | SW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.004 | 0.1 | ..... | |
| Hellevoetsluis | 30.63 | 777.9 | 30.63 | 777.9 | 43.3 | 6.8 | ..... | SW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Utrecht | 30.64 | 778.3 | 30.64 | 778.3 | 47.8 | 8.8 | 69 | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | 30.61 | 777.4 | 30.65 | 778.6 | 50.4 | 10.2 | 67 | WSW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | Slightly cl'dy | H. v. d. Brink. |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.21 | 767.4 | 30.27 | 768.8 | 45.0 | 7.2 | 86 | SW | 14.1 | 6.3 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.69 | 754.0 | 29.72 | 755.0 | 34.5 | 1.4 | 82 | WSW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Rain & snow | |
| Christiania | 29.94 | 760.4 | 30.09 | 764.2 | 42.4 | 5.8 | 61 | Calm | 0 | 0 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | Light fog..... | |
| Tromsö | 29.43 | 747.6 | 29.48 | 748.7 | 26.6 | — 3.0 | 68 | SW | 34 | 15 | ..... | ..... | 7 | ..... | ..... | 0.083 | 2.1 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.99 | 761.7 | 30.18 | 766.6 | 61.3 | 16.3 | 92 | SSW | 3.1 | 1.4 | ..... | ..... | 8 | ..... | ..... | 0.079 | 2.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.28 | 743.8 | 30.30 | 769.6 | 66.4 | 19.1 | 40 | ESE | 6.9 | 3.1 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.25 | 768.3 | 30.34 | 770.5 | 62.2 | 16.8 | 57 | SE | 3.8 | 1.7 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.98 | 761.5 | 30.34 | 770.6 | 60.8 | 16.0 | 61 | NE | 2.5 | 1.1 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.18 | 766.5 | 30.25 | 768.3 | 64.4 | 18.0 | 84 | S | 11.2 | 5.0 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h 6 m., p. m.

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa Com'd.t. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Comd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | ..... | ..... | 29.94 | 760.5 | 82.8 | 28.2 | ..... | SSW | ..... | ..... | 2 | ..... | 4 | ..... | SSW | 2 | S | D. clouds..... | A. J. de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. T. d'Oliveria, Com'd't |
| Rio Lima, Capt. S. C. da SilvaCosta, Porto Praya, Cape Verd Islands. | ..... | ..... | 30.08 | 763.9 | 75.2 | 24.0 | ..... | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 2 | NE | Blue sky ..... | A. Ferreira, 2nd Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | 29.78 | 756.3 | 86.9 | 30.5 | ..... | WNW | ..... | ..... | 1 | ..... | 10 | ..... | W | ..... | ..... | D. clouds..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 30.21 | 767.2 | 55.0 | 12.8 | ..... | N | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 1 | ..... | D. Clouds ... | J. M. T. Guimarães, Com'd't. |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.97 | 761.1 | 30.41 | 772.4 | 37.8 | 3.2 | 70 | NW | 9 | 4 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.87 | 758.6 | 30.31 | 769.8 | 35.6 | 2.0 | 49 | NW | 4 | 2 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.92 | 760.0 | 30.18 | 766.5 | 29.8 | — 1.2 | 74 | SW | 4 | 2 | ..... | ..... | 2ck | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.08 | 764.0 | 30.10 | 764.4 | 29.5 | — 1.4 | 78 | NW | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.49 | 749.1 | 30.15 | 765.9 | 36.7 | 2.6 | 75 | NE | 7 | 3 | ..... | ..... | 10ks;n | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 30.08 | 764.1 | 30.15 | 765.9 | 39.9 | 4.4 | 74 | NNE | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.06 | 763.4 | 30.08 | 763.9 | 39.9 | 4.4 | 79 | N | 7 | 3 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.57 | 751.0 | 30.14 | 765.5 | 35.6 | 2.0 | 78 | NW | 4 | 2 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.82 | 757.3 | 30.02 | 762.6 | 37.8 | 3.2 | 56 | N | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.98 | 761.6 | 30.00 | 762.1 | 25.5 | — 3.6 | 76 | NE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.45 | 722.7 | 29.85 | 758.3 | 57.4 | 14.1 | 44 | SE | 4 | 2 | ..... | ..... | 6k | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.01 | 762.3 | 29.93 | 760.2 | 54.0 | 12.2 | 35 | NE | 7 | 3 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | Light clouds | Capt. Wisganow. |
| Krotkowo* | 29.65 | 753.1 | 30.15 | 765.9 | 23.0 | — 5.0 | 63 | NE | 16 | 7 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.85 | 758.2 | 30.14 | 765.5 | 20.7 | — 6.3 | 96 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.01 | 736.9 | 29.99 | 761.8 | 39.0 | 3.9 | 45 | W | 4 | 2 | ..... | ..... | 7c;ck | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Nukuss | 29.52 | 749.9 | 29.76 | 755.8 | 59.4 | 15.2 | 4 | NNE | 7 | 3 | ..... | ..... | 8cs | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.17 | 715 4 | 29.82 | 757.3 | 67.6 | 19.8 | 27 | NW | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.74 | 755.4 | 30.25 | 769.0 | 23.5 | — 4.7 | 49 | NE | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.09 | 764.3 | 30.40 | 772.2 | 24.3 | — 4.3 | 65 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 30.28 | 769.0 | 30.42 | 772.6 | 35.6 | 2.0 | 21 | NW | 16 | 7 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend 455? m., or 1,492.7? ft., Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.36 | 771.1 | 30.46 | 773.8 | 55.8 | 13.2 | 64 | ENE | 5.4 | 2.42 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Almost cov'd | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 30.25 | 768.4 | 30.31 | 769.8 | 72.0 | 22.2 | 43 | SE | 3.1 | 1.39 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.36 | 695.0 | ..... | ..... | 58.3 | 14.6 | 70 | N | 3.5 | 1.56 | ..... | 1 | 0 | S | ..... | 0 | 0 | Almost clear | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 28.11 | 713.9 | ..... | ..... | 61.9 | 16.6 | 43 | E | 6.7 | 3.00 | ..... | 1 | 0 | SE | ..... | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 30.26 | 768.6 | 30.41 | 772 4 | 64.8 | 18.2 | 68 | ESE | 4.9 | 2.19 | ..... | 3 | 5 | ENE | ..... | 0 | 0 | Cloudy..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.41 | 746.9 | 30.32 | 770.2 | 50.2 | 10.1 | 88 | SW | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.012 | 0.3 | Raining..... | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.07 | 763.8 | 30.14 | 765.5 | 67.6 | 19.8 | 81 | E | 3.8 | 1.7 | ..... | 2ck;cs | 1k | E | ..... | Inap. | Inap. | Fair..... | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.95 | 760.7 | 30.00 | 762.1 | 80.0 | 26.6 | 71 | NNE | 3.8 | 1.7 | ..... | kn | km | E | E | 0 | 0 | Covered..... | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.21 | 767.4 | 30.31 | 770.0 | 63.3 | 17.4 | 54 | ESE | 22.0 | 9.8 | ..... | 0 | 2 | ..... | E | 0 | 0 | ..... | Capt. C. Pujazon, R. N. Dir. |
| San Juan de Porto Rico, W.I. | 29.95 | 760.6 | 30.04 | 762.9 | 72.3 | 22.4 | 75 | Calm | 0 | 0 | ..... | 5kn | 4kn | E | E | 0.345 | 8.75 | Cloudy..... | Leonardo de Tejeda, Ch'f. Eng'r. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.78 | 756.3 | 29.82 | 757.3 | 21 6 | — 5.8 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.236 | 6.0 | Snowing..... | |
| Umea | 29.75 | 755.7 | 29.80 | 757.0 | 28.8 | — 1.8 | 96 | SW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.024 | 0.6 | ..... | |
| Hernosand | 29.79 | 756.7 | 29.84 | 758.0 | 38.3 | 3.5 | 98 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.82 | 757.3 | 29.99 | 761.8 | 43.2 | 6.2 | 78 | WSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 30.02 | 762.4 | 30.08 | 763.9 | 40.6 | 4.8 | 74 | WSW | ..... | ..... | 6 | ..... | 3 | ..... | ..... | 0.028 | 0.7 | ..... | |
| Sub-Series. Upsala | 29.89 | 759.2 | 29.97 | 761.1 | 40.8 | 4.9 | 68 | WSW | 16.1 | 7.2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 29.14 | 740.1 | 30.60 | 777.2 | 42.8 | 6.0 | 71 | N | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | Cloudy. ..... | The Observatory. |
| Zurich | 28.93 | 734.8 | 30.62 | 777.6 | 39.9 | 4.4 | 80 | S | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | Fair ..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +15.0 mm.; Thermometer, —0.6 cent.; Relative Humidity, +8 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.15 | 765.8 | 43.2 | 6.2 | 81 | N | 22 | 10.0 | ..... | ..... | 10 | ..... | N | 0.236 | 6.0 | ..... ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.01 | 762.3 | 61.9 | 16.6 | ..... | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | |
| Valona | ..... | ..... | 30.24 | 768.2 | 51.3 | 10.7 | ..... | NW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | A. Bertrand. |
| Sub-Series. Beirut, (Syria,) Lee Obs'y | 29.69 | 754.1 | 29.80 | 757.0 | 53.8 | 12.1 | 91 | E | ..... | ..... | 1 | ..... | 10n | ..... | SW | 0.37 | 9.4 | Raining..... | Prof. C. V. A. Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.25 | 768.3 | 30.32 | 770.1 | 5.5 | —14.7 | 51 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. .. ..... | Hon. J. Fergusor. |
| Brockville, Ontario | 30.10 | 764.5 | 30.44 | 773.2 | 8 | —13.3 | ..... | Calm | 0 | 0 | ..... | ..... | 8s | ..... | NE | 0.01 | 0.3 | Cloudy.. ..... | W. R. Bigg. |
| *Chatham, N B | 30.22 | 767.6 | 30.29 | 769.4 | 11 | —11.7 | 72 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear..... | G. A. Blair. |
| Charlottetown, P. E. Island | 30.03 | 762.8 | 30.08 | 764.0 | 15 | — 9.4 | 88 | N | 26 | 11.6 | ..... | ..... | 10s | ..... | Calm | 0.100 | 2.54 | Cloudy..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 30.20 | 767.1 | 30.42 | 772.6 | 0.8 | —17.3 | 100 | NW | ..... | ..... | 1 | 0 | 4s | ..... | ..... | 0 | 0 | Fine..... | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 29.42 | 747.2 | 29.47 | 748.5 | 33.1 | 0.6 | 88 | Calm | ..... | ..... | ..... | 6ck | 0 | ..... | ..... | 0.20 | 5.1 | Fair..... | W. H. Bevis. |
| *Father Point, Quebec | 30.39 | 771.9 | 30.41 | 772.4 | 1 | —17.2 | 100 | S | 2 | 0.9 | ..... | 5cs | 0 | Calm | ..... | 0.01 | 0.3 | Fair ..... | J. McWilliams. |
| Fredericton, N. B | 30.23 | 767.8 | 30.30 | 769.6 | 13.0 | —10.6 | 82 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Prof. Harrison. |
| *Fort Garry Manitoba | 29.98 | 756.1 | 29.85 | 758.2 | 20 | — 6.7 | 94 | S | 4 | 1.8 | ..... | 5k | 5ks | SW | SW | 0 | 0 | Fair ..... | James Stewart. |
| Granton, Ontario | 29.99 | 756.3 | 30.14 | 765.5 | 30 | — 1.1 | ..... | SE | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0.06 | 1.5 | Cloudy..... | James Grant. |
| *Halifax, N. S | 29.79 | 756.7 | 29.93 | 760 2 | 15 | — 9.4 | 89 | N | 25 | 11.2 | ..... | ..... | 10n | ..... | NW | 0.48 | 12.2 | Cloudy . .... | F. Allison, M. A. |
| Hamilton, Ontario | 29.88 | 758.9 | 30.27 | 768.8 | 30.5 | — 0.8 | 86 | NE | ..... | ..... | 1 | 10cs | 0 | NE | ..... | 0 | 0 | Overcast .... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 30.02 | 762.5 | 30.38 | 771.6 | 15 | — 9.4 | 81 | NE | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy ..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.80 | 756.9 | 29.84 | 757.9 | 20.4 | — 6.4 | 92 | NE | 20 | 8.9 | ..... | ..... | 10n | ..... | ..... | 0.80 | 20.3 | Snowing..... | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 30.22 | 767.6 | 30.44 | 773.2 | 11 | —11.7 | 80 | E | 6 | 2.7 | ..... | 8k | 0 | NW | ..... | 0 | 0 | Cloudy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.60 | 749.3 | 30.24 | 768.1 | 24 | — 4.4 | 94 | SE | 24 | 10.7 | ..... | ..... | 10n | ..... | SE | 0 | 0 | Cloudy..... | Rev. R. Mosley. |
| Peterboro, Ontario | 29.54 | 750.3 | 30.34 | 770.6 | 22.0 | — 5.6 | 61 | E | ..... | ..... | ..... | 0 | 5ks | ..... | ..... | 0 | 0 | Fine..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.49 | 749.0 | 30.22 | 767.6 | 30 | — 1.1 | 100 | E | 4 | 1.8 | ..... | ..... | 10ks | ..... | SW | 0.05 | 1.3 | Threatening | H. Morgan. |
| Port Hastings, N. S | 29.88 | 758.9 | 29.94 | 760.5 | 17.7 | — 7.9 | ..... | SE | 7 | 3.1 | ..... | ..... | ..... | ..... | ..... | 0.20 | 5.1 | Snowing..... | Peter Grant. |
| Port Stanley, Ontario | 29.48 | 748.8 | 30.16 | 766.1 | 32 | 0.0 | 89 | E | 19 | 8.5 | ..... | 5ck | 5n | SW | SW | 0.11 | 2.8 | Cloudy..... | M. Payne. |
| *Quebec, Quebec | 30.11 | 764.8 | 30.47 | 773.9 | 4 | —15.6 | 74 | Calm | ..... | ..... | 0 | ..... | Fog | ..... | ..... | 0.20 | 5.1 | Foggy ..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.84 | 757.9 | 30.33 | 770.4 | 18 | — 7.8 | 84 | SE | 10 | 4.5 | ..... | ..... | 8s | ..... | NW | 0 | 0 | Cloudy..... | W. H. McIntyre. |
| St. Andrews, N. B | 30.18 | 766.6 | 30.23 | 767.8 | 14 | —10.0 | 53 | N | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear..... | Dr. Gove. |
| St. John, N. B | 30.08 | 762.8 | 30.21 | 767.3 | 12 | —11.1 | 91 | N | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.36 | 745 7 | 30.11 | 764.8 | 30 | — 1.1 | 95 | SE | 25 | 11.2 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Cloudy..... | K. Stewart. |
| Stayner, Ontario | 29.37 | 746 0 | 30.19 | 766.8 | 28 | — 2.2 | 89 | SE | 15 | 6.7 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Cloudy..... | R. J. Cole. |
| Stratford, Ontario | 29.84 | 732.5 | 30.19 | 766.8 | 27.3 | — 2.6 | 88 | SE | 14.0 | 6.3 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Overcast..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.79 | 756.7 | 29.83 | 757.7 | 22 | — 5.6 | 92 | NE | 26 | 11.6 | ..... | ..... | 10n | ..... | ..... | 0.30 | 7.6 | Light snow. | T. C. Hill. |
| *Toronto, Ontario | 29.86 | 758.4 | 30.27 | 768.8 | 30 | — 1.1 | 86 | E | 18 | 8.0 | ..... | ..... | 10ks | ..... | N | Inap. | Inap. | Threatening | Magnetic Observatory. |
| Windsor, N. S | 29.94 | 760.5 | 30.04 | 763.0 | 14.5 | — 9.7 | 91 | NE | 30 | 13.4 | ..... | 10k | 0 | ..... | ..... | 0.50 | 12.7 | Overcast.... | Prof. John E. Oram. |
| Sub-Series. St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 24.0 | — 4.4 | 100 | NE | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.10 | 2.5 | Stormy..... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters, Stratford, 1,182 ft., or 360.3 meters.

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 30.21 | 767.3 | 30.47 | 773.9 | 12 | —11.1 | 80 | N | 2 | 0.9 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Alpena, Michigan | 29.36 | 745.7 | 30.04 | 763.0 | 25 | — 3.9 | 87 | SE | 17 | 7.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Atlanta, Georgia | 29.04 | 737.6 | 30.18 | 766.6 | 58 | 14.4 | 58 | W | 7 | 3.1 | ..... | ..... | Fg;sm' | ..... | Calm | 0 | 0 | Foggy | |
| Atlantic City, New Jersey | 30.43 | 772.9 | 30.44 | 773.2 | 28 | — 2.2 | 54 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Augusta, Georgia | 30.06 | 763.5 | 30.24 | 768.1 | 51 | 10.6 | 79 | NW | 4 | 1.8 | ..... | 0 | Fg;sm' | ..... | Calm | 0 | 0 | Foggy | |
| Baltimore, Maryland | 30.40 | 772.1 | 30.45 | 773.4 | 33 | 0.6 | 61 | NE | 5 | 2.2 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Smoky | |
| Barnegat, New Jersey | 30.41 | 772.4 | 30.43 | 772.9 | 29 | — 1.7 | 67 | NE | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 27.90 | 708.6 | 29.76 | 755.9 | 25 | — 3.9 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Boerne, Texas | 28 51 | 723.9 | 29.80 | 756.9 | 61 | 16.1 | 88 | SE | ..... | ..... | 2 | 5k | 5ks | S | S | 0 | 0 | Cloudy | |
| Boise City, Idaho | 26.89 | 683.0 | 29.85 | 758.2 | 34 | 1.1 | 79 | SE | 3 | 1.3 | ..... | ..... | 10s | ..... | SW | 0.02 | 0.5 | Cloudy | |
| Boston, Massachusetts | 30.23 | 767.8 | 30.40 | 772.1 | 18 | — 7.8 | 68 | N | 7 | 3.1 | ..... | 8c | 0 | N | ..... | 0 | 0 | Fair | |
| Brackettville, Texas | 28.82 | 732.0 | 29.63 | 757.7 | 65 | 18.3 | 73 | SE | 9 | 4.0 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 28.76 | 730.5 | 29.77 | 756.1 | 31 | — 0.6 | 94 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.95 | 760.7 | 29.99 | 761.7 | 70 | 21.1 | 70 | SE | 8 | 3.6 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Buffalo, New York | 29.50 | 749.3 | 30.23 | 767.8 | 32 | 0.0 | 79 | NE | 5 | 2.2 | ..... | ..... | 9n | ..... | W | Inap. | Inap. | Light rain | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 20 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 30.14 | 765.5 | 30.47 | 773.9 | 11.5 | —11.4 | 71 | E | 2 | 0.9 | ..... | 2ks | Haze | NW | Calm | 0 | 0 | Fair | |
| Cairo, Illinois | 29.69 | 754.1 | 30.08 | 764.0 | 62 | 16.7 | 72 | S | 9 | 4.0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.14 | 638.5 | 29.94 | 760.5 | 40 | 4.4 | 31 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 44 | 6.7 | 45 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.52 | 699.0 | 30.09 | 764.3 | 43 | 6.1 | 100 | SW | 10 | 4.5 | ..... | ..... | 10n | ..... | SW | 0.47 | 11.9 | Light rain | |
| Cape Hatteras, N. Carolina | 30.36 | 771.1 | 30.37 | 771.4 | 42 | 5.6 | 83 | NE | 18 | 8.0 | ..... | 5ck | Haze | W | ..... | 0 | 0 | Fair | |
| Cape Henry, Virginia | 30.36 | 771.1 | 30.38 | 771.6 | 38 | 3.3 | 56 | NE | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.32 | 770.1 | 30.34 | 770.6 | 45 | 7.2 | 68 | NE | 24 | 10.7 | ..... | 10ck | 0 | W | ..... | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 30.39 | 771.9 | 30.42 | 772 6 | 30 | — 1.1 | 68 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Castroville, Texas | 29.18 | 741.2 | 29.86 | 758.9 | 64 | 17.8 | 83 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 30.21 | 767.3 | 30.26 | 768.6 | 54 | 12.2 | 73 | E | 4 | 1.8 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 23.72 | 602.5 | 29.66 | 753.4 | 29 | — 1.7 | 67 | W | 4 | 1.8 | ..... | 0 | 5ks | ..... | W | 0 | 0 | Fair | |
| Chicago, Illinois | 29.15 | 740.4 | 29.83 | 757.7 | 53 | 11.7 | 73 | SW | 12 | 5.4 | ..... | 0 | 5ks | ..... | SW | 0 | 0 | Fair | |
| Cincinnati, Ohio | 29.47 | 748.5 | 30.12 | 765.0 | 48 | 8.9 | 70 | SE | 2 | 0.9 | ..... | 5k | 0 | W | ..... | Inap. | Inap. | Fair | |
| Cleveland, Ohio | 29.35 | 745.5 | 30.09 | 764.3 | 38 | 3.3 | 72 | SE | 22 | 9.8 | ..... | ..... | 10ks | ..... | SW | 0.33 | 8.4 | Cloudy | |
| Coleman City, Texas | 28.13 | 714.5 | 29.75 | 755.6 | 62 | 16.7 | 77 | S | 14 | 6.3 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Columbus, Ohio | 29.24 | 742.7 | 30.09 | 764.3 | 46 | 7.8 | 54 | SE | 5 | 2.2 | ..... | 2ck | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Concho, Texas | 28.10 | 713.7 | 29.72 | 754.9 | 62 | 16.7 | 61 | S | 8 | 3.6 | ..... | 10k | 0 | S | ..... | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.53 | 750.0 | 30.00 | 762 0 | 62 | 16.7 | 83 | SE | 13 | 5.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.18 | 741.2 | 29.80 | 756.9 | 55 | 12.8 | 87 | S | 6 | 2.7 | ..... | 0 | 5s | ..... | W | 0 | 0 | Fair | |
| Deadwood, Dakota | 25.02 | 635.5 | ..... | ..... | 30 | — 1.1 | 89 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Decatur, Texas | 28.75 | 730.2 | 29.89 | 759.2 | 65 | 18.3 | 97 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Denison, Texas | 29.15 | 740.4 | 29.93 | 760.2 | 62 | 16.7 | 83 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.44 | 620.8 | 29.66 | 753.4 | 32 | 0.0 | 79 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Des Moines, Iowa | 28.80 | 731.5 | 29.64 | 752.8 | 57 | 13.9 | 81 | SW | 4 | 1.8 | ..... | 0 | 8ks | ..... | W | 0 | 0 | Cloudy | |
| Detroit, Michigan | 29.35 | 745.5 | 30.04 | 763.0 | 36 | 2.2 | 71 | SE | 8 | 3.6 | ..... | 8ck | 0 | NW | ..... | 0.16 | 4.1 | Fair | |
| Dodge City, Kansas | 27.07 | 687.6 | 29.28 | 743.7 | 51 | 10.6 | 79 | SW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.12 | 3.0 | Clear | |
| Dubuque, Iowa | 29.06 | 738.1 | 29.74 | 755.4 | 58 | 11.7 | 80 | S | 6 | 2.7 | ..... | 8k | Fog | S | Calm | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 29.14 | 740.1 | 29.82 | 757.4 | 36 | 2.2 | 90 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Eagle Pass, Texas | 29.11 | 739.4 | 29.83 | 757.7 | 67 | 19.4 | 79 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Eastport, Maine | 30.16 | 766.1 | 30.23 | 767.8 | 17 | — 8.3 | 67 | N | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 67 | 19.4 | 84 | SE | ..... | ..... | 6 | 8cs | 2s | S | Calm | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.16 | 666.4 | ..... | ..... | 49 | 9.4 | 24 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.43 | 747.5 | 30.17 | 766.3 | 28 | 3.3 | 72 | SE | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.21 | 741.9 | 29.88 | 758.9 | 35 | 1.7 | 80 | E | 3 | 1.3 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Florence, Arizona | 28.53 | 724.6 | 30.13 | 765.3 | 43 | 6.1 | 59 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.65 | 702.3 | ..... | ..... | 23 | — 5.0 | 73 | E | 7 | 3.1 | ..... | 10cs | 0 | Calm | ..... | 0.01 | 0.3 | Cloudy | |
| Fort Craig, New Mexico | 25.37 | 644.4 | 29.44 | 747.8 | 39 | 3.9 | 39 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.10 | 637.5 | 30.06 | 763.5 | 52 | 11.1 | 32 | S | 2 | 0.9 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.39 | 746.5 | 29.92 | 760.0 | 61 | 16.1 | 77 | S | 15 | 6.7 | ..... | 2k | 0 | SW | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.57 | 725.7 | 29.80 | 756.9 | 64 | 17.8 | 73 | Calm | 0 | 0 | ..... | 0 | 5ks | ..... | SW | 0 | 0 | Fair | |
| Fort Keogh, Montana | 27.08 | 687.8 | ..... | ..... | 31 | — 0.6 | 89 | Calm | 0 | 0 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Fair | |
| Fort McKavett, Texas | 27.67 | 702.8 | 29.54 | 750.3 | 62 | 16.7 | 72 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.65 | 727.7 | 29.73 | 755.1 | 60 | 15.6 | 77 | S | 20 | 8.9 | ..... | 0 | 8ks | ..... | S | 0 | 0 | Cloudy | |
| Fort Stevenson, Dakota | 27.91 | 708.9 | ..... | ..... | 21 | — 6.1 | 85 | SE | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fredericksburg, Texas | 28.21 | 716.5 | 29.73 | 755.1 | 64 | 17.8 | 78 | S | 10 | 4.5 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 30.05 | 763.3 | 30.09 | 764.3 | 64 | 17.8 | 94 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Graham, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Grand Haven, Michigan | 29.22 | 742.2 | 29.88 | 758.9 | 40 | 4.4 | 73 | SE | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.23 | 742.4 | 30.00 | 762.0 | 52 | 11.1 | 79 | SE | 4 | 1.8 | ..... | 5c | 2s | W | Calm | 0 | 0 | Fair | |
| Indianola, Texas | 30.03 | 762.8 | 30.05 | 763.3 | 64 | 17.8 | 89 | S | 10 | 4.5 | ..... | 1c | 0 | W | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.54 | 732.5 | 29.96 | 761.0 | 60 | 15.6 | 55 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Jacksonville, Florida | 30.23 | 767.8 | 30.25 | 768.3 | 54 | 12.2 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.16 | 740.7 | 29.76 | 755.9 | 59 | 15.0 | 76 | SW | 12 | 5.4 | ..... | 1c | 0 | W | ..... | 0 | 0 | Clear | |
| Key West, Florida | 30.14 | 765.5 | 30.17 | 766.3 | 69 | 20.6 | 80 | NE | 13 | 5.8 | ..... | 0 | 2ks | ..... | E | 0 | 0 | Clear | |
| Kittyhawk North Carolina | 30.36 | 771.1 | 30.38 | 771.6 | 40 | 4.4 | 82 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.22 | 742.2 | 30.24 | 768.1 | 47 | 8.3 | 85 | SW | 1 | 0.4 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Foggy | |
| La Crosse, Wisconsin | 29.00 | 736.6 | 29.74 | 755.4 | 37 | 2.8 | 81 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 26.10 | 662.9 | 30.25 | 768.3 | 45 | 7.2 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.38 | 746.2 | 29.71 | 754.6 | 69 | 20.6 | 75 | SE | 12 | 5.4 | ..... | 10ck | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 28.87 | 733.3 | 29.67 | 753.6 | 63 | 17.2 | 67 | S | 20 | 8.9 | ..... | 0 | 5ks | ..... | SW | 0 | 0 | Fair | |
| Los Angeles, California | 29.77 | 756.1 | 30.11 | 764.8 | 49.0 | 9.4 | 82 | Calm | 0 | 0 | ..... | 2k | 0 | Calm | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.53 | 750.0 | 30.09 | 764.3 | 57 | 13.9 | 69 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.66 | 753.4 | 30.36 | 771.1 | 48 | 8.9 | 56 | Calm | 0 | 0 | ..... | 0 | 5ks | ..... | Calm | 0 | 0 | Fair | |
| Madison, Wisconsin | 28.76 | 730.5 | 29.74 | 755.4 | 44 | 6.7 | 87 | S | 6 | 2.7 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Marquette, Michigan | 29.16 | 740.7 | 29.88 | 758.9 | 37 | 2.8 | 71 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Mason, Texas | 28.31 | 719.1 | 30.02 | 762.5 | 65 | 18.3 | 74 | SE | 17 | 7.6 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.80 | 756.9 | 30.12 | 765.0 | 59 | 15.0 | 70 | S | 4 | 1.8 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.05 | 737.9 | 29.78 | 756.4 | 41 | 5.0 | 82 | E | 5 | 2.2 | ..... | 0 | 2ks | ..... | Calm | Inap. | Inap. | Fair | |
| Mobile, Alabama | 30.18 | 766.6 | 30.23 | 767.8 | 54 | 12.2 | 100 | S | 2 | 0.9 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Dense fog | |
| Montgomery, Alabama | 30.02 | 762.5 | 30.26 | 768.6 | 50 | 10.0 | 86 | SW | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Morgantown, West Virginia | 29.08 | 738.6 | 30.16 | 766.1 | 43 | 6.1 | 75 | Calm | 0 | 0 | ..... | 0 | 8ks | ..... | Calm | 0 | 0 | Cloudy | |
| Mt. Washington, N. H. | 23.72 | 602.2 | 30.08 | 764.0 | 4 | —15.6 | 74 | NE | 12 | 5.4 | ..... | 5cs | 0 | NW | ..... | 0.17 | 4.3 | Fair | |
| Nashville, Tennessee | 29.62 | 752.3 | 30.16 | 766.1 | 52 | 11.1 | 73 | Calm | 0 | 0 | ..... | 0 | 1s;sm | ..... | Calm | 0 | 0 | Clear | |
| New Haven, Connecticut | 30.30 | 769.6 | 30.43 | 772.9 | 21 | — 6.1 | 86 | N | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New London, Connecticut | 30.39 | 771.9 | 30.44 | 773.2 | 24 | — 4.4 | 81 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Orleans, Louisiana | 30.12 | 765.0 | 30.19 | 766.8 | 52 | 11.1 | 100 | SE | 3 | 1.3 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Newport, Rhode Island | 30.34 | 770.6 | 30.39 | 771.9 | 23 | — 5.0 | 73 | NW | 9 | 4.0 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| New York, New York | 30.26 | 768.6 | 30.45 | 773.4 | 26 | — 3.3 | 65 | N | 7 | 3.1 | ..... | 2ck | 2s | SE | Calm | 0 | 0 | Fair | |
| Norfolk, Virginia | 30.34 | 770.6 | 30.41 | 772.4 | 39 | 3.9 | 67 | NE | 6 | 2.7 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 26.73 | 678.9 | 29.30 | 744.2 | 34 | 1.1 | 79 | N | 12 | 5.4 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.43 | 747.5 | 29.47 | 748.5 | 34.0 | 1.1 | 90 | SE | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | 0.29 | 7.4 | Light snow. | |
| Omaha, Nebraska | 28.45 | 722.6 | 29.50 | 749.3 | 57 | 13.9 | 75 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | S | Inap. | Inap | Cloudy | |
| Oswego, New York | 30.05 | 763.3 | 30.39 | 771.9 | 32 | 0.0 | 79 | SE | 7 | 3.1 | ..... | 8c | 0 | NW | ..... | 0 | 0 | Fair | |
| Pembina, Dakota | 28.95 | 735.3 | 29.82 | 757.4 | 23 | — 5.0 | 86 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Philadelphia, Pa | 30.40 | 772.1 | 30.46 | 773.7 | 27 | — 2.8 | 76 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Phœnix, Arizona | 28.87 | 733.3 | 30.72 | 780.3 | 46 | 7.8 | 54 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.37 | 441.2 | 29.58 | 751.3 | 5 | —15.0 | 25 | SW | 22 | 9.8 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Pioche, Nevada | 23.82 | 605.0 | 29.59 | 751.6 | 28 | — 2.2 | 66 | S | 11 | 4.9 | ..... | 2c | 2s | S | Calm | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 29.36 | 745.7 | 30.19 | 766.8 | 39 | 3.9 | 64 | E | 6 | 2.7 | ..... | 10k | Sm'e | NW | E | 0 | 0 | Cloudy | |
| Port Huron, Michigan | 29.36 | 745.7 | 30.05 | 763.3 | 33 | 0.6 | 89 | SE | 8 | 3.6 | ..... | 8ck | 0 | W | ..... | 0.04 | 1.0 | Fair | |
| Portland, Maine | 30.02 | 770.1 | 30.38 | 771.6 | 23 | — 5.0 | 60 | N. | 4 | 1.8 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Portland, Oregon | 29.45 | 748.0 | 29.55 | 750.6 | 37.5 | 3.1 | 96 | SE | 7 | 3.1 | ..... | ..... | 10n | ..... | ..... | 0.49 | 12.4 | Light rain | |
| Prescott, Arizona | 24.63 | 625.6 | 29.90 | 761.7 | 35 | 1.7 | 53 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.15 | 740.4 | 29.98 | 761.5 | 49 | 9.4 | 85 | SE | 18 | 8.0 | ..... | 2k | 8s | S | SE | 0 | 0 | Cloudy | |
| Punta Rassa, Florida | 30.22 | 767.6 | 30.23 | 767.8 | 62 | 16.7 | 77 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Red Bluff, California | 29.53 | 750.0 | 29.90 | 759.4 | 42 | 5.6 | 83 | SE | 24 | 10.7 | ..... | 2c | 2k | Calm | SE | Inap. | Inap. | Fair | |
| Rio Grande City, Texas | 29.76 | 755.9 | 29.96 | 761.5 | 66 | 18.9 | 89 | SE | 20 | 8.9 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Rochester, New York | 29.66 | 753.4 | 30.32 | 770.1 | 25 | — 3.9 | 87 | SE | 10 | 4.5 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Roseburg, Oregon | 29.03 | 737.3 | 29.59 | 751.6 | 38.5 | 3.6 | 81 | S | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.46 | 11.7 | Light rain | |
| Sacramento, California | 29.93 | 760.7 | 30.03 | 762.8 | 46 | 7.8 | 84 | S | 8 | 3.6 | ..... | ..... | 10ks | ..... | S | 0.43 | 10.9 | Cloudy | |
| St. Louis, Missouri | 29.30 | 746.5 | 29.95 | 760.7 | 62 | 16.7 | 72 | S | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Marks, Florida | 30.23 | 767.8 | 30.25 | 768.3 | 48 | 8.9 | 93 | SE | 3 | 1.3 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| St. Paul, Minnesota | 28.90 | 734.0 | 29.73 | 755.1 | 39 | 3.9 | 76 | NE | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0.10 | 2.5 | Light rain | |
| Salt Lake City, Utah | 25.36 | 644.1 | 29.69 | 754.1 | 36 | 2.2 | 71 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.12 | 3.0 | Threatening | |
| San Antonio, Texas | 29.29 | 744.0 | 29.86 | 758.4 | 65 | 18.3 | 89 | SE | 3 | 3.6 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Cloudy | |
| San Diego, California | 30.10 | 764.5 | 30.17 | 766.3 | 55 | 12.8 | 87 | W | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.3 | Light rain | |
| Sandusky, Ohio | 29.35 | 745.5 | 30.03 | 762.8 | 41 | 5.0 | 82 | SE | 8 | 3.6 | ..... | ..... | 10ks | ..... | Calm | 0.02 | 0.5 | Threatening | |
| Sandy Hook, New Jersey | 30.40 | 772.1 | 30.43 | 772.9 | 25 | — 3.9 | 75 | NE | 14 | 6.3 | ..... | 1ck | 0 | N | ..... | 0 | 0 | Clear | |
| San Francisco, California | 29.97 | 761.2 | 30.04 | 763.0 | 50 | 10.0 | 72 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | W | 0.97 | 24.6 | Threatening | |
| Santa Fé, New Mexico | 23.10 | 586.7 | 29.84 | 758.8 | 34 | 1.1 | 43 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.16 | 766.1 | 30.26 | 768.3 | 59 | 15.0 | 76 | W | 7 | 3.1 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Smoky | |
| Shreveport, Louisiana | 29.87 | 758.7 | 30.09 | 764.3 | 59 | 15.0 | 82 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Silver City, New Mexico | 24.20 | 614.7 | 30.43 | 772.9 | 40 | 4.4 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.28 | 769.1 | 30.31 | 769.9 | 49 | 9.4 | 71 | NE | 14 | 6.3 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| Springfield, Massachusetts | 30.29 | 769.4 | 30.44 | 773.2 | 16 | — 8.9 | 66 | N | 1 | 0.4 | ..... | 2c | Sm'e | N | Calm | 0 | 0 | Fair | |
| Stockton, Texas | 26.96 | 684.8 | 29.96 | 761.0 | 54 | 12.2 | 61 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.32 | 770.1 | 30.38 | 771.6 | 29 | — 1.7 | 56 | NW | 20 | 8.9 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Fair | |
| Toledo, Ohio | 29.33 | 745.0 | 30.04 | 763.0 | 38 | 3.3 | 81 | NE | 6 | 2.7 | ..... | 0 | 5ks | ..... | SW | 0 | 0 | Fair | |
| Tucson, Arizona | 27.55 | 699.8 | 30.10 | 764.5 | 48 | 6.1 | 43 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.25 | 742.9 | 29.74 | 755.4 | 33.0 | 0.6 | 79 | E | 8 | 3.6 | ..... | 0 | 2ks | ..... | E | 0 | 0 | Fair | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 33 | 0.6 | 89 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Uvalde, Texas | 29.04 | 737.6 | 29.85 | 758.2 | 65 | 18.3 | 78 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.94 | 760.5 | 30.20 | 767.1 | 55 | 12.8 | 87 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Virginia City, Montana | 23.82 | 605.0 | 29.30 | 744.2 | 25 | — 3.9 | 100 | W | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.10 | 2.5 | Light snow | |
| Visalia, California | 29.78 | 756.1 | 30.11 | 764.8 | 47 | 8.3 | 88 | NE | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0.07 | 1.8 | Cloudy | |
| Washington, D. C. | 30.31 | 769.9 | 30.43 | 772.9 | 34 | 1.1 | 57 | E | 6 | 2.7 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 35 | 1.7 | 53 | N | ..... | ..... | 1 | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| Wilmington, N. Carolina | 30.20 | 767.1 | 30.28 | 769.1 | 47 | 8.3 | 55 | NE | 7 | 3.1 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.40 | 645.2 | 29.76 | 755.9 | 32 | 0.0 | 69 | SW | 28 | 12.5 | ..... | ..... | 10s | ..... | SW | 0.01 | 0.3 | Cloudy | |
| Wood's Holl, Mass | 30.32 | 770.1 | 30.37 | 771.4 | 28 | — 5.0 | 86 | N | 16 | 7.2 | ..... | 5cs | 5s | NW | NW | 0 | 0 | Cloudy | |
| Yankton, Dakota | 28.36 | 720.3 | 29.04 | 752.8 | 39 | 3.9 | 81 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.90 | 759.4 | 30.00 | 763.5 | 53 | 11.7 | 61 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.32 | 719.3 | 29.09 | 754.1 | 60 | 15.6 | 65 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.09 | 764.8 | 30.14 | 765.5 | 71 | 21.7 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.23 | 640.8 | ..... | ..... | 65.0 | 18.3 | 80 | Calm | 0 | 0 | ..... | 10k | 0 | ..... | ..... | 0.55 | 14.0 | ..... | Thomas Herran. |
| Navassa, W. I | 29.95 | 760.7 | 30.03 | 762.8 | 71 | 21.7 | ..... | E | 8.1 | 3.6 | ..... | ..... | ..... | ..... | ..... | 0.26 | 6.6 | Cloudy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.01 | 762.2 | 30.01 | 762.2 | 80 | 26.7 | 82 | NE | ..... | ..... | 2 | 4c | 5k | E | ..... | 0 | 0 | Fair | U. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,383 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,600 (?) ft., or 792.5 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,500 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,490 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,336.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.656 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.16 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.64 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumenial error of the barometer at Medellin is not known.

## UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | | | | | | | | | | | | | | | | | | | | | |
| Navy Yard, Pensacola, Fla. | 30.32 | 770.1 | 54 | 12.2 | 54 | 12.2 | 93 | NE | 2 | 0.9 | | | Fog | | | 0 | 0 | | | Clear. | |
| Navy Yard, Portsmouth, N.H. | 30.40 | 772.1 | 70 | 21.1 | 15 | — 9.4 | 100 | WNW | 2 | 0.9 | | | 0 | | | | | | | Clear. | |
| Naval Hospital, Yokohama, Japan *. | 30.15‡ | 765.8‡ | | | 40 | 4.4 | 64 | Calm | | | 0 | | 5ck | | W | 0 | 0 | | | Fair. | |
| Adams, Panama | 29.96 | 761.0 | 76 | 24.4 | 76 | 24.4 | 95 | NW | | | 2 | | 5 | | N;W | | | | | Fair. | |
| Alaska, N. 31° 43′, W. 117° 01′ | 30.26 | 768.6 | 63 | 17.2 | 56 | 13.3 | 81 | NW | | | 4 | | 5 | | SE | | | Mod'ate | NW | Hazy. | |
| Alliance, Villafranca, France | 30.53‡ | 775.4‡ | | | 58 | 14.4 | 68 | ENE | | | 1 | | 5 | | Calm | | | | | Pleasant. | |
| Ashuelot, Hong-Kong, China | 30.10‡ | 764.5‡ | | | 61 | 16.1 | 82 | ESE | | | 3 | | 10 | | E | | | Smooth | | Cloudy. | |
| Canonicus, New Orleans, La. | 30.18 | 766.6 | 43 | 6.1 | 41 | 5.0 | 93 | S | | | 1 | | 10 | | S | | | | | Foggy | |
| Colorado, New York, N. Y. | 30.38 | 771.6 | 28 | — 2.2 | 25 | — 3.9 | 100 | N | 4 | 1.8 | | | 5 | | NNW | 0 | 0 | | | Clear. | |
| Constitution, Lisbon, Portugal | 30.34‡ | 770.6‡ | | | 65 | 18.3 | 89 | SE | | | 2 | | 3 | | Calm | | | | | Hazy. | |
| Despatch, Constantinople, Turkey | 30.18‡ | 766.6‡ | | | 45 | 7.2 | 84 | NNE | | | 4 | | 8 | | NE | | | Smooth | | Cloudy | |
| Franklin, Norfolk, Va. | 30.55 | 776.0 | 72 | 22.2 | 42 | 5.6 | 67 | ENE | 3.6 | 1.6 | | | 8 | | NNW | 0 | 0 | | | Cloudy. | |
| Gettysburg, Genoa, Italy | 30.42‡ | 772.6‡ | | | 64 | 17.8 | 89 | S | | | 0–1 | | 2 | | | 0 | 0 | | | Clear. | |
| Hartford, Montevideo, Uruguay | 29.91 | 759.7 | 73 | 22.8 | 77 | 25.0 | 77 | SSW | | | 3 | | 8 | | | 0 | 0 | | | Cloudy. | |
| Lackawana, Panama *. | 29.70‡ | 754.4‡ | | | 76 | 24.4 | 95 | NW | | | 1 | | 5 | | | 0 | 0 | | | Fair | |
| Michigan, Erie, Pa. †. | 30.07 | 763.8 | | | 36 | 2.2 | 81 | S | | | 4 | | 10 | | | | | | | Cloudy. | |
| Monocacy, Shanghai, China *. | 30.33‡ | 770.4‡ | | | 46 | 7.8 | 84 | E | | | 2 | | 10 | | E | | | | | Rainy. | |
| Monongehela, Yokohama, Japan *. | 30.19‡ | 766.8‡ | | | 44 | 6.7 | 40 | N | | | 3 | | 8 | | N | 0 | 0 | | | D. clouds. | |
| New Hampshire, Port Royal, S. C. | 30.25 | 768.3 | 59 | 15.0 | 57 | 13.9 | 94 | E | 6 | 2.7 | | | Fog | | | 0 | 0 | | | Foggy | |
| Onward, Callao, Peru †. | 30.03 | 762.8 | | | 68 | 20.0 | 90 | SE | | | 2 | | 5 | | | | | Long | W | Misty. | |
| Palos, Tientsin, China | 30.31 | 769.9 | 34 | 1.1 | 36 | 2.2 | 55 | NNW | | | 2 | | 0 | | | | | | | Clear. | |
| Passaic, Washington, D. C. | | | | | 34 | 1.1 | 71 | N | | | 3 | | 2 | | | | | | | Clear. | |
| Pensacola, Talcahuano, Chili | 29.96‡ | 761.0‡ | | | 61 | 16.1 | 88 | SSW | 4 | 1.8 | | | 0 | | | 0 | 0 | Smooth | | Clear. | |
| Powhatan, N. 18° 00′, W. 74° 22′ | 30.05‡ | 763.3‡ | | | 75 | 23.9 | 77 | E | | | 5 | | 10 | | E | | | Mod'ate | E | Cloudy. | |
| Quinnebaug, N. 43° 20′, E. 9° 08′ | 30.56‡ | 776.2‡ | | | 59 | 15.0 | 82 | ESE | | | 2 | | 2 | | SE | | | Smooth | | Clear. | |
| Ranger, Kobe, Japan *. | 30.42‡ | 772.6‡ | | | 46 | 7.8 | 77 | NW | | | 4 | | 2 | | Calm | | | Smooth | | Clear. | |
| Richmond, Naples, Italy | 30.44‡ | 773.2‡ | | | 57 | 13.9 | 81 | ENE | | | 4 | | 0 | | | 0 | 0 | Smooth | | Clear. | |
| Rio Bravo, Brownsville, Texas | 29.99 | 761.7 | 66 | 18.9 | 66 | 18.9 | 94 | SE | | | 2 | | 2 | | SW | | | | | Fair | |
| Santee, Annapolis, Md. | 30.42‡ | 772.6‡ | | | 35 | 1.7 | 74 | E | | | 1 | | 2 | | SW | | | | | Clear | |
| Saratoga, Chesapeake Bay | 30.47 | 773.9 | | | 39 | 3.9 | 73 | ENE | | | 4 | | 4 | | NE | 0 | 0 | | | D. clouds. | |
| St. Louis, League Island, Pa. | 30.30 | 769.6 | 51 | 10.6 | 34 | 1.1 | | NE | | | 3 | | 0 | | | 0 | 0 | | | Clear | |
| Supply, N. 30° 56′, W. 72° 00′ | 30.29‡ | 769.4‡ | | | 64 | 17.8 | 78 | NNE | | | 5 | | 8 | | | | | Mod'ate | NE | Cloudy. | |
| Trenton, Villafranca, France | 30.53‡ | 775.4‡ | | | 68 | 20.0 | 84 | SE | | | 1 | | 0 | | | 0 | 0 | None | | Clear. | |
| Tuscarora, N. 16° 37, W. 99° 15′ | 30.00‡ | 762.0‡ | | | 78 | 25.6 | 78 | NE | | | 2 | | 2 | | S;W | 0 | 0 | Smooth | | Clear | |
| Wabash, Boston, Mass. | 30.38‡ | 771.6† | | | 16 | — 8.9 | 66 | NW | | | 2 | | 5 | | | | | | | Fair. | |
| Wyoming, Constantinople, Turkey | 30.17‡ | 766.3‡ | | | 44 | 6.7 | 92 | N | | | 2–3 | | 10 | | | | | Mod'ate | N | Cloudy. | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | |
| S. S. Colima, N. 15° 50', W. 97° 41'....† | | 30.01‡ | 762.2‡ | 77 | 25.0 | 86 | NW | | | 3 | | 4 | | E | 0 | Small | NW | Misty | Capt. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota, Capt. Morse | | | | | | | | | | | | | | | | | | | |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | F. W. Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation, no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WHITE STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, Capt. L. Meyer, Hong-Kong, China | * | 29.97‡ | 761.2‡ | 63 | 17.2 | 83 | E | | | 5 | | ks | | E | | Mod'ate | NNE | Squally | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 35° 10', E. 146° 48'... | † | 29.92‡ | 760.0‡ | 51 | 10.6 | ?? | N | | | 5 | | k | | N | Blank | Swell | NW | Overcast | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

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| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 26° 8', W. 56° 59' | | 30.19‡ | 766.8‡ | 83.0 | 28.3 | 79 | W | | | 1 | | 2 | | | 1 hour | Mod'ate | N | Fine | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 50° 26', W. 18° 10'. | | 30 15‡ | 765.8‡ | 53 | 11.7 | | S | | | 6 | | 8 | | SW | 0 | Mod'ate | SW | Partly cl'dy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES.** (Miscellaneous.)

Furnished by the cooperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

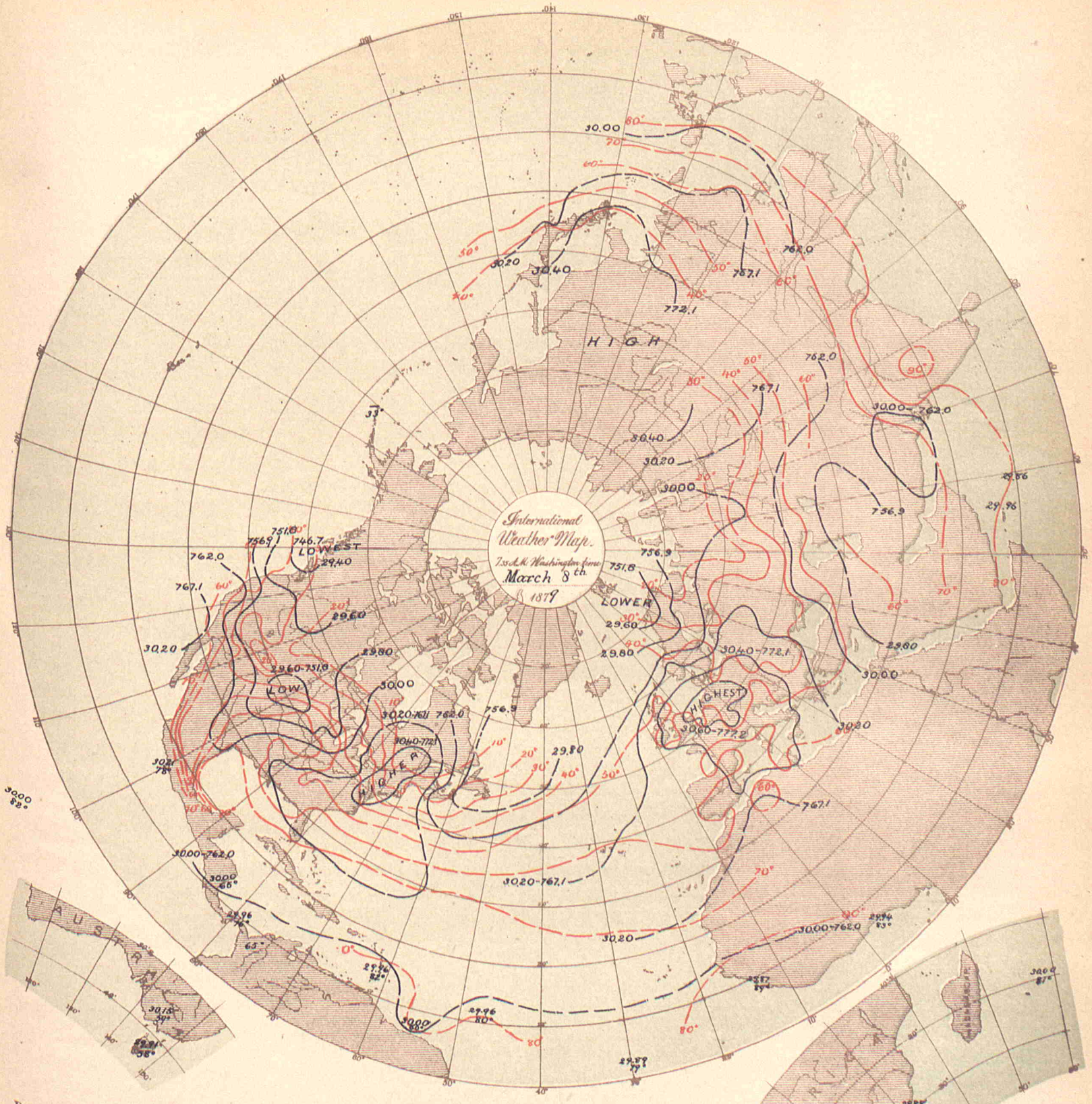
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 9, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | 30.25 | 768.3 | 60.4 | 15.8 | 83 | NE | | | 2 | | 8 | | | 0 | 0 | Very cloudy | |
| Nemours | | | 30.36 | 771.2 | 62.2 | 16.8 | 73 | E | | | 1 | | 5 | | | 0 | 0 | Cloudy | Kesxuche. |
| Algiers | | | 30.34 | 770.7 | 57.9 | 14.4 | 86 | NE | | | 3 | | 0 | | | 0 | 0 | Clear | Tourilliere. |
| La Calle | | | 30.43 | 773.0 | 56.7 | 13.7 | 67 | E | | | 5 | | 2 | | | 0 | 0 | Fair | Foufrede. |
| Tunis | | | 30.41 | 772.5 | 58.8 | 14.9 | 68 | E | | | 5 | | 0 | | | 0 | 0 | Clear | Jacques. |
| Sfax | | | 30.41 | 772.5 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 30.26 | 768.6 | 55.0 | 12.8 | 28 | N | | | 5 | | 5 | | | 0 | 0 | Cloudy | Herbin. |
| Tebessa | | | 30.41 | 772.8 | 50.9 | 10.5 | 29 | E | | | 2 | | 8 | | | 0 | 0 | Very cloudy | Watrin. |
| Geriville | | | 30.18 | 766.9 | 41.7 | 5.4 | 94 | NE | | | 4 | | 10 | | | 0.024 | 0.6 | Covered | Brugniaux. |
| Laghouat | | | 30.31 | 769.9 | 46.0 | 7.8 | 66 | NNE | | | 4 | | 10 | | | 0.020 | 0.5 | Covered | Bertrand. |
| Biskra | | | 30.37 | 771.3 | 59.7 | 15.4 | 56 | NNW | | | 1 | | 8 | | | 0 | 0 | Very cloudy | Chanvaux. |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,860? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.85 | 758.2 | 30.41 | 772.4 | 53.6 | 12.0 | 36 | NE | | | 1 | 2 | | | | 0 | 0 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.59 | 751.5 | 30.38 | 771.6 | 44.8 | 7.1 | 71 | WNW | | | 2 | 10 | | | | 0 | 0 | | Dr. Wierzbiski |
| Eperies | 29.88 | 746.2 | 30.28 | 769.1 | 46.8 | 8.2 | 61 | NW | | | 3 | 10ks | | | | 0 | 0 | | Julius Mikolik. |
| Gratz | 29.18 | 741.1 | 30.46 | 773.7 | 48.2 | 9.0 | 64 | SE | | | 2 | 0 | | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.84 | 732.5 | 30.32 | 770.1 | 41.4 | 5.2 | 60 | NW | | | 1 | 9 | | | | 0 | 0 | | Prof. A. Gottschling. |
| Kremsmünster | 29.14 | 740.1 | 30.52 | 775.2 | 47.3 | 8.5 | 53 | NNW | | | 2 | 1 | | | | 0 | 0 | | Prof. C. Wagner. |
| Lemberg | 29.18 | 741.2 | 30.21 | 767.2 | 38.8 | 3.8 | 87 | NW | | | 1 | 10 | | | | 0.012 | 0.3 | | Dr. T. Stanecki. |
| Pola | 30.35 | 770.8 | 30.46 | 773.7 | 53.1 | 11.7 | 75 | WNW | | | 3 | 1 | | | | 0 | 0 | | I.R. Hydrographic Office |
| Szathmar | 29.89 | 759.1 | 30.37 | 771.5 | 38.8 | 3.8 | 50 | SW | | | 1 | 10 | | | | 0 | 0 | | Julius Calos, S. J. |
| Szegedin | | | | | | | | | | | | | | | | | | | Karl Stancel. |
| Trieste | 30.39 | 771.8 | 30.49 | 774.4 | 51.4 | 10.8 | 67 | W | | | 1 | 0 | | | | 0 | 0 | | P. Busin. |
| Vienna | 29.73 | 755.2 | 30.46 | 773.7 | 52.7 | 11.5 | 42 | WNW | | | 3 | 1 | | | | 0 | 0 | | I. R. Central Met. Obs'y. |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 367 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Pasasu. |
| Brussels | | | | | | | | | | | | | | | | | | | Royal Observatory |
| Furnes | | | | | | | | | | | | | | | | | | | M. E. de Cae. |
| Maeseyck | | | | | | | | | | | | | | | | | | | M. Pierrot |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:9, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instru-m'tal error and temperature. Inches. | Barometer. Corrected for instru-m'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.98 | 761.5 | 30.08 | 764.0 | 48.7 | 9.3 | ..... | WSW | 21 | 9.4 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | Blue sky..... | W. Boswell. |
| Ardrossan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.36 | 771.1 | 50.5 | 10.3 | ..... | WSW | 14 | 6.3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.39 | 771.9 | 54.2 | 12.3 | ..... | WSW | 21 | 9.4 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 30.37 | 771.4 | 51.9 | 11.1 | ..... | S | 30 | 13.4 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Squally..... | Thomas Mackereth. |
| Bradford, Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.92 | 760.0 | 29.95 | 760.7 | 80 | 26.7 | ..... | NE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast ..... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 30.40 | 772.1 | 61.0 | 16.1 | ..... | WSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | H. Todd. [O. |
| Cardington | ..... | ..... | 30.36 | 771.1 | 57.0 | 13.9 | ..... | W | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John McLaren. |
| Chatham, School M. E. | 30.36 | 771.1 | 30.50 | 774.7 | 52.1 | 11.2 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Corpl. Daly, R. E. |
| Dartmoor | 28.95 | 735.3 | 30.43 | 772.9 | 53.4 | 11.9 | ..... | W | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 30.31 | 769.9 | 30.35 | 770.9 | 50 | 10.0 | ..... | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | J. Mac Gowan. |
| Dover | 30.42 | 772.6 | 30.45 | 773.4 | 46 | 7.8 | ..... | WSW | ..... | ..... | 2 | ..... | 0 ? | ..... | ..... | ..... | ..... | Overcast?... | J. Costello. |
| Falmouth, Observatory | 30.29 | 769.4 | 30.52 | 775.2 | 48.9 | 9.4 | ..... | S | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Hazy ..... | The Staff. |
| Fort Napier, (Natal) | 27.62 | 701.5 | 29.94 | 760.5 | 72.0 | 22.2 | ..... | E | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.75 | 755.6 | 29.98 | 761.5 | 83 | 28.3 | ..... | S | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | 30.36 | 771.1 | 47 | 8.3 | ..... | SW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.26 | 768.6 | 30.32 | 770.1 | 55.8 | 13.2 | ..... | E | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 30.00 | 762.0 | 30.20 | 767.1 | 48.8 | 9.2 | ..... | WSW | ..... | ..... | 8 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | D. G. Maclean. |
| Great Yarmouth | 30.37 | 771.4 | 30.38 | 771.6 | 56 | 13.3 | ..... | WSW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.26 | 768.6 | 30.44 | 773.2 | 57.4 | 14.1 | ..... | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | The Staff, for G. B. Airy. |
| Guernsey | 30.28 | 769.1 | 30.51 | 774.9 | 51 | 10.6 | ..... | NW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | 30.43 | 772.9 | 30.55 | 776.0 | 54 | 12.2 | ..... | NW | ..... | ..... | 1 | ..... | 1c | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 30.36 | 771.1 | 30.41 | 772.4 | 48 | 8.9 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds.... | John Tilston. |
| Jersey | 30.23 | 767 8 | 30.52 | 775.2 | 54.2 | 12.3 | ..... | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky .... | J. Fisher. |
| Kew, Observatory | 30.40 | 772.1 | 30.44 | 773.2 | 52.5 | 11.4 | ..... | SSW | 10 | 4.5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | The Meteorological Of. |
| Leicester, Museum | 30.14 | 765.5 | 30.40 | 772.1 | 53.3 | 11.8 | ..... | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 30.28 | 769.1 | 30.36 | 771.1 | 57 | 13.9 | ..... | NE | ..... | ..... | 1 | ..... | 3k | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.96 | 758.4 | 29.96 | 761.0 | 47 | 8.3 | ..... | WSW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ½ clouded... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.21 | 767.3 | 73.0 | 22.8 | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.21 | 741.9 | 30.40 | 772.1 | 59.2 | 15.1 | ..... | SW | ..... | ..... | 2 | ..... | 6ck | ..... | SW; W | 0 | 0 | D. clouds.... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.58 | 758.9 | 30.40 | 772.1 | 56.1 | 13.4 | ..... | WNW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.44 | 773.2 | 51 | 10.6 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Misty..... | H. E. Bellamy. |
| Plymouth | 30.42 | 772.6 | 30.49 | 774.4 | 48.6 | 9.3 | ..... | SE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | John Merrifield. |
| Roche's Point | 30.41 | 772.4 | 30.45 | 773.4 | 53 | 11.7 | ..... | WSW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | W. Kennedy. |
| Saint Ann's Head | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys | ..... | ..... | 29.85 | 758.2 | 41.8 | 5.4 | ..... | W | 40 | 17.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Showery.... | Dr. Hoskins. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 30.02 | 762.5 | 42.8 | 6.0 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Showery ..... | W. H. Lyne. |
| Sheffield | 30.00 | 762.0 | 30.29 | 769.4 | 54.7 | 12.6 | ..... | SW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | W. F. Cooper. |
| Silloth Rectory | 30.26 | 768.6 | 30.29 | 769.4 | 49.8 | 9.9 | 74 | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds.... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.96 | 761.0 | 30.36 | 771.1 | 50.2 | 10.1 | ..... | WSW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Rev. S. J. Perry. |
| Stratfield Turgiss | 30.23 | 767.8 | 30.45 | 773.4 | 58.3 | 14.6 | ..... | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | C.H. Griffith, F.M.S. |
| Thurso | 29.86 | 758.4 | 29.93 | 760.2 | 45 | 7.2 | ..... | SW | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | John Trotter. |
| Truro, Royal Institution | 30.44 | 773.2 | 30.48 | 774.2 | 57 | 13.9 | ..... | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | 30.44 | 773.2 | 30.46 | 773.7 | 50.6 | 10.3 | ..... | SSW | 9 | 4.0 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | Misty..... | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.92 | 760.0 | 29.96 | 761.0 | 84 | 28.9 | 42 | SSE | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.96 | 761.0 | 59.0 | 15.0 | 78 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0.11 | 2.8 | Clear..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 30.20 | 767.1 | 50.6 | 10.3 | ..... | W | ..... | ..... | 4 | ..... | 6k | ..... | ..... | 0 | 0 | Cloudy ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.84 | 757.9 | 30.04 | 762.6 | 81.4 | 27.4 | 63 | E | 7.5 | 3.4 | ..... | 0 | 4 | ..... | ESE | 0.06 | 1.5 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 30.02 | 762.5 | 30.11 | 764.8 | 63.2 | 17.3 | 86 | SE | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Very fine.... | R. L. J. Ellery. |
| Monach L'thouse, (Hebrides) | ..... | ..... | 30.02 | 762.5 | 45 | 7.2 | ..... | W | ..... | ..... | 8 | 5 | 3 | W | ..... | 0.5 | 13. | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.55 | 750.6 | 42 | 5.6 | ..... | W | ..... | ..... | 8 | 5 | 7 | W | ..... | ..... | ..... | Sleeting ..... | Robert Burnet. |

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day,) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day,) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Wind. Direction. From— | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 35° 54', E. 14° 30' | NNE | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Capt. W. J. L. Wharton. |
| Brig Alliance, N. 8° 52', W. 49° 05' | ENE | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. W. Scott. |
| S. S. Amanda, N. 17° 35', E. 40° 20' | NW | 4 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. B. Boyes. |
| Barque Belle Isle, N. 23° 35', W. 83° 15' | ENE | 6 | ..... | 5 | ..... | ..... | 6 | NE | D. clouds..... | Capt. A. J. Brown. |
| Ship British Commodore, N. 41° 30', W. 46° 30' | SSW | 4 | ..... | 9 | ..... | ..... | 7 | S; W | Raining ..... | Capt. J. W. Thorne. |
| —— City of Agra, N. 1° 49', W. 30° 01' | NE | 1 | ..... | 4 | ..... | ..... | ..... | NE | D. clouds..... | Capt. Thos. Young. |
| Barque Commewyne, N. 21° 25' W. 57° 36' | NE | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. A. Buchan. |
| —— Denbighshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Murdoch. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole, N. 46° 49', W. 12° 45' | E | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven, N. 11° 28', E. 55° 27' | ESE | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | Capt. C. W. Pearson. |
| S. S. Wyberton, N. 13° 36', E. 52° 00' | SSE | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. W. R. McMontry. |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | 65.3 | 18.5 | 85 | SE | ..... | ..... | 1 | c | ks | ..... | ..... | Inap. | Inap. | ..... | Mr. Ansart. |
| San José | 26.26 | 667.0 | 29.98 | 761.5 | | | | | | | | | | | | | | | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.20 | 767.1 | 30.25 | 768.3 | 45.3 | 7.4 | 73 | WSW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | |
| Farõe | 30.24 | 768.2 | 30.26 | 768.7 | 38.5 | 3.6 | 90 | SW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 30.10 | 764.5 | 30.14 | 765.6 | 7.9 | —13.4 | 84 | ENE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Farõe) | 29.31 | 744.5 | 29.35 | 745.4 | 39.9 | 4.4 | 74 | SW | ..... | ..... | 7 | ..... | 7 | ..... | ..... | ..... | ..... | Raining | |
| Vestervig | 29.99 | 761.7 | 30.16 | 766.0 | 37.4 | 3.0 | 90 | SW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.99 | 761.8 | 30.54 | 775.8 | 52.2 | 11.2 | 80 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Collignon, Director. |
| Amiens, Normal School | 30.38 | 771.7 | 30.50 | 774.6 | 42.8 | 6.0 | 88 | ENE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bonvallet, Director. |
| Avignon, Normal School | 30.43 | 772.8 | 30.50 | 774.8 | 60.4 | 15.8 | 56 | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | M. Giraud, Director. |
| Bar-sur-Seine | 29.93 | 760.2 | 30.49 | 774.4 | 56.7 | 13.7 | 50 | E | ..... | ..... | 1 | 2c | ..... | ..... | ..... | 0 | 0 | Slightly cl'dy | C. Saillard, Director. |
| Beauvais, Normal School | 30.23 | 767.7 | 30.52 | 775.2 | 58.1 | 11.7 | 65 | E | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.60 | 751.7 | 30.51 | 775.0 | 52.5 | 11.4 | 61 | ENE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.65 | 753.1 | 30.58 | 776 6 | 54.9 | 12.7 | 66 | W | ..... | ..... | 1 | 2c | ..... | W | W | 0 | 0 | Slightly cl'dy | M. Marlot, Director. |
| Bourges, Normal School | 29.95 | 760.7 | 30.52 | 775.1 | 52.2 | 11.2 | 83 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Waquet, Director. |
| Brest, Naval Observatory | 30.21 | 767.4 | 30.46 | 773.6 | 56.5 | 13.6 | 73 | NNE | ..... | ..... | 2 | ..... | 1 | ..... | Calm | 0 | 0 | ..... | M. de Rermaree, Director |
| Carcassonne, Normal School | 30.06 | 763.6 | 30.48 | 774.2 | 59.7 | 15.4 | 56 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | September, Director. |
| Caen, Normal School | 30.42 | 772.7 | 30.50 | 774.7 | 59.4 | 15.2 | 62 | SSE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | M. Lair, Director. |
| Chartres, Normal School | 29.87 | 758.6 | 30.44 | 773.3 | 51.8 | 11 | 84 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 30.21 | 767.3 | 30.53 | 775.5 | 55.6 | 13.1 | 64 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Slightly cl'dy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 29.69 | 754.7 | 30.52 | 775.2 | 49.8 | 9.9 | ..... | E | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | M. Kina, Director. |
| Commercy, Normal School | 29.69 | 788.8 | 30.45 | 773.4 | 60.8 | 16.0 | 26 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Misty | Alluard, Director. |
| Commune de Grèsque* | 29.63 | 752.7 | 30.52 | 775.2 | 49.8 | 9.9 | ..... | E | ..... | ..... | 1 | 1c | ..... | ..... | E | 0 | 0 | Clear | Dr. Coulet, Director. |
| Grenoble, Normal School | 29.38 | 746.3 | 30.52 | 775.3 | 57.6 | 14.2 | 47 | W | ..... | ..... | 2 | ..... | 2 | ..... | SW | 0 | 0 | ¾ covered | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.72 | 754.8 | 30.50 | 774.8 | 52.6 | 11.4 | 59 | ENE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Moullot, Director |
| Le Mans, Normal School | 30.29 | 769.4 | 30.50 | 774.8 | 60.4 | 15.8 | 71 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 30.21 | 767.3 | 30.52 | 775.3 | 57.2 | 14 | 61 | ESE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Baudry, Director. |
| Lorient, Naval Observatory | 29.59 | 751.5 | 30.54 | 775.7 | 52 3 | 11.3 | 75 | WNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | 30.40 | 772.2 | 30.50 | 774.8 | 57.6 | 14.2 | 86 | S | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Mirecourt, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Barbier, Director. |
| Nismes, Normal School | 29.48 | 748.8 | 30.60 | 777.3 | 49.3 | 9.6 | 44 | NW | ..... | ..... | 1 | ..... | s | ..... | SE | 0 | 0 | ..... | |
| Privas, Normal School | 30.30 | 769.5 | 30.50 | 774.7 | 63.0 | 17.2 | 33 | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Boyer, Director. |
| Puy de Dome (Summit) Obs | 29.48 | 748.7 | 30.55 | 776.9 | 61.2 | 16.2 | 49 | N | ..... | ..... | 1 | ..... | ..... | N | N | 0 | 0 | ..... | M. Cantier, Director. |
| Rochefort, Naval Obs'y | 25.53 | 648.4 | ..... | ..... | 39.4 | 4.1 | 67 | E | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | Allnard, Director. |
| Rouen, Normal School | 30.48 | 774.3 | 30.52 | 775.1 | 61.1 | 16.2 | 64 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Lt. Decante, Director. |
| Saint Malo (Port) Obs'y | 30.44 | 773.1 | 30.52 | 775.3 | 59.2 | 15.1 | 52 | SSE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Frere Lucard, Director. |
| Saint Maur, (near Paris) | 30.46 | 773.8 | 30.49 | 774.5 | 51.3 | 10.7 | 77 | NNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Lt. Hercouet, Director. |
| Tarbes, Normal School | 30.38 | 770.4 | 30.50 | 774.6 | 57.7 | 14.3 | 48 | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | E. Renou, Director. |
| Versailles Observatory | 29.35 | 745.4 | 30.44 | 773.2 | 55.4 | 13 | 57 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Huguet, Director. |
| Villefranche-sur-Saone, N.S. | 30.00 | 762.0 | 30.49 | 774.5 | 49.5 | 9.7 | ..... | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Foggy | Dr. A. Bérigny, Director |
| SUB-SERIES. | 29.81 | 757.1 | 30.53 | 775.5 | 62.6 | 17 | 70 | SW | ..... | ..... | 1 | ..... | 1 | ..... | W | 0 | 0 | Clear | M. Nicot, Director. |
| Fort de France, Martinique | 29.91 | 759.6 | 29.93 | 760.3 | 73.8 | 23.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.39 | 10. | ..... | L'Abbé Marchesi. |
| Lyons Obs'y, (Park Station) | 29.87 | 758.6 | 30.49 | 774.5 | 58.1 | 14.5 | 53 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 25.18 | 639.5 | 30.49 | 774.5 | 44.6 | 7.0 | 52 | ESE | 7.4 | 3.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | 30.51 | 775.0 | 59.9 | 15.5 | 80 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 30.21 | 767.4 | ..... | ..... | 58.3 | 14.6 | 46 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Marié Davy, Director. |
| Perpignan | 30.39 | 772.0 | 30.50 | 774.7 | 56.1 | 13.4 | 70 | SE | 5.6 | 2.5 | ..... | ..... | 1 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22 78 | 578.6 | ..... | ..... | 30.2 | — 1.0 | ..... | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Gen'l de Nansouty. |
| Toulouse, Observatory | 29.77 | 756.2 | 30.50 | 774.8 | 56.3 | 13.5 | 72 | SSE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | M. Mercadier Juller. |
| Tours | 30.29 | 769.3 | 30.48 | 774.3 | 58.6 | 14.8 | 68 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.30 | 769.7 | 30.38 | 770.3 | 42.3 | 5.7 | 90 | NNE | 5.4 | 2.4 | ..... | ..... | 10k | ..... | ..... | 0.602 | 15.3 | Covered | Marc Dechevrens, S. J. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque on the scale 0 to 4 and Brest on the scale 0 to 10; Mirecourt apparently gives cloud direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grèsque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.3 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.3 ft.; Pic du Midi, (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.68 | 753.8 | 30.54 | 775.6 | 39.2 | 4.0 | 37 | SE | | | 4 | | 1 | S | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 30.27 | 768.8 | 30.44 | 773.3 | 49.1 | 9.5 | 66 | SW | | | 1 | | 0 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.89 | 759.3 | 30.43 | 773.0 | 48.2 | 9.0 | 61 | WNW | | | 6 | | 1 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 30.07 | 763.7 | 30.51 | 775.0 | 48.9 | 9.4 | 66 | SW | | | 1 | | 0 | | | 0 | 0 | | Albert Sena. |
| Cassel | 29.83 | 757.6 | 30.44 | 773.2 | 50.5 | 10.3 | 88 | SSE | | | 0 | | 0 | | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 30.30 | 769.7 | 30.47 | 773.9 | 54.7 | 12.6 | 51 | S | | | 2 | | 7 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 30.17 | 766.3 | 30.55 | 776.0 | 49.6 | 9.8 | | N | | | 1 | | 3 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 29.06 | 738.1 | 30.47 | 774.0 | 38.8 | 3.8 | 87 | SW | | | 2 | | 2 | NE | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 30.34 | 770.5 | 30.41 | 772.3 | 50.0 | 10.0 | 55 | SW | | | 3 | | 6cs | | | Inap. | Inap. | Fair | Captain F. Hegemann. |
| Kiel | 30.33 | 770.4 | 30.35 | 770 8 | 46.8 | 8.2 | 70 | SW | | | 2 | | 6 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.07 | 763.8 | 30.16 | 766.0 | 39.0 | 3.9 | 81 | NW | | | 4 | | 2 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 30.27 | 768.8 | 45.1 | 7.3 | | W | | | 4 | | 2 | | | 0.122 | 3.1 | | H. Müller. |
| Leipsic, Observatory | 30.09 | 764.3 | 30.53 | 775.4 | 45.3 | 7.4 | 61 | SW | | | 3 | | 4 | | | 0 | 0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 30.07 | 763.7 | 30.11 | 764.9 | 36.8 | 2.4 | 89 | W | | | 3 | | 4c | | | | | | Skalweit. |
| Neufahrwasser | 30.21 | 767.3 | 30.23 | 767.7 | 47.6 | 8.5 | 54 | NW | | | 4 | | 7 | | | 0 | 0 | | A. Lothes. |
| Posen | 30.11 | 764.9 | 30.41 | 772.4 | 48.6 | 9.2 | 67 | W | | | 3 | | 4 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.99 | 761.7 | 29.56 | 776.2 | 46.0 | 7.8 | 66 | Calm | | | 0 | | 4 | | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 29.56 | 750.7 | 29.52 | 775.2 | 50.9 | 10.5 | 49 | W | | | 1 | | 6 | W | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | | | | | | | | | | | | | | | | | | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 29.01 | 736.8 | 30.57 | 776.5 | 43.5 | 6.4 | 59 | Calm | 0 | 0 | | | 8c | | | 0 | 0 | | Dr. Van Bebber. |
| Wustrow, Naval School | 30.31 | 769.9 | 30.34 | 770.5 | 37.2 | 2.9 | 88 | SW | | | 2 | | 0 | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.72 | 754.8 | 30.08 | 764.1 | 43.7 | 6.5 | | NE | | | 4.0 | | | | | | | Covered | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.97 | 761.3 | 30.02 | 762.6 | 74.2 | 23.4 | 76 | SSW | 7 | 3.1 | | | 5 | | | 0 | 0 | D. clouds | |
| Deesa | 29.48 | 748.7 | 29.95 | 760.6 | 85.8 | 29.9 | 30 | N | 9.6 | 4.3 | | | 5 | NW | | 0 | 0 | D. clouds | |
| Bombay | 29.86 | 758.4 | 29.90 | 759.4 | 79.9 | 26.6 | 81 | NW | 21 | 9.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.25 | 743.0 | 30.01 | 762.3 | 72.8 | 22.7 | 39 | SW | 2.5 | 1.1 | | | 8 | | | 0 | 0 | Cloudy | |
| Belgaum | 27.38 | 695.3 | 29.86 | 758.4 | 88.1 | 31.2 | 40 | E | 5.0 | 2.2 | | | 2 | | | 0 | 0 | | |
| Roorkee | 29.04 | 737.5 | 29.95 | 760.6 | 74.8 | 23.8 | 33 | NW | 2.1 | 0.9 | | | 10 | | | 0 | 0 | | |
| Agra | 29.39 | 746.5 | 29.96 | 761.0 | 81.2 | 27.3 | 29 | NE | | | | | | | | 0 | 0 | | |
| Nagpur | 28.82 | 732.0 | 29.84 | 757.9 | 93.5 | 34.2 | 33 | Calm | 1.7 | 0.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.51 | 749.5 | 29.89 | 759.1 | 81.8 | 27.7 | 26 | NW | 2.6 | 1.2 | | | 7 | N | | 0 | 0 | D. clouds | |
| Allahabad | 29.56 | 750.8 | 29.87 | 758.7 | 85.7 | 29.8 | 34 | WNW | 2.8 | 1.2 | | | 10 | | | 0 | 0 | Overcast | |
| Patna | 29.65 | 753.1 | 29.83 | 757.7 | 82.7 | 28.2 | 38 | WNW | 4.2 | 1.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.86 | 707.6 | 29.86 | 758.5 | 81.8 | 27.7 | 21 | WNW | 6.6 | 3.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.75 | 755.7 | 29.83 | 757.8 | 86.1 | 30.1 | 60 | SSW | 5.0 | 2.2 | | | 3 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.84 | 757.9 | 29.86 | 758.5 | 83.2 | 28.4 | 71 | WSW | 7.0 | 3.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.42 | 747.1 | 29.80 | 757.0 | 81.2 | 27.3 | 32 | WNW | 3.6 | 1.6 | | | 3 | W | | 0 | 0 | D. clouds | |
| Chittagong | 29.78 | 756.5 | 29.88 | 758.9 | 77.6 | 25.3 | 87 | WSW | 5.8 | 2.6 | | | 0 | | | 0 | 0 | | |
| Sibsagar | 29.55 | 750.7 | 29.90 | 759.3 | 71.0 | 21.7 | 65 | NE | 2.1 | 0.9 | | | 10 | W | W | 0 | 0 | D. clouds | |
| Jubbulpore | 28.52 | 724.5 | 29.88 | 758.9 | 85.8 | 29.9 | 26 | N | 3.1 | 1.4 | | | 0 | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,020 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upper. 0—10. | Clouds. Amount. Lower. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 30.06 | 763.4 | 30.48 | 774.1 | 54.9 | 12.7 | 54 | W | 1.3 | 0.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.98 | 761.6 | 30.51 | 775.0 | 53.8 | 12.1 | 57 | NW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 30.37 | 771.4 | 30.48 | 774.3 | 54.0 | 12.2 | 50 | SW | 1.8 | 0.8 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 29.59 | 751.5 | 30.52 | 775.2 | 53.4 | 11.9 | 62 | S | 2.5 | 1.1 | ..... | ..... | 1 | NW | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 30.28 | 769.2 | 30.48 | 774.2 | 58.5 | 14.7 | 53 | SW | 1.8 | 0.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 28.56 | 725.3 | 30.52 | 775.2 | 48.4 | 9.1 | 62 | WNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 30.45 | 773.4 | 30.50 | 774.6 | 49.3 | 9.6 | 69 | NW | 13.0 | 5.8 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 30.20 | 767.1 | 30.46 | 773.8 | 59.0 | 15.0 | 28 | N | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Cav. F Meucci |
| Leghorn | 30.37 | 771.3 | 30.45 | 773.5 | 57.0 | 13.9 | 53 | N | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 30.20 | 767.1 | 30.38 | 771.7 | 60.3 | 15.7 | 24 | N | 7.4 | 3.3 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 30.04 | 763.0 | 30.30 | 769.6 | 49.5 | 9.7 | 38 | NE | 23.7 | 10.6 | ..... | ..... | 3 | NNE | ..... | 0.004 | 0.1 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.40 | 746.7 | 30.30 | 769.7 | 52.5 | 11.4 | 73 | NNW | 6.3 | 2.8 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 30.19 | 766.9 | 30.39 | 771.9 | 57.7 | 14.3 | 55 | SE | ..... | ..... | 2 | ..... | 4 | E | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 30.13 | 765.4 | 30.39 | 772.0 | 55.2 | 12.9 | 44 | NE | 6.3 | 2.8 | ..... | ..... | 4 | NE | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 30.26 | 768.6 | 30.34 | 770.5 | 54.5 | 12.5 | 55 | NNE | 12.5 | 5.6 | ..... | ..... | 4 | NNE | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.82 | 757.3 | 30.37 | 771.4 | 55.9 | 13.3 | 32 | NE | 4.9 | 2.2 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.23 | 767.8 | 30.25 | 768.3 | 41.0 | 5.0 | 77 | SSW | 5.0 | 2.2 | ..... | ..... | 10n | ..... | ..... | 0.005 | 0.13 | Light rain... | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 30.01 | 762.2 | 30.23 | 767.8 | 38.8 | 3.8 | 90 | NE | 4.3 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0.490 | 10.45 | Raining..... | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 30.04 | 763.0 | 30.11 | 764.8 | 41.6 | 5.3 | 81 | SSE | 4.0 | 1.8 | ..... | ..... | 9ck | ..... | ..... | 0 | 0 | Cloudy..... | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | P. Ceballos. |
| Guadalajara | 25.06 | 636.5 | 30.10 | 764.6 | 52.7 | 11.5 | 47 | SW | ..... | ..... | 1 | 0 | 9 | ..... | SW | 0 | 0 | Very cloudy | Prof. L. Perez. |
| Leon | 24.43 | 620.7 | 30.04 | 763.1 | 56.8 | 13.8 | 62 | NW | ..... | ..... | 2 | 2cs | 0 | SW | ..... | 0 | 0 | Clear..... | Prof. M. Leal |
| Mexico, Central Obs'y | 23.06 | 585.7 | 30.13 | 765.4 | 49.8 | 9.9 | 58 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine..... | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 57.7 | 14.3 | 69 | SW | ..... | ..... | 1 | 0 | 8k | ..... | SW | 0 | 0 | Misty..... | M. V. de Leon, M. E. |
| Tlacotalpam | 30.00 | 762.1 | 30.02 | 762.4 | 68.5 | 20.3 | 88 | SE | ..... | ..... | 2 | 0 | 5 | ..... | S | 0 | 0 | Clear..... | M. M. Cházaro. |
| San Luis Potosi | 24.19 | 614.4 | 30.18 | 766.7 | 52.0 | 11.1 | 76 | SSE | ..... | ..... | 1 | 4 | 1 | W | N | 0 | 0 | ⅛ clouded... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear..... | Prof. P. Spina. |
| Puebla, (Catholic Institute) | 23.38 | 593.7 | 30.14 | 765.5 | 46.4 | 8.0 | 62 | ENE | 0.4 | 0.2 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. Banda, C. E. |
| Colima | 28.39 | 721.0 | 30.08 | 762.7 | 75.9 | 24.4 | 77 | Calm | ..... | ..... | 0 | 0 | 5 | ..... | W | 0 | 0 | ⅛ clouded... | Antonio Guerra y Guerra. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1893 m., or 6210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2201m., or 7220.9 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 532 m., or 1745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.49 | 774.4 | 30.49 | 774.4 | 49.5 | 9.7 | ..... | W | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 30.35 | 771.0 | 30.41 | 772.4 | ..... | ..... | ..... | SSW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 30.37 | 771.4 | 30.37 | 771.4 | 42.8 | 6.0 | ..... | SSW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 30.44 | 773.3 | 30.44 | 773.3 | 50.5 | 10.3 | 82 | WSW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.36 | 771.1 | 30.41 | 773.3 | 54.5 | 12.5 | 62 | SW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | Slightly cl'dy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the cooperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.83 | 757.7 | 29.89 | 759.1 | 48.2 | 6.2 | 85 | SSW | 28.4 | 12.7 | ..... | ..... | 1 | ..... | ..... | 0.283 | 7.2 | ..... | |
| Brönö | 29.36 | 745.8 | 29.40 | 746.8 | 42.6 | 6.0 | 62 | SSW | 22 | 10 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.65 | 753.2 | 29.80 | 756.9 | 43.7 | 6.5 | 64 | SSW | 18 | 8 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.27 | 743.5 | 29.32 | 744.6 | 32.4 | 0.2 | 67 | SW | 31 | 14 | ..... | ..... | 10 | ..... | ..... | 0.102 | 2.6 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.97 | 761.2 | 30.16 | 766.1 | 60 8 | 16.0 | 89 | SSE | 5.6 | 2.5 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.38 | 746.2 | 30.40 | 772.1 | 64.4 | 18.0 | 46 | ESE | 6.9 | 3.1 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.21 | 767.4 | 30.30 | 769.6 | 61.2 | 17.9 | 54 | SW | 8.7 | 3.9 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 30.01 | 762.2 | 30.37 | 771.4 | 58.6 | 14.8 | 68 | NE | 7.4 | 3.3 | ..... | ..... | 4 | SSE | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.19 | 766.7 | 30.26 | 768.5 | 62.6 | 17.0 | 86 | SSE | 21.7 | 9.7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | A. G. da Silva Costa Com'd.t. |
| D. Fernando | ..... | ..... | ..... | A. M. de Sande, Com'd't. |
| India | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | 2 | E | D. clouds | A. J. de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | J. T. d'Oliveria, Com'd't |
| Rio Lima, Capt. S. C. da SilvaCosta, N. 14° 48', W. 23° 06' | 4 | Var. | Blue sky | A. Ferreira, 2nd Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | 1 | ..... | D. clouds | J. M. T. Guimaraes, Com'd't. |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.79 | 756.7 | 30.23 | 767.8 | 45.9 | 7.7 | 68 | WNW | 13 | 6 | ..... | ..... | 1c | ..... | ..... | ..... | ..... | ..... | Astronomical Obs |
| Wilna | 29.57 | 751.0 | 30.00 | 761.9 | 38.7 | 3.7 | 62 | WNW | 9 | 4 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.76 | 755.8 | 30.01 | 762.3 | 31.6 | — 0.2 | 74 | N | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.91 | 759.8 | 29.93 | 760.2 | 30.2 | — 1.0 | 69 | ENE | 9 | 4 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.37 | 746.1 | 30.04 | 762.9 | 35.8 | 2.1 | 69 | W | 13 | 6 | ..... | ..... | 10cs;k; | ks] | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 30.11 | 764.9 | 30.19 | 766.7 | 39.6 | 4.2 | 68 | NNW | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.08 | 764.1 | 30.10 | 764.6 | 34.9 | 1.6 | 75 | N | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.17 | 741.0 | 29.74 | 755.5 | 28.8 | — 1.8 | 80 | S | 7 | 3 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.78 | 756.3 | 29.99 | 761.7 | 35.8 | 2.1 | 68 | NW | 4 | 2 | ..... | ..... | 2c | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.88 | 759.0 | 29.90 | 759.5 | 24.1 | — 4.4 | 89 | E | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Sselliwerstow. |
| Tiflis | 28.45 | 722.5 | 29.86 | 758.4 | 53.2 | 11.8 | 43 | NW | 18 | 8 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 29.94 | 760.4 | 29.85 | 758.2 | 42.8 | 6.0 | 85 | NW | 7 | 3 | ..... | ..... | 10s;r | ..... | ..... | Blank | Blank | ..... | Capt. Wisganow. |
| Krotkowo* | 29.49 | 749.0 | 29.99 | 761.8 | 21.4 | — 5.9 | 80 | N | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.70 | 754.4 | 29.99 | 761.7 | 19.0 | — 7.2 | 85 | S | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.04 | 737.7 | 30.03 | 762.8 | 34.7 | 1.5 | 45 | Calm | 0 | 0 | ..... | ..... | 2cs | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.41 | 747.0 | 29.84 | 752.9 | 59.5 | 15.3 | 16 | SW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.19 | 716.0 | 29.85 | 758.2 | 64.0 | 17.8 | 28 | NW | 22 | 10 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.63 | 752.5 | 30.17 | 766.2 | 14.4 | — 9.8 | 74 | Calm | 0 | 0 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeniseisk | 29.73 | 755.1 | 30.04 | 762.9 | 24.3 | — 4.3 | 64 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 30.27 | 768.8 | 30.41 | 772.4 | 31.6 | — 0.2 | 31 | NW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend 455? m., or 1,492.7? ft., Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E. 48° 34'.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.36 | 771.2 | 30.47 | 773.9 | 55.6 | 13.1 | 64 | ESE | 3.2 | 1.44 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 30.31 | 769.9 | 30.37 | 771.3 | 70.0 | 21.1 | 47 | E | 2.2 | 0.98 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.42 | 696.5 | ..... | ..... | 54.0 | 12.2 | 74 | NE | 4.9 | 2.18 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 28.18 | 715.7 | ..... | ..... | 57.6 | 14.2 | 61 | SE | 8.2 | 3.67 | ..... | 0 | 3 | ..... | ..... | 0 | 0 | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 30.28 | 769.1 | 30.43 | 772.9 | 62.8 | 17.1 | 55 | NE | 6.7 | 3.03 | ..... | 3 | 6 | W | ..... | 0 | 0 | Almost cov'd | Olayo-Diaz, Director. |
| Santiago, Met. Obs'y. | 29.44 | 747.8 | 30.34 | 770.7 | 60.1 | 15.6 | 68 | SE | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0.177 | 4.5 | Clear | R. Gil Villanueva, Dir |
| Sub-Series | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 30.09 | 764.4 | 30.16 | 766.0 | 69.3 | 20.7 | 82 | E | 2.9 | 1.3 | ..... | 0 | 1k | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.91 | 759.9 | 29.97 | 761.3 | 79.7 | 26.5 | 67 | S | 0 | 0 | ..... | ..... | 2cs | ..... | E | 0.21 | 5.6 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.24 | 768.1 | 30.34 | 770.7 | 60 3 | 15.7 | 58 | ESE | 21.8 | 9.8 | ..... | 0 | 10 | ..... | SE | 0 | 0 | ..... | Capt. C. Pujazon, R. N. Dir. |
| San Juan de Porto Rico, W. I. | 29.98 | 761.5 | 30.07 | 763.8 | 75.9 | 24.4 | 78 | E | 9.4 | 4.21 | ..... | 3k | 8kn | E | E | 0.463 | 11.50 | Cloudy | Leonardo de Tejeda, Ch't. Eng'r |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.79 | 756.6 | 29.83 | 757.6 | 24.4 | — 4.2 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.71 | 754.7 | 29.76 | 756.0 | 33 1 | 0.6 | 64 | SW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.68 | 753.8 | 29.73 | 755.1 | 37.8 | 3.2 | 83 | S | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.77 | 756.2 | 29.95 | 760.7 | 42.8 | 6.0 | 94 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.92 | 760 0 | 29.98 | 761.5 | 38.5 | 3.6 | 83 | W | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.85 | 758.1 | 29.92 | 760 0 | 38.7 | 3.7 | 70 | SSW | 13.4 | 6.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 29.06 | 738.2 | 30.51 | 775.0 | 47.1 | 8.4 | 54 | NNE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Zurich | 28.84 | 732.5 | 30.51 | 775 0 | 43.7 | 6.5 | 63 | W | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +13.2 mm.; Thermometer, +0.7 cent.; Relative Humidity, —9 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.06 | 763.5 | 41.0 | 5.0 | 83 | NE | 31 | 14.0 | ..... | 10 | ..... | NE | ..... | 0.433 | 11.0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.24 | 768.0 | 66.6 | 19.2 | ..... | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| Valona | ..... | ..... | 30.17 | 766.4 | 51.3 | 10.7 | ..... | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.09 | 754.1 | 29.81 | 757.1 | 55.9 | 13.3 | 81 | SW | ..... | ..... | 2 | ..... | 10n | ..... | SW | 1.08 | 27.4 | Raining | Prof. C. V. A. Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.78 | 755 1 | 30.05 | 763.3 | 29 | — 1.7 | ..... | E | 1 | 0.4 | ..... | ..... | 10s | ..... | W | 0.01 | 0.3 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 30.30 | 769.6 | 30.36 | 771 1 | 10 | —12.2 | 86 | E | 1 | 0.4 | ..... | 8ck | 2ks | NW | NW | 0 | 0 | Fair | G. A. Blair. |
| Charlottetown, P. E. Island | 30.29 | 767.1 | 30.24 | 768.1 | 18 | — 7.8 | 92 | N | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.81 | 757.2 | 30.01 | 762.2 | 29.0 | — 1.7 | 96 | NE | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0.04 | 1.0 | Overcast | James Smith, M. A |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 29.46 | 748.3 | 29.50 | 749.3 | 37.1 | 2.8 | 80 | SW | ..... | ..... | ..... | 7ck | 0 | ..... | ..... | 0.05 | 1.3 | Fair | W. H. Bevis. |
| *Father Point, Quebec | 30.26 | 768.6 | 30.28 | 769.1 | 17 | — 8.3 | 80 | E | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | J. McWilliams. |
| Fredericton, N. B | 30.31 | 769.9 | 30.38 | 771.6 | 8.6 | —13.0 | 91 | NW | 2 | 0.9 | ..... | 10ck | 0 | ..... | ..... | 0 | 0 | Overcast | Prof. Harrison. |
| *Fort Garry Manitoba | 28.52 | 724.4 | 29.36 | 745.7 | 32 | 0.0 | 100 | E | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0.070 | 1.78 | Light snow | James Stewart. |
| Granton, Ontario | 28.79 | 731.3 | 29.91 | 759.7 | 38 | 3.3 | ..... | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 30.01 | 762.2 | 30.15 | 765.8 | 20 | — 6.7 | 76 | NW | 20 | 8.9 | ..... | 1c | 0 | NW | ..... | 0 | 0 | Clear | F. Allison, M. A. |
| Hamilton, Ontario | 29.60 | 751.8 | 29.98 | 761.5 | 30.3 | — 0.9 | 89 | NE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.66 | 753.4 | 30.01 | 762.2 | 35 | 1.7 | 87 | E | 4 | 1.8 | ..... | 10c | 0 | Calm | ..... | 0 | 0 | Fair | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.96 | 761.0 | 30.00 | 762.0 | 24.8 | — 4.0 | 93 | N | 14 | 6.3 | ..... | ..... | 10n | ..... | ..... | 0.70 | 17.8 | Overcast | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 29.88 | 758.9 | 30.09 | 764.3 | 31 | — 0.6 | 87 | SE | 16 | 7.2 | ..... | ..... | 10n | ..... | ..... | 0.17 | 4.3 | Sleeting | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.14 | 740.1 | 29.85 | 758.2 | 33 | 0.6 | 89 | SE | 15 | 6.7 | ..... | 2ck | 2ks | W | W | 0 | 0 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 29.19 | 741.4 | 29.97 | 761.2 | 32.7 | 0.4 | 85 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | J. F. Jeffers, B. A |
| Port Dover, Ontario | 29.25 | 742.9 | 29.97 | 761.2 | 36 | 2.2 | 95 | S | 6 | 2.7 | ..... | 5c | 0 | SW | ..... | 0 | 0 | Fair | H. Morgan. |
| Port Hastings, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Peter Grant. |
| Port Stanley, Ontario | 29.30 | 744.2 | 29.95 | 760.7 | 40 | 4.4 | 90 | SW | 5 | 2.2 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Hazy | M. Payne. |
| *Quebec, Quebec | 29.91 | 759.7 | 30.25 | 768.8 | 22 | — 5.6 | 93 | NE | ..... | ..... | 5 | ..... | 10n | ..... | NE | 0.05 | 1.3 | Cloudy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.50 | 749 3 | 29.98 | 761.5 | 25 | — 3.9 | 88 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | Inap. | Inap. | Cloudy | W. H. McIntyre. |
| St. Andrews, N. B | 30.26 | 768.6 | 30.31 | 769.9 | 22 | — 5.6 | 58 | NE | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| St. John, N. B | 30.16 | 766.1 | 30.33 | 770.4 | 21 | — 5.9 | 71 | N | 11 | 4.9 | ..... | ..... | 9ks | ..... | ..... | 0 | 0 | Cloudy | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.09 | 738.9 | 29.81 | 757.2 | 44 | 6.7 | 86 | S | 16 | 7.2 | ..... | Haze | 0 | ..... | ..... | Inap. | Inap. | Hazy | K. Stewart. |
| Stayner, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Inap. | Inap. | ..... | R. J. Cole. |
| Stratford, Ontario | 28.62 | 726.9 | 29.93 | 760.2 | 36.4 | 2.4 | 85 | S | 5 | 2.2 | ..... | 0 | 5s | ..... | ..... | 0 | 0 | Fair | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.97 | 761.2 | 30.01 | 762.2 | 23 | — 5.0 | 93 | N | 24 | 10.7 | ..... | ..... | 10n | ..... | ..... | 0.41 | 10.4 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.55 | 750.6 | 29.95 | 760.7 | 30 | — 1.1 | 88 | NE | 5 | 2.2 | ..... | 2cs | Haze | ..... | ..... | 0.08 | 2.0 | Fair | Magnetic Observatory |
| Windsor, N. S | 30.16 | 766.1 | 30.26 | 768.6 | 20.0 | — 6.7 | 70 | NW | 10 | 4.5 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Fine | Prof. John E. Orman |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 34.0 | 1.1 | 100 | NE | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.70 | 17.8 | Raining | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters, Stratford, 1,182 ft., or 360.3 meters.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Cloud. Amount. Up'er 0—10. | Cloud. Amount. Low'r 0—10. | Cloud. Direction. Upper. From— | Cloud. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.98 | 761.5 | 30.22 | 767.6 | 32 | 0.0 | 79 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Cloudy | |
| Alpena, Michigan | 29.04 | 737.6 | 29.68 | 753.9 | 37 | 2.8 | 81 | Calm | 0 | 0 | ..... | 5c | 0 | Calm | ..... | 0.02 | 0.5 | Fair | |
| Atlanta, Georgia | 29.09 | 738.9 | 30.25 | 768.3 | 55 | 12.8 | 80 | SE | 6 | 2.7 | ..... | 2c | Fog | Calm | Calm | 0 | 0 | Foggy | |
| Atlantic City, New Jersey | 30.32 | 770.1 | 30.34 | 770.6 | 37 | 2.8 | 81 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Augusta, Georgia | 30.12 | 765.0 | 30.30 | 769.6 | 55 | 12.8 | 93 | SE | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Baltimore, Maryland | 30.26 | 768.6 | 30.31 | 769.9 | 36 | 2.2 | 80 | SE | 2 | 0.9 | ..... | Haze | Fog | Calm | Calm | 0.01 | 0.3 | Foggy | |
| Barnegat, New Jersey | 30.29 | 769.4 | 30.31 | 769.9 | 37 | 2.8 | 81 | S | 10 | 4.5 | ..... | Haze | 0 | Calm | ..... | 0.14 | 3.6 | Clear | |
| Bismarck, Dakota | 27.66 | 702.6 | 29.52 | 749.8 | 33 | 0.6 | 100 | NW | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0.40 | 12.4 | Cloudy | |
| Boerne, Texas | 28.53 | 724.6 | 29.82 | 757.4 | 63 | 17.2 | 78 | SE | ..... | ..... | 4 | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Boise City, Idaho | 26.90 | 683.2 | 29.86 | 758.4 | 32 | 0.0 | 89 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.85 | 21.6 | Heavy snow | |
| Boston, Massachusetts | 30.20 | 767.1 | 30.36 | 771.1 | 27 | — 2.8 | 88 | S | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | 0.06 | 1.5 | Sleeting | |
| Brackettville, Texas | 28.86 | 733.0 | 29.88 | 758.9 | 64 | 17.8 | 94 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0 | 0 | Threatening | |
| Breckenridge, Minnesota | 28.42 | 721.9 | 29.41 | 747.0 | 35.5 | 1.9 | 95 | W | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0.08 | 2.0 | Cloudy | |
| Brownsville, Texas | 29.92 | 760.0 | 29.96 | 761.0 | 70 | 21.1 | 85 | SE | 6 | 2.7 | ..... | 4cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Buffalo, New York | 29.24 | 742.7 | 29.93 | 760.2 | 48.5 | 9.2 | 63 | S | 15 | 6.7 | ..... | 5c | Haze | W | Calm | 0.06 | 1.5 | Fair | |
| Burkes, Arizona | .. | .... | ..... | ..... | 49 | 9.4 | 18 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.85 | 758.2 | 30.15 | 765.8 | 31 | — 0.6 | 79 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | W | 0.05 | 1.3 | Cloudy | |
| Cairo, Illinois | 29.63 | 752.6 | 30.01 | 762.2 | 64 | 17.8 | 63 | S | 16 | 7.2 | ..... | 5c | Haze | SW | ..... | 0 | 0 | Fair | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.21 | 640.3 | 30.01 | 762.2 | 36 | 2.2 | 61 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 36 | 2.2 | 45 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.52 | 699.0 | 30.09 | 764.3 | 42 | 5.6 | 91 | Calm | 0 | 0 | ..... | 5k | 0 | SW | ..... | 0.13 | 3.3 | Fair | |
| Cape Hatteras, N. Carolina | 30.32 | 770.1 | 30.33 | 770.4 | 50 | 10.0 | 93 | NE | 1 | 0.4 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Cape Henry, Virginia | 30.27 | 768.8 | 30.29 | 769.4 | 45 | 7.2 | 76 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Cape Lookout, N. Carolina | 30.31 | 769.9 | 30.32 | 770.1 | 52 | 11.1 | 93 | S | 8 | 3.6 | ..... | 5k | Haze | W | S | 0 | 0 | Hazy | |
| Cape May, New Jersey | 30.27 | 768.8 | 30.30 | 769.6 | 39 | 3.9 | 82 | SE | 8 | 3.6 | ..... | 5ck | Haze | Calm | ..... | 0 | 0 | Fair | |
| Castroville, Texas | 29.20 | 741.7 | 29.90 | 759.4 | 66 | 18.9 | 84 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 30.26 | 768.6 | 30.31 | 769.9 | 57 | 13.9 | 94 | SW | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Cheyenne, Wyoming | 23.78 | 604.0 | 29.72 | 754.9 | 36 | 2.2 | 80 | W | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.03 | 737.3 | 29.70 | 754.4 | 56 | 13.3 | 63 | S | 11 | 4.9 | ..... | 0 | 5s | ..... | S | 0 | 0 | Fair | |
| Cincinnati, Ohio | 29.41 | 747.0 | 30.06 | 763.5 | 57 | 13.9 | 55 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cleveland, Ohio | 29.24 | 742.7 | 29.95 | 760.7 | 58 | 14.4 | 48 | SE | 15 | 6.7 | ..... | Haze | Haze | Calm | Calm | 0.16 | 4.1 | Hazy | |
| Coleman City, Texas | 28.18 | 715.8 | 29.82 | 757.4 | 59 | 15.0 | 88 | SW | 4 | 1.8 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy | |
| Columbus, Ohio | 29.20 | 741.7 | 30.03 | 762.8 | 55 | 12.8 | 56 | S | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corpus Christi, Texas | 28.08 | 713.2 | 29.73 | 755.1 | 57 | 13.9 | 72 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.52 | 749.8 | 29.98 | 761.5 | 66 | 18.9 | 84 | SE | 11 | 4.9 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.03 | 737.3 | 29.64 | 752.8 | 58 | 14.4 | 64 | SW | 10 | 4.5 | ..... | 5cs | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Deadwood, Dakota | 24.96 | 634.0 | ..... | ..... | 34 | 1.1 | 61 | S | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Decatur, Texas | 28.76 | 730.5 | 29.90 | 759.4 | 65 | 18.3 | 84 | S | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.11 | 739.4 | 29.89 | 759.2 | 65 | 18.3 | 78 | S | 14 | 6.3 | ..... | 10k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.58 | 624.3 | 29.80 | 756.9 | 28 | — 2.2 | 77 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Des Moines, Iowa | 28.77 | 730.7 | 29.63 | 752.6 | 50 | 10.0 | 86 | W | 1 | 0.4 | ..... | 5c | 0 | NW | ..... | 0.32 | 8.1 | Fair | |
| Detroit, Michigan | 29.19 | 741.4 | 29.86 | 758.4 | 48 | 8.9 | 70 | SW | 6 | 2.7 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Dodge City, Kansas | 27.32 | 693.9 | 29.64 | 752.8 | 36 | 2.2 | 80 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 28.93 | 734.8 | 29.61 | 752.1 | 52 | 11.1 | 86 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0.08 | 2.0 | Foggy | |
| Duluth, Minnesota | 28.76 | 730.5 | 29.43 | 747.5 | 34 | 1.1 | 100 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | NE | 0.33 | 8.4 | Light rain | |
| Eagle Pass, Texas | 29.14 | 740.1 | 29.86 | 758.4 | 65 | 18.3 | 84 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Eastport, Maine | 30.25 | 768.3 | 30.32 | 770.1 | 24 | — 4.4 | 48 | NE | 6 | 2.7 | ..... | 5ck | 5s | NW | Calm | 0 | 0 | Cloudy | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 68 | 20.0 | 95 | S | ..... | ..... | 4 | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.25 | 666.7 | ..... | ..... | 45 | 7.2 | 30 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.25 | 742.9 | 29.96 | 761.0 | 53 | 11.7 | 67 | S | 13 | 5.8 | ..... | 0 | Haze | ..... | Calm | 0.12 | 3.0 | Clear | |
| Escanaba, Michigan | 28.94 | 735.1 | 29.60 | 751.8 | 36 | 2.2 | 95 | SW | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | 0.23 | 5.8 | Light rain | |
| Florence, Arizona | 28.60 | 726.4 | 30.20 | 767.1 | 43 | 6.1 | 43 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.52 | 699.0 | ..... | ..... | 26 | — 3.3 | 88 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort Craig, New Mexico | 25.52 | 648.2 | 29.58 | 751.3 | 35 | 1.7 | 44 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.17 | 639.3 | 30.13 | 765.3 | 44 | 6.7 | 24 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.32 | 744.7 | 29.84 | 757.9 | 65 | 18.3 | 73 | SW | 16 | 7.2 | ..... | 5k | 2ks | SW | SW | 0 | 0 | Fair | |
| Fort Griffin, Texas | 28.62 | 726.9 | 29.86 | 758.2 | 62 | 16.7 | 77 | SE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 26.99 | 685.5 | ..... | ..... | 30 | — 1.1 | 89 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort McKavett, Texas | 27.73 | 704.3 | 29.62 | 752.3 | 58 | 14.4 | 94 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.65 | 727.7 | 29.75 | 755.6 | 52 | 11.1 | 86 | SE | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Fort Stevenson, Dakota | 27.67 | 702.8 | ..... | ..... | 32 | 0.0 | 89 | W | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0.73 | 18.5 | Cloudy | |
| Fredericksburg, Texas | 28.28 | 718.3 | 29.82 | 757.4 | 62 | 16.7 | 94 | S | 10 | 4.5 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 30.03 | 762.8 | 30.07 | 763.8 | 66 | 18.9 | 95 | SE | 7 | 3.1 | ..... | 0 | 8s | ..... | SE | 0 | 0 | Cloudy | |
| Graham, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Grand Haven, Michigan | 29.07 | 738.4 | 29.71 | 754.6 | 51 | 10.6 | 59 | SW | 28 | 12.5 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Indianapolis, Indiana | 29.15 | 740.4 | 29.91 | 759.7 | 58 | 14.4 | 48 | SE | 6 | 2.7 | ..... | 0 | 8ks | ..... | SW | 0 | 0 | Cloudy | |
| Indianola, Texas | 30.01 | 762.2 | 30.03 | 762.8 | 67 | 19.4 | 89 | S | 11 | 4.9 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| Jacksboro, Texas | 28.89 | 733.8 | 30.00 | 762.0 | 61 | 16.1 | 77 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.28 | 769.1 | 30.31 | 769.9 | 55 | 12.8 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.04 | 737.6 | 29.62 | 752.3 | 62 | 16.7 | 61 | S | 19 | 8.5 | ..... | 9k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Key West, Florida | 30.16 | 766.1 | 30.20 | 767.1 | 69 | 20.6 | 80 | E | 11 | 4.9 | ..... | 5k | 0 | E | ..... | 0 | 0 | Fair | |
| Kittyhawk North Carolina | 30.29 | 769.4 | 30.31 | 769.9 | 45 | 7.2 | 92 | Calm | 0 | 0 | ..... | 10ck | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Knoxville, Tennessee | 29.23 | 742.4 | 30.25 | 768.3 | 49 | 9.4 | 71 | Calm | 0 | 0 | ..... | Haze | Sm'e | ..... | ..... | 0 | 0 | Smoky | |
| La Crosse, Wisconsin | 28.80 | 731.5 | 29.50 | 749.3 | 54 | 12.2 | 67 | SW | 16 | 7.2 | ..... | 2k | 0 | SW | ..... | 0.05 | 1.3 | Clear | |
| La Mesilla, New Mexico | 26.10 | 662.9 | 30.25 | 768.3 | 45 | 7.2 | 60 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.49 | 749.0 | 29.82 | 757.4 | 70 | 21.1 | 75 | SE | 6 | 2.7 | ..... | 10ck | 0 | S | ..... | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 28.86 | 733.0 | 29.67 | 753.6 | 60 | 15.6 | 77 | NW | 7 | 3.1 | ..... | 0 | 5ks | ..... | NW | Inap. | Inap. | Fair | |
| Los Angeles, California | 29.82 | 757.4 | 30.17 | 766.3 | 48.0 | 8.9 | 85 | N | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.49 | 749.0 | 30.04 | 762.0 | 62 | 16.7 | 46 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.57 | 751.1 | 30.28 | 769.1 | 41 | 5.0 | 74 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Madison, Wisconsin | 28.66 | 728.0 | 29.61 | 752.1 | 53 | 11.7 | 86 | S | 9 | 4.0 | ..... | ..... | 10ks | ..... | W | Inap. | Inap. | Cloudy | |
| Marquette, Michigan | 28.82 | 732.0 | 29.51 | 749.5 | 37 | 2.8 | 81 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.34 | 8.6 | Cloudy | |
| Mason, Texas | 28.33 | 719.6 | 30.05 | 763.3 | 64 | 17.8 | 83 | SW | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.77 | 756.1 | 30.08 | 764.0 | 63 | 17.2 | 73 | S | 6 | 2.7 | ..... | 2k | 5s | S | S | 0 | 0 | Fair | |
| Milwaukee, Wisconsin | 28.97 | 735.8 | 29.68 | 753.9 | 53 | 11.7 | 86 | SW | 19 | 8.5 | ..... | ..... | 10n | ..... | Calm | 0.10 | 2.5 | Light rain | |
| Mobile, Alabama | 30.20 | 767.1 | 30.24 | 768.1 | 54 | 12.2 | 96 | S | 2 | 0.9 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Montgomery, Alabama | 30.04 | 763.0 | 30.28 | 769.1 | 52 | 11.1 | 86 | Calm | 0 | 0 | ..... | 5c | Fog | W | Calm | 0 | 0 | Fair | |
| Morgantown, West Virginia | 29.02 | 738.1 | 30.12 | 765.0 | 50 | 10.0 | 72 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Mt. Washington, N. H. | 23.70 | 602.0 | 30.06 | 763.5 | 15 | —10.6 | 100 | NW | 48 | 21.5 | ..... | ..... | Fog | ..... | NW | 0 | 0 | Foggy | |
| Nashville, Tennessee | 29.61 | 752.1 | 30.14 | 765.5 | 57 | 13.9 | 69 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 30.21 | 767.3 | 30.33 | 770.4 | 37 | 2.8 | 71 | S | 5 | 2.2 | ..... | 5ck | 5s | NW | NW | 0 | 0 | Cloudy | |
| New London, Connecticut | 30.30 | 769.6 | 30.35 | 770.9 | 34 | 1.1 | 79 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| New Orleans, Louisiana | 30.11 | 764.8 | 30.17 | 766.3 | 56 | 13.3 | 94 | E | 4 | 1.8 | ..... | 5ck | Fog | Calm | Calm | 0 | 0 | Fair | |
| Newport, Rhode Island | 30.30 | 769.6 | 30.36 | 771.1 | 33 | 0.6 | 84 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| New York, New York | 30.15 | 765.8 | 30.34 | 770.6 | 33 | 0.6 | 69 | SW | 8 | 3.6 | ..... | 0 | Haze | ..... | Calm | 0.07 | 1.8 | Clear | |
| Norfolk, Virginia | 30.26 | 768.6 | 30.32 | 770.1 | 47 | 8.3 | 77 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 26.87 | 682.6 | 29.48 | 748.8 | 31 | — 0.6 | 69 | W | 6 | 2.7 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.53 | 750.0 | 29.58 | 751.3 | 34.2 | 1.2 | 90 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 1.14 | 29.0 | Cloudy | |
| Omaha, Nebraska | 28.56 | 725.4 | 29.64 | 752.8 | 46 | 7.8 | 69 | W | 10 | 4.5 | ..... | 0 | 5s | ..... | NW | 0.78 | 19.8 | Fair | |
| Oswego, New York | 29.70 | 754.4 | 30.03 | 762.8 | 39 | 3.9 | 73 | SE | 12 | 5.4 | ..... | 5c | 0 | NW | ..... | 0.03 | 0.8 | Fair | |
| Pembina, Dakota | 28.48 | 723.4 | 29 32 | 744.7 | 32 | 0.0 | 100 | NW | 8 | 1.3 | ..... | ..... | 10n | ..... | Calm | 0.14 | 3.6 | Light snow. | |
| Philadelphia, Pa | 30.26 | 768.6 | 30.32 | 770.1 | 35 | 1.7 | 80 | S | 4 | 1.8 | ..... | 5ck | Sm'e | NW | Calm | 0.01 | 0.3 | Fair | |
| Phœnix, Arizona | 28.93 | 734.8 | 30.78 | 781.8 | 46 | 7.8 | 54 | E | 1 | 0 4 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear. | |
| Pike's Peak, Colorado | 17.40 | 442.5 | 29.67 | 753.6 | 4 | —15.6 | 22 | SW | 48 | 21.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Ploche, Nevada | 23.03 | 607.8 | 29.70 | 754.4 | 30 | — 1.1 | 68 | S | 12 | 5.4 | ..... | 2c | 0 | SW | ..... | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 29.28 | 743.7 | 30.12 | 765.0 | 38 | 3.3 | 91 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Port Huron, Michigan | 29.16 | 740.7 | 29.81 | 757.2 | 49 | 9.4 | 78 | S | 16 | 7.2 | ..... | 5cs | Sm'e | W | ..... | 0.02 | 0.5 | Fair | |
| Portland, Maine | 30.30 | 769.6 | 30.35 | 770.9 | 31 | — 0.6 | 79 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Portland, Oregon | 29.64 | 752.8 | 29.74 | 755.4 | 37.6 | 3.1 | 90 | S | 8 | 3.6 | ..... | 0 | 8n | ..... | SW | 0.80 | 20.3 | Light rain | |
| Prescott, Arizona | 24.74 | 628.4 | 30.10 | 764.5 | 25 | — 3.9 | 62 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Punta Rassa, Florida | 30.25 | 768.3 | 30.27 | 768.8 | 65 | 18.3 | 78 | NE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Red Bluff, California | 29.53 | 750.0 | 29.89 | 759.2 | 48 | 8.9 | 92 | SE | 24 | 10.7 | ..... | ..... | 10s | ..... | Calm | 0.42 | 10.7 | Cloudy | |
| Rio Grande City, Texas | 29.78 | 756.4 | 29.99 | 761.7 | 68 | 20.0 | 90 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Rochester, New York | 29.38 | 746.0 | 29.95 | 760.7 | 44 | 6.7 | 84 | SW | 15 | 6.7 | ..... | 5c | Haze | SE | ..... | 0.12 | 3.0 | Fair | |
| Roseburg, Oregon | 29.25 | 742.9 | 29.82 | 757.4 | 37.1 | 3.1 | 90 | NW | 2 | 0.9 | ..... | ..... | 10s | ..... | SW | 0.71 | 18.0 | Cloudy | |
| Sacramento, California | 29.05 | 760.7 | 30.04 | 763.0 | 50 | 10.0 | 82 | SE | 12 | 5.4 | ..... | ..... | 10n | ..... | S | 0.15 | 3.8 | Light rain | |
| St. Louis, Missouri | 29.28 | 743.7 | 29.84 | 757.9 | 68 | 17.2 | 67 | S | 19 | 8.5 | ..... | ..... | 10s | ..... | SW. | Inap | Inap. | Cloudy | |
| St. Marks, Florida | 30.26 | 768.6 | 30.28 | 769.1 | 50 | 10.0 | 93 | Calm | 0 | ..... | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear. | |
| St. Paul, Minnesota | 28.62 | 726.9 | 29.43 | 747.5 | 44 | 6.7 | 75 | SW | 3 | 1.3 | ..... | ..... | 10s | ..... | SW | 0.05 | 1.3 | Cloudy | |
| Salt Lake City, Utah | 25.43 | 645.9 | 29.76 | 755.9 | 44 | 6.7 | 37 | SE | 21 | 9.4 | ..... | ..... | 10ks | ..... | SW | 0.03 | 0.8 | Cloudy | |
| San Antonio, Texas | 29.29 | 744.0 | 29.86 | 758.4 | 67 | 19.4 | 84 | SE | 4 | 1.8 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Cloudy | |
| San Diego, California | 30.13 | 765.3 | 30.21 | 767.3 | 51.1 | 10.8 | 93 | NE | 4 | 1.8 | ..... | 5k | 0 | NW | ..... | Inap | Inap. | Fair | |
| Sandusky, Ohio | 29.26 | 743.2 | 29.92 | 760.0 | 54 | 12.2 | 61 | SW | 25 | 11.2 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Sandy Hook, New Jersey | 30.28 | 769.1 | 30.31 | 769.9 | 35 | 1.7 | 90 | SW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| San Francisco, California | 29.96 | 761.0 | 30.02 | 762.5 | 54.3 | 12.4 | 89 | SW | 13 | 5.8 | ..... | ..... | 10n | ..... | Calm | 0.59 | 15.0 | Light rain | |
| Santa Fé, New Mexico | 23.17 | 588.5 | 29.71 | 754.6 | 33 | 0.6 | 51 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.23 | 767.8 | 30.33 | 770.4 | 52 | 11.1 | 93 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Shreveport, Louisiana | 29.83 | 757.7 | 30.04 | 763.0 | 64 | 17.8 | 83 | S | 8 | 3.6 | ..... | 0 | 8ks | ..... | SW | 0 | 0 | Fair | |
| Silver City, New Mexico | 24.27 | 616.4 | 30.59 | 777.0 | 35 | 1.7 | 61 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.31 | 769.9 | 30.34 | 770.6 | 56 | 13.5 | 94 | NE | 4 | 1.8 | ..... | 0 | 5s;hz | ..... | sW;Calm | 0 | 0 | Hazy | |
| Springfield, Massachusetts | 30.16 | 766.1 | 30.29 | 769.4 | 34 | 1.1 | 70 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.07 | 1.8 | Cloudy | |
| Stockton, Texas | 26.94 | 684.3 | 29.94 | 760.5 | 42 | 5.6 | 42 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.23 | 767.8 | 30.29 | 769.4 | 33 | 0.6 | 70 | S | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Toledo, Ohio, | 29.20 | 741.7 | 29.87 | 758.7 | 56 | 13.3 | 67 | SW | 16 | 7.2 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Tucson, Arizona | 29.02 | 752.3 | 30.17 | 766.3 | 40 | 4.4 | 40 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.36 | 745.7 | 29.86 | 758.4 | 37.5 | 3.1 | 76 | S | 2 | 0.9 | ..... | 0 | 5s | ..... | S | 0 | 0 | Fair | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 33 | 0.6 | 100 | SE | ..... | ..... | 6 | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Uvalde, Texas | 29.00 | 736.9 | 29.90 | 759.4 | 65 | 18.3 | 84 | E | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.90 | 759.4 | 30.16 | 766.1 | 61 | 16.1 | 77 | SE | 6 | 2.7 | ..... | 0 | 8s | ..... | SE | 0 | 0 | Fair | |
| Virginia City, Montana | 23.79 | 604.3 | 29.27 | 743.4 | 25 | — 3.9 | 87 | W | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.09 | 2.3 | Light snow. | |
| Visalia, California | 29.76 | 755.9 | 30.14 | 765.5 | 46.7 | 8.2 | 83 | SE | 4 | 1.8 | ..... | 10k | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Washington, D. C. | 30.17 | 766.3 | 30.29 | 769.4 | 36 | 2.2 | 85 | E | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0.05 | 1.3 | Foggy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 55 | 1.7 | 61 | SE | ..... | ..... | 1 | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| Wilmington, N. Carolina | 30.22 | 767.6 | 30.30 | 769.6 | 56 | 13.3 | 87 | SE | 3 | 1.3 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Hazy | |
| Winnemucca, Nevada | 25.36 | 644.1 | 29.72 | 754.9 | 42 | 5.6 | 66 | SW | 28 | 12.5 | ..... | ..... | 10s | ..... | SW | Inap. | Inap. | Cloudy | |
| Wood's Holl, Mass | 30.33 | 770.4 | 30.38 | 771.6 | 34 | 1.1 | 90 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0.04 | 1.0 | Cloudy | |
| Yankton, Dakota | 28.37 | 720.6 | 29.64 | 752.8 | 42 | 5.6 | 50 | W | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yuma, Arizona | 29.93 | 760.2 | 30.09 | 764.3 | 53 | 11.7 | 61 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.32 | 719.3 | 29.68 | 753.9 | 62 | 16.7 | 66 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.12 | 765.0 | 30.17 | 766.3 | 71 | 21.7 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.24 | 641.1 | ..... | ..... | 64.6 | 18.1 | 82 | Calm | 0 | 0 | ..... | 5cs;k | 1ks | ..... | ..... | 0.42 | 10.7 | ..... | Thomas Herran. |
| Navassa, W. I | 29.96 | 761.0 | 30.04 | 763.0 | 72 | 22.2 | ..... | E | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0.09 | 2.3 | Raining | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.02 | 762.5 | 30.02 | 762.5 | 82 | 27.8 | 79 | NE | ..... | ..... | 8 | 4k | 5ks | E | ..... | 0.090 | 2.29 | Fair | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,933 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,623 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 626.4 (?) m.; Concho, 1,760 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m., Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,336.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.556 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | BAROMETER. As read off. Inches. | BAROMETER. As read off. Millimeters. | BAROMETER. Attached Thermometer. Fahrenheit. | BAROMETER. Attached Thermometer. Centigrade. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Up'er From— | CLOUDS. Direction. Low'r From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | SEA-SWELL. Character. | SEA-SWELL. Direction from— | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NavyYard,Mare Island,Cal. | 30.06 | 763.5 | 53 | 11.7 | 53 | 11.7 | 93 | SW | 22.8 | 10.2 | ..... | ..... | 10 | ..... | ..... | 1.6 | 41. | ..... | ..... | Raining..... | |
| Navy Yard, Pensacola, Fla. | 30.35 | 770.9 | 60 | 15.6 | 60 | 15.6 | 100 | E | 17 | 7.6 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| NavyYard,Portsmouth,N.H | 30.32 | 770.1 | 53 | 11.7 | 31 | — 0.6 | 89 | SE | 2 | 0.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast.... | |
| Naval Hospital, Yokohama, Japan.....* | 30.10‡ | 764.5‡ | ..... | ..... | 41.5 | 5.3 | 76 | Calm | ..... | ..... | 0 | ..... | 3s | ..... | W | 0 | 0 | ..... | ..... | Fair..... | |
| Adams, Panama ..... | 29.98 | 761.5 | 78 | 25.6 | 75 | 23.9 | ?? | NW | ..... | ..... | 2 | ..... | 2 | ..... | N;W | ..... | ..... | ..... | ..... | Clear..... | |
| Alaska, N 33° 56′, W. 119° 27′..... | 30.24 | 768.1 | 61 | 16.1 | 53 | 11.7 | 86 | WNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Long | NW | Hazy..... | |
| Alliance, Genoa, Italy..... | 30.51‡ | 774.9‡ | ..... | ..... | 61 | 16.1 | 61 | SW | ..... | ..... | 0–1 | ..... | 2 | ..... | N;W | ..... | ..... | ..... | .... ... | Hazy..... | |
| Ashuelot, Hon-Kong, China. ..... | 30.06‡ | 763.5‡ | ..... | ..... | 66 | 18.9 | 89 | E | ..... | ..... | 1 | ..... | 5 | ..... | NE | ..... | ..... | Smooth | ..... | Misty..... | |
| Canonicus, New Orleans, La..... | 30.16 | 766.1 | 45 | 7.2 | 56 | 13.3 | 100 | SE | ..... | ..... | 2 | ..... | 8 | ..... | SE | ..... | ..... | ..... | ..... | Fair ..... | |
| Colorado, New York, N. Y..... | 30.29 | 769.4 | 35 | 1.7 | 35 | 1.7 | 100 | SSW | 4 | 1.8 | ..... | ..... | 2 | ..... | WNW | 0.04 | 1.0 | ..... | ..... | Hazy ..... | |
| Constitution Lisbon, Portugal..... | 30.35‡ | 770.9‡ | ..... | ..... | 66 | 18.9 | 84 | E | ..... | ..... | 1 | ..... | 5 | ..... | Calm | ..... | ..... | ..... | ..... | Pleasant..... | |
| Despatch, Constantinople, Turkey | 30.05‡ | 763.3‡ | ..... | ..... | 44 | 6.7 | 84 | NE | ..... | ..... | 3–5 | ..... | 8 | ..... | NE | ..... | ..... | Smooth | ..... | Rain & hail.. | |
| Franklin, Norfolk, Va..... | 30.48 | 774.2 | 74 | 23.3 | 48 | 8.9 | 78 | S | 6 | 2.7 | ..... | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy..... | |
| Gettysburg, Genoa, Italy ..... | 30.34‡ | 770.6‡ | ..... | ..... | 65 | 18.3 | 78 | SW | ..... | ..... | 1–2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Hartford, Montevideo, Uruguay... | 30.02 | 762.5 | 72 | 22.2 | 68 | 20.0 | 60 | SSE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.01 | 0.3 | Mod'ate | SSE | Cloudy..... | |
| Lackawana, Panama.....*... | 29.70‡ | 754.4‡ | ..... | ..... | 74 | 23.3 | 95 | NW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Michigan, Erie, Pa.....† | 29.96 | 761.0 | ..... | ..... | 54 | 12.2 | 93 | S | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Monocacy. Shanghai, China.....* | 30.31‡ | 769.9‡ | ..... | ..... | 43 | 6.1 | 75 | NE | ..... | ..... | 2 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongehela, Yokohama, Japan ....* | 30.06‡ | 763.5‡ | ..... | ..... | 48 | 8.9 | 70 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C..... | 30.35 | 770.9 | 55 | 12.8 | 53 | 11.7 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | ..... | ..... | Foggy ..... | |
| Onward, Callao, Peru.....† | 30.04 | 763.0 | ..... | ..... | 65 | 18.3 | 94 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Foggy ..... | |
| Palos, Tientsin, China..... | 30.35 | 770.9 | 29 | — 1.7 | 34 | 1.1 | 62 | NW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 35 | 1.7 | 80 | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Pensacola. Talcahuano. Chili ..... | 30.03‡ | 762.8‡ | ..... | ..... | 60 | 15.6 | 94 | N | 5 | 2.2 | ..... | ..... | 5 | ..... | N | 0 | 0 | Smooth | NNW | Fair..... | |
| Powhatan, N. 16° 10′, W. 72° 30′..... | 30.05‡ | 763.3‡ | ..... | ..... | 77 | 25.0 | 77 | E | ..... | ..... | 6 | ..... | 8 | ..... | E | ..... | ..... | Mod'ate | E | Fair ..... | |
| Quinnebaug, N. 41° 20′, E. 5° 23′..... | 30.51‡ | 774.9‡ | ..... | ..... | 60 | 15.6 | 76 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear. ..... | |
| Ranger. N. 36° 46′ 40″, E. 131° 41′ 05″* | 30.30‡ | 769.6‡ | ..... | ..... | 48 | 8.9 | 78 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Raining..... | |
| Richmond, N. 38° 37′, E. 15° 33′..... | 30.31‡ | 769.9‡ | ..... | ..... | 57 | 13.9 | 52 | NNE | ..... | ..... | 4 | ..... | 2 | ..... | NNE | 0 | 0 | Smooth | N | Fair ..... | |
| Rio Bravo, Brownsville, Texas..... | 29.95 | 760.7 | 68 | 20.0 | 69 | 20.6 | 100 | SE | ..... | ..... | 2 | ..... | 8 | ..... | W | ..... | ..... | ..... | ..... | Fair..... | |
| Santee, Annapolis, Md... ..... | 30.29‡ | 769.4‡ | ..... | ..... | 38 | 3.3 | 74 | Var. | ..... | ..... | 0–1 | ..... | 8 | ..... | ..... | 0 | 0 | .... ... | ..... | Cloudy..... | |
| Saratoga, Hampton Roads, Va..... | 30.40 | 772.1 | ..... | ..... | 44 | 6.7 | 92 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | D. clouds.... | |
| St. Louis, League Island, Pa..... | 30.20 | 767.1 | 55 | 12.8 | 35 | 1.7 | 79 | SE | 4 | 1.8 | ..... | ..... | 10 | ..... | SW | 0.01 | 0.3 | ..... | ..... | Cloudy..... | |
| Supply. N. 31° 44′, W. 73° 07′..... | 30.40‡ | 772.1‡ | ..... | ..... | 60 | 15.6 | 76 | NNE | ..... | ..... | 3 | ..... | 2 | ..... | E | ..... | ..... | Smooth | ..... | Clear..... | |
| Trenton Villafranca, France..... ... | 30.46‡ | 773.7‡ | ..... | ..... | 65 | 18.3 | 73 | S | ..... | ..... | 0–1 | ..... | 0 | ..... | ..... | 0 | 0 | None | ..... | Clear..... | |
| Tuscarora, N. 16° 02, W. 98° 01′.. ..... | 29.94‡ | 760.5‡ | ..... | ..... | 79 | 26.1 | 78 | N | ..... | ..... | 2 | ..... | 2 | ..... | Calm | 0 | 0 | Smooth | ..... | Pleasant..... | |
| Wabash, Boston, Mass..... | 30.41‡ | 772.4‡ | ..... | ..... | 31 | — 0.6 | 89 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Wyoming, Constantinople, Turkey | 30.06‡ | 763.5‡ | ..... | ... .... | 45 | 7.2 | 92 | NNE | ..... | ..... | 3–6 | ..... | 8 | ..... | NE | ..... | ..... | Mod'ate | NE | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | |
| S. S. Colima, N. 16° 50′, W. 99° 50′....† | | 30.02‡ | 762.5‡ | 78 | 25.6 | 91 | NW | | | 2 | | 4 | | E | 0 | Small | | D. clouds | Capt. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | F. W. Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WHITE STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
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| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

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| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, Capt. L. Meyer, Hong-Kong, China | | 29.96‡ | 761.0‡ | 68 | 20.0 | 84 | Var. | | | 2 | | 1 | | E | | Smooth | | D. clouds | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 35° 02′, E. 142° 22′....† | | 29.92‡ | 760.0‡ | 54 | 12.2 | ?? | NW | | | 6 | | 1½ | | Var. | | High | NW | Raining | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 26° 0′, W. 61° 19′ | | 30.22‡ | 767.6‡ | 78.5 | 25.8 | 41 | WNW | | | 3 | | 2 | | | | Mod'ate | N | Fine | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 6; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | Upper. From— | Lower. From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 51° 22', W. 10° 09' | | 30.45‡ | 773.4‡ | 68 | 11.7 | | SW | | | 3 | 7 | | | SW | 0 | Smooth | | Partly cl'dy | Captain Sargent. Wm. Shackford, Chief Officer. G. H. Dodge. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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**ALLAN LINE MARINE SERIES.**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 10, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 30.27 | 768.9 | 61.0 | 16.1 | 79 | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | |
| Nemours | ..... | ..... | 30.40 | 772.2 | 62.2 | 16.8 | 75 | ENE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Kesxuche. |
| Algiers | ..... | ..... | 30.39 | 772.0 | 58.3 | 14.6 | 76 | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Tourillere. |
| La Calle | ..... | ..... | 30.44 | 773.2 | 64.9 | 18.3 | 60 | NNE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0.039 | 1.0 | Fair | Foufrede. |
| Tunis | ..... | ..... | 30.44 | 773.2 | 61.2 | 16.2 | 43 | NE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Jacques. |
| Sfax | ..... | ..... | 30.43 | 773.0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 30.29 | 769.3 | 55.8 | 13.2 | 24 | E | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Herbin. |
| Tebessa | ..... | ..... | 30.43 | 773.0 | 48.7 | 9.3 | 40 | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Watrin. |
| Geriville | ..... | ..... | 30.28 | 767.7 | 50.5 | 10.3 | 93 | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Brugnlaux. |
| Laghouat | ..... | ..... | 30.37 | 771.5 | 51.1 | 10.6 | 53 | NE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0.055 | 1.4 | Fair | Bertrand. |
| Biskra | ..... | ..... | 30.43 | 772.8 | 65.1 | 18.4 | 35 | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—In the originals the amount of cloudiness is given by the scale 0-4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.75 | 755.6 | 30.30 | 769.5 | 59.7 | 15.4 | 34 | S W | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.43 | 747.5 | 30.21 | 767.4 | 47.8 | 8.8 | 63 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski |
| Eperies | 29.25 | 743.0 | 30.14 | 765.6 | 50.7 | 10.4 | 51 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 29.04 | 737 5 | 30.30 | 769.6 | 55.6 | 13.1 | 62 | SW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.78 | 730.9 | 30.24 | 768.0 | 48.2 | 9.0 | 49 | W | ..... | ..... | 6 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. A. Gotischling. |
| Kremsmünster | 28.97 | 735.8 | 30.32 | 770.1 | 54.7 | 12.6 | 31 | WNW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner. |
| Lemberg | 29.00 | 736.5 | 30.00 | 761.9 | 47.5 | 8.6 | 64 | NW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. T. Staneski. |
| Pola | 30.27 | 768.8 | 30.39 | 771.8 | 53.6 | 12.0 | 74 | WSW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0.015 | 0.38 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.76 | 756.0 | 30.24 | 768.0 | 50.7 | 10.4 | 63 | SW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Vienna | 30 28 | 769.2 | 30.39 | 771.8 | 53.6 | 12.0 | 71 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | P. Busih. |
| ..... | 29.56 | 750.9 | 30.28 | 769.1 | 57.6 | 14.2 | 33 | W | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Pasaau. |
| Brussels | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Royal Observatory |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. E. de Cae. |
| Maeseyck | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Pierrot |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:9, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.89 | 759.2 | 29.99 | 761.7 | 46.0 | 7.8 | ..... | W | 19 | 8.5 | ..... | ..... | 6 | ..... | ..... | 0.040 | 1.02 | D. clouds..... | W. Boswell. |
| Ardrossan | 30.11 | 764.8 | 30.13 | 765.3 | 45 | 7.2 | ..... | WNW | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | ..... | Raining..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.22 | 767.6 | 47.4 | 8.6 | ..... | SW | 16 | 7.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.29 | 769.4 | 50 0 | 10.0 | ..... | SW | 5 | 2.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 30.27 | 768.8 | 42.9 | 6.1 | ..... | SW | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | Thomas Mackereth. |
| Bradford, Yorkshire | 29.86 | 758.4 | 30.25 | 768.3 | 47.1 | 8.4 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.93 | 760 2 | 29.96 | 761.0 | 79 | 26.1 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 30.36 | 771.1 | 51.0 | 10.6 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | H. Todd. [C. |
| Cardington | ..... | ..... | 30.31 | 769.9 | 51.6 | 10.6 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E. | 30.27 | 768.8 | 30.40 | 772.1 | 53.1 | 11.7 | ..... | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Corpl. Daly, R. E. |
| Dartmoor | 28.80 | 731.5 | 30.28 | 769.1 | 51.2 | 10.7 | ..... | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 30.16 | 766.1 | 30.20 | 767.1 | 46 | 7.8 | ..... | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | J. Mac Gowan. |
| Dover | 30.35 | 770.9 | 30.38 | 771 6 | 47 | 8.3 | ..... | WSW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | Misty..... | J. Costello. |
| Falmouth, Observatory | 30.27 | 768 8 | 30.51 | 774.9 | 48.0 | 8.9 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy ..... | The Staff. |
| Fort Napier, (Natal) | 27.54 | 699.5 | 29.86 | 758.4 | 75.4 | 24.1 | ..... | E | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.76 | 755.9 | 29.99 | 761.7 | 82 | 27.8 | ..... | S | ... | ... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | 30.22 | 767.6 | 48 | 8.9 | ..... | SW | ... | ... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.26 | 768.6 | 30.32 | 770.1 | 59.8 | 15.4 | ..... | E | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.87 | 758.7 | 30.07 | 763.8 | 46.9 | 8.3 | ..... | WSW | ..... | ..... | 8 | ..... | 9 | ..... | ..... | ..... | ..... | Squally..... | D. G. Maclean. |
| Great Yarmouth | 30.30 | 769.6 | 30.31 | 769.9 | 51 | 10.6 | ..... | WSW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Misty..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.22 | 767.6 | 30.40 | 772.1 | 51.7 | 10.9 | ..... | SW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ... | ... | D. clouds..... | The Staff, for G. B. Airy. |
| Guernsey | 30.26 | 768.6 | 30.48 | 774.2 | 51 | 10.6 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | 30.42 | 772.4 | 30.54 | 775.7 | 48 | 8.9 | ..... | N? | ..... | ..... | 0? | ..... | 10 | ..... | ..... | 0 | 0 | Mist & fog... | M. P. Moyle. |
| Holyhead | 30.23 | 767.8 | 30.28 | 769.1 | 46 | 7.8 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | John Tilston. |
| Jersey | 30.22 | 767.6 | 30.52 | 775.2 | 46.5 | 8.1 | ..... | NW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Foggy ..... | J. Fisher. |
| Kew, Observatory | 30.36 | 771.1 | 30.40 | 772.1 | 50.2 | 10.1 | ..... | SSW | 13 | 5.8 | ..... | ..... | 7 | W | SW | ..... | ..... | Threatening | The Meteorological Of. |
| Leicester, Museum | 30.05 | 763.3 | 30.31 | 769.9 | 50.4 | 10.2 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 30.31 | 769.9 | 30.39 | 771.9 | 57 | 13.9 | ..... | NE | ..... | ..... | 1 | ..... | 4k | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.87 | 758.7 | 29.97 | 761.2 | 45 | 7.2 | ..... | WNW | ... | ... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.24 | 768.1 | 72.0 | 22.2 | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.. .. | C. S. Duncombe. |
| Nottingham, Observatory | 30.11 | 764.8 | 30.30 | 769.6 | 54.2 | 12.3 | ..... | SSW | ..... | ..... | 3 | ..... | 10k;d | ..... | WSW | 0 | 0 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.80 | 756.9 | 30.33 | 770.4 | 49.8 | 9.9 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.39 | 771.9 | 51 | 10.6 | ..... | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | H. E. Bellamy. |
| Plymouth | 30.41 | 772.4 | 30.49 | 774.4 | 45.1 | 7.3 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy ..... | John Merrifield. |
| Roche's Point | 30.34 | 770.6 | 30.39 | 771.9 | 52 | 11.1 | ..... | WSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | W. Kennedy. |
| Saint Ann's Head | 30.25 | 768.3 | 30.41 | 772.4 | 45 | 7.2 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John C. Walker. |
| Sandwick Manse, (Orkneys | ..... | ..... | 29.84 | 757.9 | 39.6 | 4.2 | ..... | W | • 35 | 15.6 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | Showery..... | Dr. Hoskins. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 30.17 | 766.3 | 51.0 | 10.6 | ..... | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | W. H. Lyne. |
| Sheffield | 30.02 | 762.5 | 30.30 | 769.6 | 50.9 | 10.5 | ..... | WSW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | W. F. Cooper. |
| Silloth Rectory | 30.17 | 766.3 | 30.20 | 767.1 | 45.3 | 7.4 | 86 | W | ..... | ..... | 6 | ..... | 8 | ..... | ..... | 0.080 | 2.03 | D. clouds..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.86 | 758.4 | 30.26 | 768.6 | 42.2 | 5.7 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. S. J. Perry. |
| Stratfield Turgiss | 30.21 | 767.3 | 30.44 | 773.2 | 53.3 | 11.8 | ..... | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | C.H.Griffith, F.M.S. |
| Thurso | 29.83 | 757.7 | 29.89 | 759.2 | 43 | 6.1 | ..... | SW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | John Trotter. |
| Truro, Royal Institution | 30.40 | 772.1 | 30.46 | 773.7 | 52 | 11.1 | ..... | W | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy ..... | W. Newcombe. |
| Valencia, Observatory | 30.24 | 768.1 | 30.26 | 768.6 | 50.9 | 10.5 | ..... | SW | 26 | 11.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds..... | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.90 | 759.4 | 29.94 | 760.5 | 74.2 | 23.4 | 63 | SSE | 17 | 7.6 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Fine..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.99 | 761.7 | 68.0 | 20.0 | 83 | W | ..... | ..... | 3 | ..... | 7k | ..... | ..... | ..... | ..... | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 30.08 | 764.0 | 48.0 | 8.9 | ..... | W | ..... | ..... | 6 | ..... | 10k | ..... | ..... | 0 | 0 | Cloudy..... | Andrew Gibb. |
| Mauritius, Observatory | 29.87 | 758.7 | 30.05 | 763.3 | 81.9 | 27.7 | 64 | E | 15.5 | 6.9 | ..... | 1 | 2 | ..... | ESE | 0 | 0 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 30.05 | 763.3 | 30.14 | 765.5 | 63.0 | 17.0 | 82 | SW | 1 | 0.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Very fine.... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 30.04 | 763.0 | 45 | 7.2 | ..... | W | ..... | ..... | 6 | 5 | 5 | W | ..... | 1. | 25. | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.63 | 752.6 | 39 | 3.9 | ..... | W | ..... | ..... | 8 | 5 | 3 | W | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day,) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day,) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 35° 54', E. 14° 30' | ..... | ..... | 30.38‡ | 771.6‡ | 60.5 | 15.8 | ..... | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Brig Alliance, N. 7° 43', W. 50° 17' | ..... | ..... | 29.95‡ | 760.7‡ | 82.3 | 27.9 | ..... | ENE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle Isle, N. 24° 05', W. 82° 25' | ..... | ..... | 30.18 | 766.6 | 75 | 23.9 | ..... | ENE | ..... | ..... | 6 | ..... | 2 | ..... | ..... | 6 | NE | Blue sky..... | Capt. A. J. Brown. |
| Ship British Commodore, N. 41° 20', W. 48° 10' | ..... | ..... | 29.40 | 746.7 | ..... | ..... | ..... | E | ..... | ..... | 3 | ..... | 3 | S | ..... | 4 | Var. | Squally..... | Capt. J. W. Thorne. |
| —— City of Agra, N. 2° 51', W. 31° 20' | ..... | ..... | 29.98‡ | 761.5‡ | 78 | 25.6 | ..... | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Capt. Thos. Young. |
| Barque Commewyne, N. 21° 31' W. 56° 25' | ..... | ..... | 30.11‡ | 764.8‡ | 70 | 21.1 | ..... | N | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Raining..... | Capt. A. Buchan. |
| —— Denbighshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Murdoch. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole, N. 46° 40', W. 11° 59' | ..... | ..... | 30.56‡ | 776.2‡ | 52.3 | 11.3 | ..... | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven, N. 11° 59', E. 51° 23' | ..... | ..... | 29.87‡ | 758.7‡ | 81 | 27.2 | ..... | Calm | ..... | ..... | 0 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. C. W. Pearson. |
| S. S. Wyberton, N. 13° 15', E. 48° 09' | ..... | ..... | 30.08‡ | 764.0‡ | 80 | 26.7 | ..... | E | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | | | | | | | | | | | | | | | | | | | Mr. Ansart. |
| San José | 26.29 | 667.8 | 30.01 | 762.2 | 65.8 | 18.8 | 88 | SE | | | 1 | | 8ks | | E | 0 | 0 | | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.87 | 758.6 | 29.91 | 759.8 | 48.5 | 6.4 | 71 | NW | | | 4 | | 5 | | | | | | |
| Farõe | 30.00 | 762.0 | 30.02 | 762.5 | 38.1 | 3.4 | 88 | W | | | 6 | | 10 | | | | | | |
| Godthaab, (Greenland) | 30.06 | 763.6 | 30.11 | 764.7 | 12.4 | —10.9 | 69 | Calm | | | 0 | | 10 | | | | | | |
| Stykkisholm, (Iceland) | | | | | | | | | | | | | | | | | | | |
| Thorshavn, (Farõe) | 29.74 | 755.5 | 29.78 | 756.4 | 31.1 | — 0.5 | 73 | N | | | 2 | | 10 | | | | | | |
| Vestervig | 29.09 | 754.1 | 29.86 | 758.4 | 39.6 | 4.2 | 93 | SW | | | 6 | | 0 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.96 | 761.0 | 30.51 | 775.0 | 51.8 | 11 | 86 | N | | | 2 | | 0 | | | 0 | 0 | Clear | Collignon, Director. |
| Amiens, Normal School | 30.34 | 770.6 | 30 45 | 773.5 | 45.0 | 7.2 | 72 | ENE | | | 1 | | 0 | | | 0 | 0 | Clear | Bonvallet, Director. |
| Avignon, Normal School | 30.39 | 772.0 | 30.47 | 774.0 | 66.6 | 19.2 | 45 | SW | | | 1 | | 0 | | | 0 | 0 | Very clear | M. Giraud, Director. |
| Bar-sur-Seine | 29.80 | 756.1 | 30.45 | 773.4 | 57.2 | 14.0 | 52 | S | | | 1 | | 0 | | | 0 | 0 | Clear | O. Saillard, Director. |
| Beauvais, Normal School | 30.19 | 766.9 | 30.48 | 774.3 | 54.9 | 12.7 | 66 | WNW | | | 1 | | 0 | | | 0 | 0 | Clear | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.60 | 751.7 | 30.50 | 774.7 | 56.5 | 13.6 | 53 | SW | | | 2 | | 0 | | | 0 | 0 | Clear | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.68 | 753.8 | 30.57 | 776.4 | 58.1 | 14.5 | 57 | SW | | | 1 | | 0 | | | 0 | 0 | Clear | M. Marlot, Director. |
| Bourges, Normal School | 29.92 | 759.9 | 30.48 | 774.1 | 56.1 | 13.4 | 66 | N | | | 1 | | 0 | | | 0 | 0 | Clear | A. Waquet, Director. |
| Brest, Naval Observatory | 30.22 | 767.5 | 30.46 | 773.6 | 51.8 | 11.0 | 80 | SW | | | 2 | | 10 | | SW | 0 | 0 | Foggy | M.de Rermaree, Director |
| Carcassonne, Normal School | 30.06 | 763.6 | 30.48 | 774.1 | 63.7 | 17.6 | 83 | E | | | 1 | | 0 | | | 0 | 0 | Clear | September, Director. |
| Caen, Normal School | 30.40 | 772.2 | 30.48 | 774.1 | 57.2 | 14 | 62 | NNW | | | 1 | | 0 | | | 0 | 0 | Very clear | M. Lair, Director. |
| Chartres, Normal School | 29.85 | 758.1 | 30.41 | 772.5 | 59.9 | 15.5 | 66 | NW | | | 1 | | 0 | | | 0 | 0 | Clear | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 30.15 | 765.9 | 30.47 | 774.0 | 61.3 | 16.3 | 77 | Calm | | | 0 | | 2 | | | 0 | 0 | Slightly cl'dy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 29.09 | 738.8 | 30.44 | 773.2 | 61.9 | 16.6 | 80 | W | | | 1 | | 0 | | | 0 | 0 | Misty | Alluard, Director. |
| Commercy, Normal School | 29.60 | 751.9 | 30.47 | 774.0 | 54.1 | 12.3 | 66 | WNW | | | 3 | 1c | | | WNW | 0 | 0 | Clear | Dr. Coulet, Director. |
| Commune de Grèasque* | 29.37 | 746.1 | 30.52 | 775.1 | 64.9 | 18.3 | 25 | NW | | | 2 | | 0 | | | 0 | 0 | Clear | M. Kina, Director. |
| Grenoble, Normal School | 29.72 | 755.0 | 30.50 | 774.7 | 56.8 | 13.8 | 50 | NE | | | 1 | | 0 | | | 0 | 0 | Clear | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 30.30 | 769.6 | 30.51 | 775.0 | 63.0 | 17.2 | 57 | SSE | | | 1 | | 0 | | | 0 | 0 | Clear | Moullot, Director. |
| Le Mans, Normal School | 30.19 | 766.9 | 30.51 | 774.9 | 56.8 | 13.8 | 62 | S | | | 2 | | 0 | | | 0 | 0 | Clear | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.58 | 751.3 | 30.52 | 775.2 | 56.3 | 13.5 | 67 | WSW | | | 2 | | 0 | | | 0 | 0 | Clear | Baudry, Director. |
| Lorient, Naval Observatory | 30.44 | 773.1 | 30.54 | 775.6 | 57.9 | 14.4 | 80 | SW | | | 1 | | | | | 0 | 0 | | Lt T. Carré, Director. |
| Mâcon, Normal School | | | | | | | | | | | | | | | | | | | M. Galsin, Director |
| Mirecourt, Normal School | 29.45 | 748.0 | 30.60 | 777.1 | 45.9 | 7.7 | 54 | W | | | 1 | | 8 | | E | 0 | 0 | | M. Barbier, Director. |
| Nîmes, Normal School | 30.26 | 768.7 | 30.46 | 773.8 | 71.2 | 21.8 | 37 | W | | | 1 | | 0 | | | 0 | 0 | Clear | Boyer, Director. |
| Privas, Normal School | 29.43 | 747.6 | 30.50 | 774.6 | 64.4 | 18 | 44 | N | | | 1 | | | | W N | 0 | 0 | | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 25 56 | 649.1 | | | 42.8 | 6.0 | 51 | SW | | | 1 | | 0 | | | 0 | 0 | Clear | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.40 | 774.4 | 30.52 | 775.2 | 62.2 | 16.8 | 72 | E | | | 1 | | 0 | | | 0 | 0 | Clear | Lt. Decante, Director. |
| Rouen, Normal School | 30.38 | 771.7 | 30.47 | 773.0 | 55.9 | 13.3 | 52 | SW | | | 1 | | 0 | | | 0 | 0 | Clear | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 30.42 | 772.7 | 30.45 | 773.5 | 53.6 | 12.0 | 67 | NNW | | | 2 | | 0 | | | 0.009 | 0.24 | Clear | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 30.30 | 769.6 | 30.46 | 773.8 | 59.9 | 15.5 | 68 | SW | | | 0–1 | | | | W | 0 | 0 | | E. Renou, Director. |
| Tarbes, Normal School | 29.31 | 744.5 | 30.41 | 772.4 | 53.6 | 12 | 54 | W | | | 2 | | 0 | | | 0 | 0 | Clear | T. Huguet, Director. |
| Versailles Observatory | 29.90 | 761.0 | 30.46 | 773.6 | 57.9 | 14.4 | | Calm | | | 0 | | 0 | | | 0 | 0 | Clear | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.76 | 756.0 | 30.57 | 776.4 | 63.5 | 17.5 | 77 | ESE | | | 1 | | 0 | | | 0 | 0 | Clear | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.92 | 760.0 | 29.95 | 760.7 | 75.2 | 24 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 29.87 | 758.6 | 30.49 | 774.4 | 61.5 | 16.4 | 38 | E | | | 1 | | 0 | | | 0.004 | 0.1 | Clear | Mr. Jays. |
| Marseilles, Observatory | | | | | | | | | | | | | | | | | | | The Staff. |
| Mont-Louis | 25.22 | 640.6 | 30.54 | 775.6 | 45.5 | 7.5 | 42 | SW | 7.4 | 3.3 | | | 0 | | | 0 | 0 | | M. Cave. |
| Nice | | | 30.46 | 773.6 | 62.2 | 16.8 | 72 | ESE | | | 1 | | 0 | | | 0 | 0 | Clear | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 30.19 | 766.8 | | | 59.7 | 15.4 | 59 | NW | | | 2 | | 0 | | | 0 | 0 | | Marié Davy, Director. |
| Perpignan | 30.41 | 772.4 | 30.52 | 775.1 | 55.4 | 13.0 | 76 | SE | 7.4 | 3.3 | | | 0 | | | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.82 | 579.5 | | | 33.1 | 0.6 | | N | | | 1 | | 0 | | | 0 | 0 | | Gen'l de Nansouty. |
| Toulouse, Observatory | 29.84 | 757.9 | 30.55 | 775.5 | 56.5 | 13.6 | 60 | SE | | | 1 | | 0 | | | 0 | 0 | | M. Mercadier Juller. |
| Tours | 30.28 | 767.9 | 30.43 | 772.9 | 63.3 | 17.4 | 50 | SSW | | | 1 | | 0 | | | 0 | 0 | Clear | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.30 | 769.6 | 30.32 | 770.2 | 40.5 | 4.7 | 89 | ENE | 8.9 | 4.0 | | | 10k | | | | | Covered | Marc Dechevrens, S. J. |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque on the scale 0 to 4 and Brest on the scale 0 to 10; Mirecourt apparently gives cloud direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1.010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the cooperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-12. | Clouds. Amount. Up'er 0-10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.46 | 748.3 | 30.31 | 769.9 | 46.0 | 7.8 | 69 | SE | | | 4 | | 3 | SE | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 30.02 | 762.5 | 30.20 | 767.0 | 49.6 | 9.8 | 69 | SW | | | 3 | | 10 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.69 | 754.0 | 30.22 | 767.6 | 47.3 | 8.5 | 65 | WNW | | | 5 | | 10 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.96 | 761.1 | 30.40 | 772.1 | 56 8 | 13.8 | 52 | SW | | | 4 | | 0 | | | 0 | 0 | | Albert Sens. |
| Cassel | 29.71 | 754.7 | 30.33 | 770.3 | 55.4 | 13.0 | 56 | W | | | 4 | | 5 | W | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 30.18 | 766.5 | 30.34 | 770.7 | 54.3 | 12.4 | 65 | NW | | | 3 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 30.02 | 762.5 | 30.40 | 772.1 | 58.8 | 14.9 | | SW | | | 2 | | 8 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 29.00 | 736.5 | 30.40 | 772.1 | 44.2 | 6.8 | 64 | SSW | | | 1 | | 0 | | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 30.13 | 765.2 | 30.20 | 767.0 | 47.8 | 8.8 | 60 | WNW | | | 6 | | 8k | | | 0.008 | 0.2 | Squally | Captain F. Hegemann. |
| Kiel | 30.09 | 764.2 | 30.10 | 764.6 | 43.9 | 6.6 | 74 | W | | | 4 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.71 | 754.5 | 29.79 | 756.6 | 40.3 | 4.6 | 74 | W | | | 7 | | 2 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 29.97 | 761.2 | 44.4 | 6.9 | | W | | | 6 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.69 | 759.2 | 30.32 | 770.2 | 46.9 | 8.3 | 77 | SW | | | 4 | | 8 | W | | 0 | 0 | | Prof. Bruhns, Privy Counsellor. |
| Memel, Naval School | 29.65 | 753.2 | 29.70 | 754.4 | 37.4 | 3.0 | 83 | W | | | 7 | | 0 | | | | | Clear. | Skalweit. |
| Neufahrwasser | 29.88 | 759.0 | 29.90 | 759.4 | 46.4 | 8.0 | 68 | W | | | 5 | | 7 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.85 | 758.2 | 30.19 | 766.8 | 46.8 | 8.2 | 71 | NW | | | 7 | | 8 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.91 | 759.6 | 30.46 | 773.8 | 55.9 | 13.3 | 54 | SW | | | 2 | | 1 | | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 29.43 | 747.5 | 30.37 | 771.4 | 58.1 | 14.5 | 31 | W | | | 1 | | 0 | | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | | | | | | | | | | | | | | | | | | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.89 | 733.7 | 30.43 | 773.0 | 48.6 | 9.2 | 52 | WSW | 7 | 3 | | | 2c | | | 0 | 0 | | Dr. Van Bebber. |
| Wustrow, Naval School | 30.02 | 762.6 | 30.05 | 763.2 | 39.0 | 3.9 | 84 | WSW | | | 4 | | 9s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.89 | 759.2 | 30.29 | 769 4 | 51.8 | 11.0 | | NE | | | 1.5 | | | | | | | ⅛ Clouded. | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the cooperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.96 | 761.0 | 30.01 | 762.3 | 73.5 | 23.1 | 79 | W | 9 | 4.0 | | | 7 | | | 0 | 0 | D. clouds. | |
| Deesa | | | | | | | | W | 7.7 | 3.4 | | | | | | 0 | 0 | D clouds. | |
| Bombay | 29.83 | 757.7 | 29.87 | 758.7 | 80.6 | 27.0 | 80 | NW | 22 | 9.8 | | | 0 | | | 0 | 0 | Blue sky. | |
| Lahore | 29.05 | 737.9 | 29.80 | 757.0 | 72.8 | 22.7 | 55 | N | 3.0 | 1.3 | | | 8 | | W | 0.05 | 1.3 | Cloudy | |
| Belgaum | 27.37 | 695.1 | 29.86 | 758.4 | 86.1 | 30.1 | 55 | W | 14.0 | 6.3 | | | 3 | | ESE,NE | 0 | 0 | | |
| Roorkee | 28.93 | 734.9 | 29.84 | 757.8 | 78.8 | 26.0 | 33 | NW | 5.8 | 2.6 | | | 5 | | | 0 | 0 | | |
| Agra | 29.30 | 744.2 | 29.86 | 758.4 | 83.7 | 28.7 | 40 | S | | | | | 4 | | S | 0 | 0 | | |
| Nagpur | 28.83 | 732.2 | 29.84 | 758.0 | 93.5 | 34.2 | 32 | Calm | 1.9 | 0.8 | | | 0 | | | 0 | 0 | Blue sky. | |
| Lucknow | 29.47 | 748.5 | 29.85 | 758.1 | 78.8 | 26.0 | 37 | NNW | 5.3 | 2.4 | | | 1 | | | 0 | 0 | D. clouds. | |
| Allahabad | 29.53 | 750.1 | 29.84 | 758.0 | 85.1 | 29.5 | 40 | NW | 5.3 | 2.4 | | | 10 | W | | 0 | 0 | Overcast. | |
| Patna | 29.64 | 752.7 | 29.82 | 757.3 | 85.2 | 29.6 | 22 | W | 3.9 | 1.7 | | | 4 | W | W | 0 | 0 | D. clouds. | |
| Hazaribagh | 27.84 | 707.2 | 29.85 | 758.1 | 80.8 | 27.1 | 23 | WNW | 10.6 | 4.7 | | | 0 | | | 0 | 0 | Blue sky. | |
| Cuttack | 29.80 | 756.9 | 29.88 | 759.0 | 89.1 | 31.7 | 55 | SE | 4.0 | 1.8 | | | 2 | | | 0 | 0 | D clouds. | |
| Calcutta (Alipore) | 29.83 | 757.7 | 29.85 | 758.2 | 81.9 | 27.7 | 41 | WNW | 1.0 | 0.4 | | | 0 | | | 0 | 0 | Blue sky. | |
| Goalpara | 29.44 | 747.9 | 29.83 | 757.7 | 80.8 | 27.1 | 38 | SE | 6.0 | 2.7 | | | 0 | | | 0 | 0 | Blue sky. | |
| Chittagong | | | | | | | | | | | | | | | | | | | |
| Sibsagar | 29.59 | 751.6 | 29.93 | 760.3 | 69.0 | 20.6 | 75 | NE | 3.6 | 1.6 | | | 10 | W | W | 0.76 | 19.3 | D. clouds. | |
| Jubbulpore | 28.54 | 724.8 | 29.88 | 759.1 | 88.8 | 31.6 | 24 | NE | 2.0 | 0.9 | | | 0 | | | 0 | 0 | Blue sky. | |
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Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,551 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.93 | 760.2 | 30.35 | 770.9 | 55.8 | 13.2 | 48 | W | 1.8 | 0.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.85 | 758.3 | 30.40 | 772.1 | 59.4 | 15.2 | 39 | SSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 30.28 | 769.0 | 30.39 | 771.9 | 55.0 | 12.8 | 61 | SE | 1.3 | 0.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 29.47 | 748.6 | 30.41 | 772.3 | 56.5 | 13.6 | 53 | ESE | 2.5 | 1.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 30.26 | 768.6 | 30.46 | 773.6 | 56.8 | 13.8 | 69 | S | 1.3 | 0.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 29.47 | 723.0 | 30.43 | 772.8 | 57.6 | 14.2 | 20 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 30.34 | 770.7 | 30.39 | 772.0 | 56.0 | 12.8 | 51 | NNW | 8.7 | 3.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 30.19 | 766.7 | 30.45 | 773.4 | 60.3 | 15.7 | 42 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci |
| Leghorn | 30.36 | 771.2 | 30.45 | 773.4 | 57.2 | 14.0 | 67 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 30.22 | 767.5 | 30.40 | 772.1 | 63.3 | 17.4 | 21 | N | 5.6 | 2.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 30.10 | 764.8 | 30.36 | 771.2 | 53.2 | 11.8 | 37 | ENE | 9.4 | 4.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.47 | 748 6 | 30.38 | 771.6 | 54.7 | 12.6 | 72 | NW | 1.8 | 0.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 30.28 | 767.7 | 30.42 | 772.7 | 58.8 | 14.9 | 47 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 30.15 | 765.9 | 30.41 | 772.5 | 55.6 | 13.1 | 46 | NE | 5.6 | 2.5 | ..... | ..... | 5 | NNE | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 30.32 | 770.1 | 30.39 | 772.0 | 54.9 | 12.7 | 52 | NNE | 3.8 | 1.7 | ..... | ..... | 3 | WNW | ..... | 0.020 | 0.5 | ..... | Prof. V. Giuliano. |
| Sub-Series. Naples, S. R. | 29.87 | 758.6 | 30.42 | 772.7 | 57.6 | 14.2 | 45 | NW | 7.4 | 3.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.07 | 763.8 | 30.09 | 764.3 | 38.3 | 3.5 | 74 | ..... | 0.7 | 0.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.96 | 761.0 | 30.17 | 766.3 | 43 0 | 6.1 | 61 | WNW | 5.6 | 2.5 | ..... | ..... | 1ck;8 | ..... | ..... | 0.020 | 0.51 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.76 | 755.9 | 29.83 | 757.7 | 40.6 | 4.8 | 88 | NW | 9.7 | 4.3 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.11 | 637.9 | 30.15 | 765.9 | 50.4 | 10.2 | 46 | Calm | ..... | ..... | 0 | 0 | 9 | ..... | SW | 0 | 0 | Very cloudy | Prof. L. Perez. |
| Leon | 24.48 | 621.8 | 30.08 | 764.1 | 59.0 | 15.0 | 70 | S | ..... | ..... | 1 | 5ck | 0 | SW | ..... | 0 | 0 | ½ clouded | Prof. M. Leal |
| Mexico, Central Obs'y | 23.10 | 586.7 | 30.19 | 766.8 | 49.6 | 9.8 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 63.5 | 17.5 | 54 | SW | ..... | ..... | 2 | 0 | 7k | ..... | SW | 0 | 0 | ½ clouded | M. V. de Leon, M. E. |
| Tlacotalpam | 30.05 | 763.3 | 30.06 | 763.6 | 69.8 | 21 | 95 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | M. M. Cházaro. |
| San Luis Potosi | 24.24 | 615.1 | 30.37 | 771.4 | 56.0 | 13.3 | 41 | N | ..... | ..... | 1 | 0 | 10 | ..... | N | 0 | 0 | Covered | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.43 | 595.1 | 30.19 | 766.9 | 48.2 | 9.0 | 84 | NNE | 0.9 | 0.4 | ..... | 1n | ..... | NW | ..... | 0.00 | 0.01 | ..... | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.44 | 722.4 | 30.08 | 764.0 | 76.3 | 24 6 | 82 | Calm | ..... | ..... | 0 | 0 | 7 | ..... | W | 0 | 0 | Very cloudy | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1893 m., or 6210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2201m., or 7220.9 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 532 m., or 1745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.41 | 772.5 | 30.41 | 772.5 | 47.8 | 8.8 | ..... | W | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.008 | 0.2 | ..... | |
| Groningen | 30.21 | 767.2 | 30.26 | 768.6 | 46.4 | 8.0 | ..... | WNW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 30.28 | 769.0 | 30.28 | 769.0 | 42.6 | 5.9 | ..... | SW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.173 | 4.4 | ..... | |
| Hellevoetsluis | 30.36 | 771.1 | 30.36 | 771.1 | 47.3 | 8.5 | 78 | W | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.31 | 769.8 | 30.35 | 771.0 | 50.5 | 10.3 | 86 | WSW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.54 | 750.3 | 29.60 | 751.7 | 41.0 | 5.0 | 69 | WSW | 24.6 | 11.0 | ..... | ..... | 4 | ..... | ..... | 0.039 | 1.0 | Rain & snow | |
| Brönö | 28.94 | 735.0 | 28.98 | 736.0 | 39.2 | 4.0 | 75 | WSW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | 0.382 | 9.7 | ..... | |
| Christiania | 29.28 | 743.8 | 29.43 | 747.5 | 44.6 | 7.0 | 85 | SW | 13 | 6 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 28.80 | 731.5 | 28.84 | 732.6 | 31.5 | — 0.3 | 87 | Calm | 0 | 0 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.09 | 764.2 | 30.28 | 769.1 | 59.9 | 15.5 | 93 | S | 2.5 | 1.1 | ..... | ..... | 8 | ..... | ..... | 0.315 | 8.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.40 | 746.7 | 30.43 | 772.9 | 59.0 | 15.0 | 43 | E | 13.0 | 5.8 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.20 | 767.0 | 30.28 | 769.2 | 66.0 | 18.9 | 53 | SW | 3.8 | 1.7 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 30.06 | 763.6 | 30.42 | 772.7 | 58.5 | 14.7 | 64 | NE | 17.4 | 7.8 | ..... | ..... | 6 | ESE | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.27 | 768.8 | 30.34 | 770.6 | 62.6 | 17.0 | 72 | SSE | 11.9 | 5.3 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 6 h 6 m., p. m

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Comd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | ..... | ..... | 29.89 | 759.3 | 83.7 | 28.7 | ..... | E | ..... | ..... | 2 | ..... | 8 | ..... | E | 2 | E | D. clouds | A. J. de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. T. d'Oliveria, Com'd't |
| Rio Lima, Capt. S. C. da SilvaCosta, N. 14° 11', W. 21° 40' | ..... | ..... | 30.03 | 762.8 | 73.0 | 22.8 | ..... | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 3 | NE | Blue sky | A. Ferreira, 2nd Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | 29.74 | 755.5 | 86 5 | 30.3 | ..... | WSW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 29.94 | 760.5 | 66.2 | 19.0 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 1 | ..... | Overcast | J. M. T. Guimarães, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.60 | 751.8 | 30.03 | 762.8 | 43.9 | 6.6 | 70 | W | 18 | 8 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs |
| Wilna | 29.25 | 743.0 | 29.68 | 753.8 | 39.4 | 4.1 | 68 | W | 13 | 6 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.11 | 739.3 | 29.36 | 745.6 | 35.4 | 1.9 | 84 | SW | 9 | 4 | ..... | ..... | 5k | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.15 | 740.3 | 29.16 | 740.7 | 34.9 | 1.6 | 80 | W | 16 | 7 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.13 | 739.8 | 29.77 | 756.2 | 39.9 | 4.4 | 71 | W | 13 | 6 | ..... | ..... | 6c,k,ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.93 | 760.3 | 30.00 | 762.1 | 43.7 | 6.5 | 64 | NW | 13 | 6 | ..... | ..... | 8kn | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.96 | 760.9 | 29.98 | 761.4 | 38.8 | 3.8 | 100 | NW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 28.99 | 736.3 | 29.56 | 750.8 | 27.0 | — 2.8 | 66 | S | 9 | 4 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.50 | 749.3 | 29.71 | 754.7 | 36.3 | 2.4 | 61 | WNW | 22 | 10 | ..... | ..... | 8s | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 29.34 | 745.2 | 29.36 | 745.7 | 25.5 | — 3.6 | 85 | ESE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.43 | 722.1 | 29 84 | 758.0 | 54.1 | 12.3 | 35 | NW | 9 | 4 | ..... | ..... | 5cs | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.85 | 758.2 | 29.77 | 756.1 | 46.9 | 8.3 | 54 | N | 2 | 1 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.18 | 741.1 | 29.66 | 753.4 | 31.8 | — 0.1 | 65 | SW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.36 | 745.8 | 29.65 | 753.0 | 22.8 | — 5.1 | 82 | SW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 28.75 | 730.3 | 29.74 | 755.5 | 29.8 | — 1.2 | 59 | ESE | 4 | 2 | ..... | ..... | 9c | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Nukuss | 29.37 | 746.0 | 29.60 | 751.9 | 54.0 | 12.2 | 32 | WSW | 4 | 2 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.15 | 714.9 | 29.84 | 757.9 | 52.9 | 11.6 | 80 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Teich, A. M. |
| Barnaul | 29.54 | 750.4 | 30.08 | 763.9 | 19.6 | — 6.9 | 61 | NE | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.88 | 759.0 | 30.20 | 767.1 | 9.0 | —12.8 | 66 | NNW | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 29.94 | 760.5 | 30.08 | 764.1 | 40.8 | 4.9 | 28 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend 455? m, or 1,492.7? ft., Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E. 48° 34'.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.39 | 771.9 | 30.50 | 774.6 | 57.7 | 14.3 | 52 | SSW | 2.9 | 1.31 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 30.38 | 771 7 | 30.44 | 773.1 | 68.0 | 20.0 | 43 | E | 2.5 | 1.11 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.45 | 697.3 | ..... | ..... | 58.5 | 14.7 | 62 | N | 4.4 | 1.99 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 28.22 | 716.9 | ..... | ..... | 54.7 | 12.6 | 58 | E | 4.5 | 2.00 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |
| Murcia, Met. Obs'y | 30.36 | 771.2 | 30.51 | 775.0 | 62.6 | 17.0 | 56 | NE | 3.2 | 1.44 | ..... | 2 | 6 | WNW | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.50 | 749.2 | 30.39 | 771.9 | 65.7 | 18.7 | 67 | W | 6.0 | 1.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | R. Gil Villanueva, Dir |
| Sub-Series | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.14 | 765.6 | 30.21 | 767.3 | 68.5 | 20.3 | 86 | ENE | 1.8 | 0.8 | ..... | 0 | 1k | ..... | E | 0 | 0 | Clear | Benito Vines, S. J |
| Manilla, Philippine Islands | 29.91 | 759.8 | 29.97 | 761.3 | 82.7 | 28.2 | 67 | E | 1.6 | 1.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.27 | 768.8 | 30.37 | 771.3 | 61.3 | 16.3 | 59 | ESE | 29.3 | 13.1 | ..... | 0 | 8 | ..... | E | 0 | 0 | ..... | Capt. C. Pujazon, R. N. Dir. |
| San Juan de Porto Rico, W. I. | 30.00 | 762.0 | 30.09 | 764.3 | 75.9 | 24.4 | 76 | E | 17.2 | 7.69 | ..... | 5k | 6kn | E | E | 0.089 | 2.25 | Overcast | Leonardo de Tejeda, Ch't. Eng'r |

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 28.94 | 735.0 | 28.98 | 736.0 | 27.0 | — 2.8 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.039 | 1.0 | ..... | |
| Umea | 28.95 | 735.4 | 29.00 | 736.7 | 38.8 | 3.8 | 97 | NW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.07 | 738.4 | 29.12 | 739.7 | 42.4 | 5.8 | 44 | S | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.18 | 741.2 | 29.36 | 745.7 | 39.9 | 4.4 | 62 | WSW | ..... | ..... | 6 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.46 | 748.3 | 29.52 | 749.8 | 38.1 | 3.4 | 73 | W | ..... | ..... | 7 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.24 | 742.5 | 29.31 | 744.4 | 39.6 | 4.2 | 62 | W | 11.0 | 4.9 | ..... | ..... | 2 | ..... | ..... | 0.001 | 0.02 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 29.06 | 738.2 | 30.50 | 774.8 | 48.9 | 9.4 | 54 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Zurich | 28.81 | 731.8 | 30.46 | 773.7 | 50.4 | 10.2 | 61 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| ..... | | | | | | | | | | | | | | | | | | | |
| ..... | | | | | | | | | | | | | | | | | | | |
| ..... | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +13.2 mm.; Thermometer, +2.6 cent.; Relative Humidity, —9 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.24 | 768.1 | 45.7 | 7.6 | 53 | NE | 9 | 4.0 | ..... | ..... | 5 | ..... | NE | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.28 | 769.0 | 66.2 | 19.0 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 30.29 | 769.3 | 52.5 | 11.4 | ..... | NW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.73 | 755.1 | 29.85 | 758.1 | 66.1 | 18.4 | 70 | W | ..... | ..... | 4 | ..... | 8n | ..... | SW | 1.13 | 28.7 | Raining | Prof. C. V. A. Van Dyck. |
| ..... | | | | | | | | | | | | | | | | | | | |
| ..... | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.98 | 761.5 | 30.05 | 763.3 | 24.2 | — 4.3 | 61 | Calm | 0 | 0 | ..... | ..... | 9n | ..... | ..... | 0 | 0 | Cloudy | Hon. J. Ferguson. |
| Brockville, Ontario | 29.71 | 754.6 | 30.03 | 762.8 | 35 | 1.7 | ..... | SW | 5 | 2.2 | ..... | ..... | Fog | ..... | SW | 0.02 | 0.5 | Foggy | W. R. Bigg. |
| *Chatham, N. B | 30.02 | 762.5 | 30.09 | 764.3 | 25 | — 3.9 | 82 | SE | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 30.06 | 763.5 | 30.11 | 764.8 | 25 | — 3.9 | 95 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.025 | 0.64 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.73 | 755.1 | 29.93 | 760.2 | 40.5 | 4.7 | 100 | W | ..... | ..... | 1 | ..... | Fog | ..... | ..... | 0 | 0 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 29.76 | 755.9 | 29.80 | 756.9 | 36.6 | 2.6 | 96 | N | ..... | ..... | ..... | 10cs | 0 | ..... | ..... | 0.49 | 12.4 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 29.86 | 758.4 | 29.88 | 758.9 | 30 | — 1.1 | 78 | S | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light rain | J. McWilliams. |
| Fredericton, N. B | 30.03 | 762.8 | 30.10 | 764.5 | 29.8 | — 1.2 | 71 | S | 5 | 2.2 | ..... | ..... | 10s | ..... | ..... | 0.14 | 3.6 | Overcast | Prof. Harrison. |
| *Fort Garry Manitoba | 28.96 | 735.6 | 29.85 | 758.2 | 14 | —10.0 | 100 | N | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0.170 | 4.32 | Light snow | James Stewart. |
| Granton, Ontario | 28.92 | 734.6 | 30.06 | 763.5 | 35 | 1.7 | ..... | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.19 | 4.8 | Clear | James Grant. |
| *Halifax, N. S | 29.97 | 761.2 | 30.11 | 764.8 | 26 | — 3.3 | 86 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Cloudy | F. Allison, M. A. |
| Hamilton, Ontario | 29.70 | 754.4 | 30.08 | 764.0 | 39.7 | 4.3 | 93 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.07 | 1.8 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.68 | 753.9 | 30.02 | 762.5 | 33 | 0.6 | 93 | SE | 6 | 2.7 | ..... | Fog | Fog | ..... | SW | 0.06 | 1.5 | Foggy | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.06 | 763.5 | 30.10 | 764.5 | 30.7 | — 0.7 | 93 | W | 2 | 0.9 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 29.73 | 755.1 | 29.94 | 760.5 | 38 | 3.3 | 91 | SW | 24 | 10.7 | ..... | ..... | 10n | ..... | ..... | 0.12 | 3.0 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.27 | 743.4 | 29.99 | 761.7 | 32 | 0.0 | 99 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.07 | 1.8 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | 29.25 | 742.9 | 30.00 | 762.0 | 45.7 | 7.6 | 61 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.38 | 746.2 | 30.11 | 764.8 | 32 | 0.0 | 100 | E | 7 | 3.1 | ..... | ..... | Fog | ..... | ..... | 0.12 | 3.0 | Foggy | H. Morgan. |
| Port Hastings, N. S | 30.07 | 763.8 | 30.12 | 765.0 | 25.7 | — 3.5 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | Peter Grant. |
| Port Stanley, Ontario | 29.43 | 747.5 | 30.11 | 764.8 | 31 | — 0.6 | 96 | E | 8 | 3.6 | ..... | ..... | Fog | ..... | E | 0.10 | 2.5 | Foggy | M. Payne. |
| *Quebec, Quebec | 29.60 | 751.8 | 29.94 | 760.5 | 29 | — 1.7 | 100 | Calm | ..... | ..... | 0 | Haze | Fog | ..... | ..... | 0.20 | 5.1 | Foggy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.44 | 747.8 | 29.91 | 759.7 | 28 | — 2.2 | 87 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | Inap. | Inap. | Foggy | W. H. McIntyre. |
| St. Andrews, N. B | 30.03 | 762.8 | 30.08 | 764.0 | 30 | — 1.1 | 87 | SW | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| St. John, N. B | 29.93 | 760.2 | 30.11 | 764.8 | 20 | — 1.7 | 100 | SE | 2 | 0.9 | ..... | ..... | 10ks | ..... | ..... | 0.10 | 2.5 | Overcast | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.26 | 743.2 | 29.99 | 761.7 | 38 | 3.3 | 83 | S | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.12 | 3.0 | Clear | K. Stewart. |
| Stayner, Ontario | 29.21 | 741.9 | 30.00 | 762.0 | 39 | 3.9 | 82 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.20 | 5.1 | Clear | R. J. Cole. |
| Stratford, Ontario | 28.72 | 729.5 | 30.05 | 763.3 | 34.0 | 1.1 | 89 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.09 | 2.3 | Clear | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.08 | 764.0 | 30.12 | 765.0 | 20 | — 1.7 | 91 | N | 1 | 0.4 | ..... | 2c | Haze | ..... | ..... | 0 | 0 | Clear | T. C. Hill. |
| *Toronto, Ontario | 29.66 | 753.4 | 30.06 | 763.5 | 36 | 2.2 | 96 | S | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.16 | 4.1 | Clear | Magnetic Observatory. |
| Windsor, N. S | 30.00 | 762.0 | 30.10 | 764.5 | 25.5 | — 3.6 | 94 | E | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 31.0 | — 0.6 | 100 | NE | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.24 | 6.1 | Sleeting | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,016 feet, or 309.4 meters, Stratford, 1,182 ft., or 360.3 meters.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUD. Amount. Up'er 0—10. | CLOUD. Amount. Low'r 0—10. | CLOUD. Direction. Upper. From— | CLOUD. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.54 | 757.9 | 30.08 | 764.0 | 36 | 2.2 | 90 | Calm | 0 | 0 | ..... | 2c | Fog | W | ..... | 0.07 | 1.8 | Clearing | |
| Alpena, Michigan | 29.24 | 742.7 | 29.89 | 759.2 | 38 | 3.3 | 81 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| Atlanta, Georgia | 29.10 | 739.1 | 30.25 | 768.3 | 59 | 15.0 | 76 | SW | 9 | 4.0 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Atlantic City, New Jersey | 30.12 | 765.0 | 30.13 | 765.3 | 39 | 3.9 | 100 | NE | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0.04 | 1.0 | Foggy | |
| Augusta, Georgia | 30.12 | 765.0 | 30.30 | 769.6 | 58 | 14.4 | 82 | Calm | 0 | 0 | ..... | 5cs | Sm'e | SE | Calm | 0 | 0 | Fair | |
| Baltimore, Maryland | 30.10 | 764.5 | 30.15 | 765.8 | 42 | 5.6 | 83 | Calm | 0 | 0 | ..... | Haze | Fog | Calm | Calm | 0 | 0 | Foggy | |
| Barnegat, New Jersey | 30.09 | 764.3 | 30.11 | 764.8 | 39 | 3.9 | 91 | S | 3 | 1.3 | ..... | 0 | Fog | ..... | Calm | 0.02 | 0.5 | Fair | |
| Bismarck, Dakota | 28.07 | 713.0 | 29.92 | 760.0 | 30 | — 1.1 | 89 | W | 20 | 8.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boerne, Texas | 28.59 | 726.2 | 29.68 | 758.9 | 64 | 17.8 | 94 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.15 | 689.6 | 30.11 | 764.8 | 39 | 3.9 | 82 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.56 | 14.2 | Cloudy | |
| Boston, Massachusetts | 29.92 | 760.0 | 30.08 | 764.0 | 34 | 1.1 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | Inap. | Inap. | Dense fog | |
| Brackettville, Texas | 28.91 | 734.3 | 29.92 | 760.0 | 65 | 18.3 | 73 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Threatening | |
| Breckenridge, Minnesota | 28.78 | 731.0 | 29.79 | 756.7 | 35 | 1.7 | 80 | W | 12 | 5.4 | ..... | 2cs | 5s | Calm | Calm | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.99 | 761.7 | 30.03 | 762.8 | 71 | 21.7 | 85 | SE | 8 | 3.6 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Buffalo, New York | 29.38 | 746.2 | 30.11 | 764.8 | 34.5 | 1.4 | 100 | SW | 3 | 1.3 | ..... | ..... | Fog | ..... | Calm | 0.39 | 9.9 | Dense fog | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 47 | 8.3 | 8 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.70 | 754.4 | 30.00 | 762.0 | 40 | 4.4 | 82 | S | 14 | 6.3 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Cairo, Illinois | 29.73 | 755.1 | 30.12 | 765.0 | 63 | 17.2 | 72 | S | 7 | 3.1 | ..... | 2ck | Haze | SW | ..... | 0.06 | 1.5 | Fair | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.22 | 640.6 | 30.02 | 762.5 | 45 | 7.2 | 46 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 32 | 0.0 | 40 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.53 | 699.2 | 30.10 | 764.5 | 39 | 3.9 | 91 | SW | 2 | 0.9 | ..... | ..... | Fog | ..... | SW | 0 | 0 | Foggy | |
| Cape Hatteras, N. Carolina | 30.24 | 768.1 | 30.25 | 768.3 | 50 | 10.0 | 93 | SW | 11 | 4.9 | ..... | ..... | Fog | ..... | SW | 0 | 0 | Dense fog | |
| Cape Henry, Virginia | 30.10 | 764.5 | 30.12 | 765.0 | 61 | 16.1 | 71 | W | 16 | 7.2 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.26 | 768.6 | 30.28 | 769.1 | 53 | 11.7 | 100 | SW | 18 | 8.8 | ..... | 10cs | Haze | SW | SW | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 30.08 | 764.0 | 30.11 | 764.8 | 43 | 6.1 | 83 | NE | 3 | 1.3 | ..... | 5c | Fog | W | ..... | 0.01 | 0.3 | Fair | |
| Castroville, Texas | 29.27 | 743.4 | 29.96 | 761.0 | 67 | 19.4 | 95 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 30.25 | 768.3 | 30.30 | 769.6 | 61 | 16.1 | 88 | SW | 2 | 0.9 | ..... | 1ck | Fog | SW | Calm | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 23.98 | 609.1 | 29.92 | 760.0 | 36 | 2.2 | 45 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.26 | 743.2 | 29.96 | 761.0 | 48 | 8.9 | 63 | SW | 4 | 1.8 | ..... | 0 | Haze | ..... | ..... | 0.07 | 1.8 | Clear | |
| Cincinnati, Ohio | 29.46 | 748.3 | 30.11 | 764.8 | 57 | 13.9 | 75 | Calm | 0 | 0 | ..... | 7k | 2ks | SW | SW | 0 | 0 | Threatening | |
| Cleveland, Ohio | 29.38 | 746.2 | 30.11 | 764.8 | 49.0 | 9.4 | 85 | SW | 3 | 1.3 | ..... | ..... | Fog | ..... | Calm | 0.14 | 3.6 | Foggy | |
| Coleman City, Texas | 28.23 | 717.0 | 29.86 | 758.4 | 62 | 16.7 | 88 | S | 4 | 1.8 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Columbus, Ohio | 29.26 | 743.2 | 30.10 | 764.5 | 55 | 12.8 | 81 | S | 5 | 2.2 | ..... | 2ck | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Concho, Texas | 28.15 | 715.0 | 29.79 | 756.7 | 62 | 16.7 | 77 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.60 | 751.8 | 30.06 | 763.5 | 64 | 17.8 | 89 | SE | 7 | 3.1 | ..... | 2k | 2s | S | S | 0 | 0 | Fair | |
| Davenport, Iowa | 29.29 | 744.0 | 29.92 | 760.0 | 49 | 9.4 | 67 | SW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.34 | 643.6 | ..... | ..... | 29 | — 1.7 | 89 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Decatur, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Denison, Texas | 29.24 | 742.7 | 30.02 | 762.5 | 62 | 16.7 | 88 | S | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.76 | 628.9 | 29.98 | 761.5 | 29 | — 1.7 | 67 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Des Moines, Iowa | 28.99 | 736.3 | 29.86 | 758.4 | 47 | 8.3 | 48 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Detroit, Michigan | 29.36 | 745.7 | 30.04 | 763.0 | 38 | 3.3 | 91 | SW | 4 | 1.8 | ..... | ..... | Fog | ..... | SW | 0.08 | 2.0 | Foggy | |
| Dodge City, Kansas | 27.27 | 692.6 | 29.60 | 751.8 | 34 | 1.1 | 79 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.19 | 741.4 | 29.89 | 759.2 | 46 | 7.8 | 62 | SW | 5 | 2.2 | ..... | 8k | Fog | SW | Calm | 0 | 0 | Fair | |
| Duluth, Minnesota | 29.01 | 736.8 | 29.69 | 754.1 | 38 | 3 3 | 91 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0.20 | 5.1 | Cloudy | |
| Eagle Pass, Texas | 29.22 | 742.2 | 29.94 | 760.5 | 67 | 19.4 | 84 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Eastport, Maine | 30.02 | 762.5 | 30.09 | 764.3 | 31 | — 0.6 | 84 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 70 | 21.1 | 95 | S | ..... | ..... | 1 | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.27 | 667.2 | ..... | ..... | 45 | 7.2 | 24 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.36 | 745.7 | 30.08 | 764.0 | 46 | 7.8 | 84 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.18 | 3.3 | Clear | |
| Escanaba, Michigan | 29.08 | 738.6 | 29.74 | 755.4 | 36 | 2.2 | 71 | S | 8 | 3.6 | ..... | ..... | 10ks | ..... | W | Inap. | Inap. | Cloudy | |
| Florence, Arizona | 28.60 | 726.4 | 30.20 | 767.1 | 40 | 4.4 | 31 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.99 | 710.9 | ..... | ..... | 21 | — 6.1 | 57 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Fort Craig, New Mexico | 25.67 | 652.0 | 29.64 | 752.8 | 31 | — 0.6 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.23 | 640.8 | 30.19 | 766.8 | 38 | 3.3 | 37 | Calm | 0 | 0 | ..... | 2c | 0 | SW | ..... | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.44 | 747.8 | 29.96 | 761.0 | 64 | 17.8 | 78 | S | 11 | 4.9 | ..... | 2k | 0 | W | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.69 | 728.7 | 29.94 | 760.5 | 62 | 16.7 | 88 | SE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.49 | 698.2 | ..... | ..... | 23 | — 5.0 | 86 | SW | 10 | 4.5 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Fair | |
| Fort McKavett, Texas | 27.79 | 705.8 | 29.67 | 753.6 | 63 | 17.2 | 83 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.74 | 730.0 | 29.84 | 757.9 | 55 | 12.8 | 93 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Stevenson, Dakota | 28.06 | 712.7 | ..... | ..... | 21 | — 6.1 | 85 | NW | 28 | 12.5 | ..... | 0 | 5s | ..... | NW | 0 | 0 | Cloudy | |
| Fredericksburg, Texas | 28.31 | 719.1 | 29.85 | 758.2 | 65 | 18.3 | 94 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 30.08 | 764.0 | 30.13 | 765.3 | 67 | 19.4 | 95 | SE | 8 | 3.6 | ..... | ..... | 8s | ..... | SE | 0 | 0 | Cloudy | |
| Graham, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Grand Haven, Michigan | 29.30 | 744.2 | 29.95 | 760.7 | 49 | 9.4 | 57 | SW | 23 | 10.3 | ..... | 0 | 0 | ..... | ..... | 0.07 | 1.8 | Clear | |
| Indianapolis, Indiana | 29.26 | 743.2 | 30.04 | 763.0 | 52 | 11.1 | 93 | NW | 2 | 0.9 | ..... | 0 | Fog | ..... | Calm | 0.12 | 3.0 | Clear | |
| Indianola, Texas | 30.08 | 764.0 | 30.10 | 764.5 | 67 | 19.4 | 95 | S | 6 | 2.7 | ..... | 8cs | 2s | Calm | S | Inap. | Inap. | Cloudy | |
| Jacksboro, Texas | 28.90 | 734.0 | 30.02 | 762.5 | 60 | 15.6 | 65 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.31 | 769.9 | 30.34 | 770.6 | 58 | 14.4 | 88 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Keokuk, Iowa | 29.28 | 743.7 | 29.88 | 758.9 | 64 | 12.2 | 43 | NW | 8 | 3.6 | ..... | 1k | 2s | W | W | Inap. | Inap. | Fair | |
| Key West, Florida | 30.20 | 767.1 | 30.24 | 768.1 | 71 | 21.7 | 80 | E | 9 | 4.0 | ..... | 5k | 0 | E | ..... | 0 | 0 | Fair | |
| Kittyhawk North Carolina | 30.16 | 766.1 | 30.18 | 766.6 | 57 | 13.9 | 87 | W | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.24 | 742.7 | 30.24 | 768.1 | 55 | 12.8 | 74 | SW | 3 | 1.3 | ..... | 5k | Sm'e | W | ..... | 0 | 0 | Fair | |
| La Crosse, Wisconsin | 29.07 | 738.4 | 29.79 | 756.7 | 53 | 11.7 | 37 | SW | 12 | 5.4 | ..... | 8k | 0 | SW | ..... | 0 | 0 | Fair | |
| La Mesilla, New Mexico | 26.14 | 663.8 | 30.29 | 769.4 | 31 | — 0.6 | 79 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.57 | 751.1 | 29.90 | 759.4 | 71 | 21.7 | 80 | SE | 6 | 2.7 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.99 | 761.7 | 29.82 | 757.4 | 50 | 10.0 | 72 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.80 | 756.9 | 30.15 | 765.8 | 49.0 | 9.4 | 85 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Louisville, Kentucky | 29.54 | 750.3 | 30.10 | 764.5 | 61 | 16.1 | 66 | S | 6 | 2.7 | ..... | 0 | 2s | Calm | ..... | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.48 | 748.8 | 30.16 | 766.1 | 58 | 14.4 | 64 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Madison, Wisconsin | 29.87 | 758.3 | 29.85 | 758.2 | 47 | 8.3 | 62 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.99 | 736.3 | 29.69 | 754.1 | 41 | 5.0 | 57 | S | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Mason, Texas | 28.41 | 721.6 | 30.14 | 765.5 | 64 | 17.8 | 83 | S | 4 | 1.8 | ..... | 1cs | 2s | W | S | 0 | 0 | Fair | |
| Memphis, Tennessee | 29.85 | 758.2 | 30.17 | 766.3 | 62 | 16.7 | 83 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.17 | 740.9 | 29.90 | 759.4 | 47 | 8.3 | 62 | SW | 22 | 9.8 | ..... | 0 | Haze | ..... | ..... | 0.08 | 2.0 | Clear | |
| Mobile, Alabama | 30.24 | 768.1 | 30.28 | 769.1 | 62 | 16.7 | 94 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0.02 | 0.5 | Cloudy | |
| Montgomery, Alabama | 30.06 | 763.5 | 30.30 | 769 6 | 57 | 18.9 | 87 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Morgantown, West Virginia | 29.16 | 738.1 | 30.09 | 764.3 | 60 | 15.6 | 60 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Mt. Washington, N. H. | 23.62 | 599.9 | 29.98 | 761.5 | 32 | 0.0 | 100 | NW | 72 | 92.2 | ..... | ..... | 10n | ..... | NW | 1.10 | 27.9 | Light rain | |
| Nashville, Tennessee | 29.64 | 752.6 | 30.17 | 766.3 | 61 | 16.1 | 66 | S | 3 | 1.3 | ..... | 5k | Haze | SW | ..... | 0 | 0 | Fair | |
| New Haven, Connecticut | 29.97 | 761.2 | 30.09 | 764.3 | 38 | 3.3 | 91 | N | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| New London, Connecticut | 30.06 | 763.5 | 30.11 | 764.8 | 39 | 3.9 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0.02 | 0.5 | Dense fog | |
| New Orleans, Louisiana | 30.16 | 766 1 | 30.22 | 767.6 | 59 | 15.0 | 88 | SE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 30.05 | 763.3 | 30.10 | 764.5 | 37.5 | 3.0 | 100 | SE | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0.02 | 0.5 | Dense fog | |
| New York, New York | 29.94 | 760.5 | 30.12 | 765.0 | 39 | 3.9 | 81 | NW | 1 | 0.4 | ..... | Haze | Fog | ..... | Calm | 0.09 | 2.3 | Dense fog | |
| Norfolk, Virginia | 30.10 | 764.5 | 30.16 | 766.1 | 60 | 15.6 | 82 | SW | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.03 | 686.6 | 29.65 | 753.1 | 35 | 1.7 | 61 | N | 12 | 5.4 | ..... | 2cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Olympia, Washington Ter. | 29.74 | 755.4 | 29.77 | 756.1 | 33.4 | 0.8 | 89 | W | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | 0.60 | 15.2 | Light snow | |
| Omaha, Nebraska | 28.72 | 729.5 | 29.81 | 757.2 | 46 | 7.8 | 49 | NW | 6 | 2.7 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.74 | 755.4 | 30.07 | 763.8 | 49 | 9.4 | 71 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Pembina, Dakota | 28.86 | 733.0 | 29.78 | 756.1 | 22 | — 5.6 | 100 | NW | 20 | 8.9 | ..... | ..... | 10s | ..... | Calm | 0.45 | 11.4 | Cloudy | |
| Philadelphia, Pa | 30.07 | 763.8 | 30.12 | 765.0 | 43 | 6.1 | 75 | E | 1 | 0.4 | ..... | 0 | Sm'e | ..... | Calm | Inap. | Inap. | Smoky | |
| Phœnix, Arizona | 28.92 | 734.6 | 30.80 | 782.3 | 43 | 6.1 | 59 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.69 | 449.3 | 29.90 | 759.4 | 9 | —12.8 | 15 | SW | 16 | 7.2 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Ploche, Nevada | 24.06 | 611.1 | 29.83 | 757.7 | 29 | — 1.7 | 67 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.30 | 744.2 | 30.10 | 764.5 | 56 | 13.3 | 69 | Calm | 0 | 0 | ..... | 10k | Sm'e | W | Calm | 0 | 0 | Cloudy | |
| Port Huron, Michigan | 29.35 | 745.5 | 30.02 | 762.6 | 42 | 5.6 | 91 | S | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.14 | 3.6 | Clear | |
| Portland, Maine | 30.02 | 762.5 | 30.07 | 763.8 | 38 | 3.3 | 81 | S | 2 | 0.9 | ..... | ..... | Fog | ..... | ..... | 0.01 | 0.3 | Foggy | |
| Portland, Oregon | 29.79 | 756.7 | 29.89 | 759.2 | 41.0 | 5.0 | 91 | SE | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | 0.59 | 15.0 | Light rain | |
| Prescott, Arizona | 24.79 | 629.6 | 30.15 | 765.8 | 24 | — 4.4 | 48 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Punta Rassa, Florida | 30.29 | 769.4 | 30.31 | 769.9 | 66 | 18.9 | 79 | E | 10 | 4.5 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Red Bluff, California | 29.76 | 756.4 | 30.15 | 765.8 | 50 | 10.0 | 86 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Rio Grande City, Texas | 29.85 | 758.2 | 30.07 | 763.8 | 70 | 21.1 | 85 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Rochester, New York | 29.45 | 748.0 | 30.07 | 763.8 | 45 | 7.1 | 84 | W | 10 | 4.5 | ..... | 0 | Fog | ..... | ..... | 0.11 | 2.8 | Clear | |
| Roseburg, Oregon | 29.35 | 745.5 | 29.92 | 760.0 | 47.0 | 8.3 | 70 | S | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | 0.20 | 5.1 | Light rain | |
| Sacramento, California | 30.10 | 764.5 | 30.19 | 766.8 | 50 | 10.0 | 86 | S | 3 | 1.3 | ..... | ..... | 10ks | ..... | W | 0.19 | 4.8 | Cloudy | |
| St. Louis, Missouri | 29.47 | 748.5 | 30.03 | 762.8 | 60 | 15.6 | 82 | W | 7 | 3.1 | ..... | ..... | 10n | ..... | SW | 0.13 | 3.3 | Light rain | |
| St. Marks, Florida | 30.29 | 769.4 | 30.31 | 769.9 | 52 | 11.1 | 100 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| St. Paul, Minnesota | 28.94 | 735.1 | 29.78 | 756.4 | 39 | 3.9 | 63 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.67 | 652.0 | 30.00 | 762.0 | 42 | 5.6 | 40 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| San Antonio, Texas | 29.37 | 746.0 | 29.95 | 760.7 | 66 | 18.9 | 95 | SE | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| San Diego, California | 30.11 | 764.8 | 30.16 | 766.0 | 51 | 10.6 | 93 | E | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Sandusky, Ohio | 29.41 | 747.0 | 30.09 | 764.3 | 48 | 8.9 | 93 | SW | 7 | 3.1 | ..... | 0 | Fog | ..... | Calm | 0.17 | 4.3 | Clear | |
| Sandy Hook, New Jersey | 30.06 | 763.5 | 30.09 | 764.3 | 41 | 5.0 | 91 | SW | 4 | 1.8 | ..... | 1k | Haze | W | Calm | 0.27 | 6.9 | Hazy | |
| San Francisco, California | 30.14 | 765.5 | 30.20 | 767.1 | 52 | 11.1 | 79 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.49 | 12.4 | Clear | |
| Santa Fé, New Mexico | 23.28 | 591.3 | 29.82 | 757.4 | 32 | 0.0 | 50 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.23 | 767.8 | 30.32 | 770.1 | 62 | 16.7 | 88 | SW | 6 | 2.7 | ..... | 2ck | Fog | SW | Calm | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.92 | 760.0 | 30.14 | 765.5 | 61 | 16.1 | 88 | S | 4 | 1.8 | ..... | 2k | 0 | SW | ..... | 0 | 0 | Fair | |
| Silver City, New Mexico | 24.34 | 618.2 | 30.72 | 780.3 | 32 | 0.0 | 50 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.26 | 769.1 | 30.32 | 770.1 | 55 | 12.8 | 100 | W | 6 | 2.7 | ..... | 10cs | Haze | SW | Calm | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 29.94 | 760.5 | 30.08 | 764.0 | 35 | 3.3 | 91 | N | 1 | 0.4 | ..... | ..... | Fog | ..... | ..... | 0.08 | 2.0 | Foggy | |
| Stockton, Texas | 27.01 | 686.0 | 30.07 | 763.8 | 44 | 6.7 | 92 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.08 | 764.0 | 30.12 | 765.0 | 37 | 2.8 | 90 | S | 16 | 7.2 | ..... | ..... | Fog | ..... | S | 0 | 0 | Foggy | |
| Toledo, Ohio, | 29.38 | 746.2 | 30.07 | 763.8 | 45 | 7.2 | 84 | S | 3 | 1.3 | ..... | ..... | Fog | ..... | Calm | 0.10 | 2.5 | Foggy | |
| Tucson, Arizona | 27.61 | 701.3 | 30.16 | 766.1 | 42 | 5.6 | 49 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.57 | 751.1 | 30 07 | 763.8 | 40.0 | 4.4 | 82 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.06 | 1.5 | Cloudy | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 34 | 1.1 | 100 | SE | ..... | ..... | 4 | ..... | 10s | ..... | SE | 0.34 | 8.6 | Cloudy | |
| Uvalde, Texas | 29.14 | 740.1 | 29.95 | 760.7 | 68 | 20.0 | 90 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.98 | 761.5 | 30.24 | 768.1 | 61 | 16.1 | 94 | SE | 5 | 2.2 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Virginia City, Montana | 24.13 | 612.9 | 29.61 | 752.1 | 25 | — 3.9 | 75 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Visalia, California | 29.81 | 757.2 | 30.19 | 766.8 | 46 | 7.2 | 92 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 30.02 | 762.5 | 30.14 | 765.5 | 42 | 5.6 | 83 | NW | 2 | 0.9 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 86 | 2.2 | 53 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.19 | 766.8 | 30.26 | 768.6 | 61 | 16.1 | 88 | SW | 4 | 1.8 | ..... | 5c | Haze | Calm | Calm | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.67 | 652.0 | 30.03 | 762.8 | 34 | 1.1 | 61 | SW | 6 | 2.7 | ..... | 5k | 0 | SW | ..... | 0 | 0 | Fair | |
| Wood's Holl, Mass | 30.03 | 762.8 | 30.07 | 763.8 | 39 | 3.9 | 91 | SE | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| Yankton, Dakota | 28.65 | 727.7 | 29.96 | 761.0 | 36 | 2.2 | 71 | NW | 7 | 3.1 | ..... | 2c | 0 | SW | ..... | 0 | 0 | Fair | |
| Yuma, Arizona | 29.91 | 759.7 | 30.08 | 764.0 | 47 | 8.3 | 77 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.44 | 722.4 | 29.61 | 757.2 | 63 | 17.2 | 72 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.10 | 766.1 | 30.21 | 767.3 | 71 | 21.1 | 75 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.25 | 641.3 | ..... | ..... | 64.5 | 18.1 | 87 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.16 | 4.0 | ..... | Thomas Herran. |
| Navassa, W. I | 29.96 | 761.0 | 30.04 | 763.0 | 76 | 24.4 | ..... | NE | 8.1 | 3.6 | ..... | ..... | ..... | ..... | ..... | 0.12 | 3.0 | Cloudy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.01 | 762.2 | 30.01 | 762.2 | 83 | 28.3 | 79 | E | ..... | ..... | 2 | 8c | 6k | E | ..... | 0 | 0 | Fair | O. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,677 (?) ft., or 876.9 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,523 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.8 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,870 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,097.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m., Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,385.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.656 inches; Boise City, 2.96 in.; Camp Grant, 4.600 in.; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.39 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

## UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | BAROMETER. As read off. Inches. | BAROMETER. As read off. Millimeters. | BAROMETER. Attached Thermometer. Fahrenheit. | BAROMETER. Attached Thermometer. Centigrade. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Up'er From— | CLOUDS. Direction. Low'r From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | SEA-SWELL. Character. | SEA-SWELL. Direction from— | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.15 | 765.8 | 62 | 11.1 | 60 | 10.0 | 93 | Calm | 0 | 0 | .... | ..... | 10 | ..... | ..... | 1.35 | 34.3 | ..... | ..... | Overcast..... | |
| Navy Yard, Pensacola, Fla. | 30.40 | 772.1 | 63 | 17.2 | 63 | 17.2 | 89 | E | 13 | 5.8 | .... | ..... | 2 | ..... | E | 0 | 0 | ..... | ..... | Fair ..... | |
| Navy Yard, Portsmouth, N.H | 30.08 | 764.0 | 60 | 15.6 | 35 | 1.7 | 80 | SSW | 1 | 0.4 | ..... | ..... | Fog | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Naval Hospital, Yokohama, Japan.....* | 29.82‡ | 757.4‡ | ..... | ..... | 41.8 | 5.4 | 83 | N | ..... | ..... | 1 | ..... | 4k;ck | ..... | W | Slight | Slight | ..... | ..... | Fair..... | |
| Adams, Panama ..... | 29.99 | 761.7 | 78 | 25.6 | 75 | 23.9 | 100 | NW | ..... | ..... | 2 | ..... | 2 | N;W | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Alaska, N 35° 10', W. 121° 08'..... | 30.31 | 769.9 | 62 | 16.7 | 54 | 12.2 | 80 | NNW | ..... | ..... | 3 | ..... | 2 | ..... | SE | ..... | ..... | Long | NW | Foggy ..... | |
| Alliance, Genoa, Italy..... | 30.43‡ | 772.9‡ | ..... | ..... | 60 | 15.6 | 71 | S | ..... | ..... | 1-2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Ashuelot, Hong-Kong, China. ..... | 30.13‡ | 764 3‡ | ..... | ..... | 63 | 17.2 | 78 | ESE | ..... | ..... | 3 | ..... | 10 | ..... | E | ..... | ..... | Smooth | ..... | Misty..... | |
| Canonicus, New Orleans, La..... | 30.20 | 767.1 | 47 | 8.3 | 62 | 16.7 | 94 | SE | ..... | ..... | 3 | ..... | 2 | ..... | SE | ..... | ..... | ..... | ..... | Fair..... | |
| Colorado, New York, N. Y..... | 30 09 | 764.3 | 38 | 3.3 | 38 | 3.3 | 100 | S | 1 | 0.4 | ..... | ..... | 2 | ..... | N | 0.02 | 0.5 | ..... | ..... | Hazy..... | |
| Constitution Lisbon, Portugal..... | 30.41‡ | 772.4‡ | ..... | ..... | 65 | 18.3 | 73 | ESE | ..... | ..... | 2 | ..... | 5 | ..... | Calm | ..... | ..... | ..... | ..... | Pleasant..... | |
| Despatch, N. 40° 44', E. 27° 39'.. ..... | 30.27‡ | 768.8‡ | ..... | ..... | 55 | 12.8 | 45 | SW | ..... | ..... | 2 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | ..... | Clear..... | |
| Franklin, Norfolk, Va..... | 30.28 | 769.1 | 69 | 20.6 | 62 | 16.7 | 77 | SW | 7 | 3.1 | .... | ..... | 10 | ..... | NW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Gettysburg, Genoa, Italy ..... | 30.35‡ | 770.9‡ | ..... | ..... | 62 | 16.7 | 83 | SE | ..... | ..... | 1 | ..... | 2 | ..... | S;E | 0 | 0 | ..... | ..... | Clear..... | |
| Hartford, Montevideo, Uruguay... | 29.98 | 761.5 | 69 | 20.6 | 65 | 18.3 | 78 | SE | ..... | ..... | 2 | ..... | 10 | ..... | SE | 0.11 | 2.8 | Smooth | ..... | Cloudy..... | |
| Lackawana, Panama.....* | 29.71‡ | 754.6‡ | ..... | ..... | 74 | 23.3 | 95 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.1 | 3. | Smooth | ..... | Cloudy..... | |
| Michigan, Erie, Pa.....† | 30.42 | 762.5 | ..... | ..... | 46 | 7.8 | 92 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Monocacy, Shanghai, China.....* | 30.34‡ | 770.6‡ | ..... | ..... | 42 | 5.6 | 83 | ENE | ..... | ..... | 2 | ..... | 8 | ..... | ENE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongehela, Yokohama, Japan ....* | 29.79‡ | 756.7‡ | ..... | ..... | 48 | 8.9 | 39 | NNW | ..... | ..... | 1 | ..... | 5 | ..... | W | Light | Light | ..... | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C..... | 30.35 | 770.9 | 61 | 16.1 | 59 | 15.0 | 100 | WSW | 2 | 0.9 | ..... | ..... | 5 | ..... | WSW | 0 | 0 | ..... | ..... | Misty..... | |
| Onward, Callao, Peru.....† | 30.04 | 763.0 | ..... | ..... | 65 | 18.3 | 94 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Foggy ..... | |
| Palos, Tientsin, China..... | 30.13 | 765.3 | 35 | 1.7 | 37 | 2.8 | 53 | WSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 43 | 6.1 | 83 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Fair ..... | |
| Pensacola, Talcahuano, Chili ..... | 30.05‡ | 763.3‡ | ..... | ..... | 60 | 15.6 | 94 | S | 8 | 3.6 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair ..... | |
| Powhatan, N. 14° 00', W. 70° 32'..... | 29.98‡ | 761.5‡ | ..... | ..... | 79 | 26.1 | 78 | E | ..... | ..... | 3 | ..... | 10 | ..... | E | ..... | ..... | Smooth | E | Cloudy..... | |
| Quinnebaug, N. 39° 52', E. 4° 28'..... | 30.51‡ | 774 9‡ | ..... | ..... | 61 | 16.1 | 77 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Ranger. Nagasaki, Japan .....* | 30.20‡ | 767.1‡ | ..... | ..... | 53 | 11.7 | 61 | NW | ..... | ..... | 2 | ..... | 5? | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy?..... | |
| Richmond, N. 36° 41', E. 15° 44'..... | 30.30‡ | 769.6‡ | ..... | ..... | 55 | 12.8 | 45 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | N | Clear. ..... | |
| Rio Bravo, Brownsville, Texas..... | 30.02 | 762.5 | 70 | 21.1 | 69 | 20.6 | 95 | SE | ..... | ..... | 2 | ..... | 5 | ..... | S | ..... | ..... | ..... | ..... | Fair ..... | |
| Santee, Annapolis, Md... ..... | 30.15‡ | 765.8‡ | ..... | ..... | 40 | 4.4 | 91 | NNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Hazy..... | |
| Saratoga, Hampton Roads, Va..... | 30.28 | 769.1 | ..... | ..... | 52 | 11.1 | 86 | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds..... | |
| St. Louis, League Island, Pa ..... | 30.04 | 763.0 | 65 | 18.3 | 41 | 5.0 | 82 | Calm | 0 | 0 | ..... | ..... | 5 | ..... | NW | 0 | 0 | ..... | ..... | Misty..... | |
| Supply, N. 32° 04', W. 73° 02'..... | 30.34‡ | 770.6‡ | ..... | ..... | 65 | 18.3 | 84 | WNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Misty..... | |
| Trenton Villafranca, France..... | 30.45‡ | 773.4‡ | ..... | ..... | 65 | 18.3 | 40 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | None | ..... | Clear..... | |
| Tuscarora, N. 15° 45', W. 96° 58'..... | 29.92‡ | 760.0‡ | ..... | ..... | 77 | 25.0 | 86 | ENE | ..... | ..... | 2 | ..... | 2 | ..... | Calm | 0 | 0 | Heavy | S | Clear..... | |
| Wabash, Boston, Mass..... | 30.26‡ | 768.6‡ | ..... | ..... | 35 | 1.7 | 80 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Light rain... | |
| Wyoming, Constantinople, Turkey | 30.22‡ | 767.6‡ | ..... | ..... | 47 | 8.3 | 77 | NE | ..... | ..... | 1-2 | ..... | 2 | ..... | NE | ..... | ..... | Smooth | NE | Fair ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | |
| S. S. Colima, N. 18° 34', W. 108° 59'...† | | 30.02‡ | 762.5‡ | 76 | 24.4 | 100 | WNW | | | 3 | | 8 | | SE | 0 | Small | W | Misty | Capt. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Headell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, Hong-Kong, China...* | | 29.99‡ | 761.7‡ | 61 | 16.1 | 88 | E | | | 4 | | ks | | E | | Smooth | | Misty | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, Yokohama, Japan...† | | 29.87‡ | 758.7‡ | 56 | 13.3 | 94 | SW | | | 4 | | sn | | Var. | | Heavy | | Raining | Capt. W. H. Kidley. |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 26° 01', W. 66° 12' | | 30.30‡ | 769.6‡ | 72.5 | 22.5 | 48 | NNW | | | 4 | | 5 | | NW | | Mod'ate | N | Fine | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Lo'wr 0—10. | Upper. From— | Lower. From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, St. George's Channel | | 30.43‡ | 772.9‡ | 54 | 12.2 | | SW | | | 4 | | 5 | | NW | 0 | | | Partly cl'dy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.**

Furnished by the cooperation of the Observer named.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASS'G'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 11, 1879.

**7:35 A. M. WASHINGTON mean time.**

9:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:38 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 30.27 | 768.8 | 60.3 | 15.7 | 79 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | |
| Nemours | ..... | ..... | 30.35 | 770.9 | 64.4 | 18.0 | 66 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Kesxuche. |
| Algiers | ..... | ..... | 30.32 | 770.0 | 58.6 | 14.8 | 80 | NNE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Tourilliere. |
| La Calle | ..... | ..... | 30.35 | 771.0 | 60.8 | 16.0 | 76 | NNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Foufrede. |
| Tunis | ..... | ..... | 30.37 | 771.4 | 64.4 | 18.0 | 44 | NNW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 30.39 | 772.0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 30.26 | 768.7 | 60.4 | 15.8 | 25 | SSW | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Herbin. |
| Tebessa | ..... | ..... | 30.38 | 771.7 | 53.2 | 11.8 | 57 | W | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Watrin. |
| Geriville | ..... | ..... | 30.20 | 768.6 | 52.9 | 11.6 | 93 | SW | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Brugniaux. |
| Laghouat | ..... | ..... | 30.36 | 771.1 | 54.3 | 12.4 | 37 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bertrand. |
| Biskra | ..... | ..... | 30.38 | 771.6 | 65.7 | 18.7 | 42 | SE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.44 | 747.8 | 29.98 | 761.6 | 62.4 | 16.9 | 32 | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.02 | 737.1 | 29.80 | 756.8 | 46.0 | 7.8 | 75 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.303 | 7.7 | ..... | Dr. Wierzbiski |
| Eperies | 28.95 | 735.3 | 29.84 | 757.8 | 47.8 | 8.8 | 73 | NW | ..... | ..... | 5 | ..... | 10k | ..... | SE | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.72 | 729.6 | 29.95 | 760.8 | 61.7 | 16.5 | 27 | WSW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.50 | 724.0 | 29.94 | 760.4 | 52.9 | 11.6 | 50 | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.055 | 1.4 | ..... | Prof. A. Gottschling. |
| Kremsmünster | 28.66 | 727.9 | 30.00 | 761.9 | 54.0 | 12.2 | 46 | NNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner. |
| Lemberg | 28.72 | 729.4 | 29.72 | 754.8 | 43.0 | 6.1 | 78 | NW | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0.256 | 6.5 | ..... | Dr. T. Stanecki. |
| Pola | 30.01 | 762.2 | 30.12 | 765.1 | 54.5 | 12.5 | 51 | SSE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | I.R. Hydrographic Office |
| Szegedin | 29.45 | 747.9 | 29.91 | 759.8 | 48.9 | 9.4 | 69 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Julius Csics, S. J. |
| Trieste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Vienna | 30.03 | 762.8 | 30.13 | 765.4 | 48.4 | 9.1 | 89 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | P. Busin. |
| ..... | 29.25 | 743.0 | 29.97 | 761.2 | 54.5 | 12.5 | 68 | W | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 367 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:46, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Royal Observatory |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. E. de Cae |
| Maeseyck | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Pierrot |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

# BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instru-m'tal error and temperature. Inches. | Millimeters. | Reduced to sea-level. Inches. | Millimeters. | Temperature of the Air. Fahrenheit. | Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Velocity. Miles per hour. | Meters per second. | Force 1—10. | Clouds. Amount. Up'er 0—10. | Low'r 0—10. | Direction. Upper. From— | Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.10 | 764.5 | 30.20 | 767.1 | 42.0 | 5.6 | | W | 22 | 9.8 | | | 2 | | | 0.660 | 16.76 | Blue sky | W. Boswell. |
| Ardrossan | 30.28 | 769.1 | 30.29 | 769.4 | 45 | 7.2 | | NNW | | | 3 | | 7 | | | | | D. clouds | William McNeil. |
| Armagh, Observatory | | | 30.40 | 772.1 | 44.5 | 6.9 | | W | 3 | 1.3 | | | 8 | | | | | D. clouds | S. Call. |
| Bidston, (Liverpool Obs.) | | | 30.39 | 771.9 | 43.7 | 6.5 | | WNW | 11 | 4.9 | | | 7 | | | | | D. clouds | John Hartnup. |
| Bolton, (Sharples) | | | 30.36 | 771.1 | 42.2 | 5.7 | | WSW | 6 | 2.7 | | | 5 | | | | | D. clouds | Thomas Mackereth. |
| Bradford, Yorkshire | 29.93 | 760.2 | 30.33 | 770.4 | 46.1 | 7.8 | | W | | | 2 | | 6 | | | 0 | 0 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.91 | 759.7 | 29.94 | 760.5 | 81 | 27.2 | | NE | | | 1 | | 3 | | | | | D. clouds | Pvt. G. Surgener, A. H. O. |
| Cambridge, Observatory | | | 30.38 | 771.6 | 48.0 | 8.9 | | N | | | 1 | | 10 | | | | | Overcast | H. Todd. |
| Cardington | | | 30.29 | 769.4 | 48.0 | 8.9 | | N | | | 1 | | 4 | | | | | D. clouds | John McLaren. |
| Chatham, School M. E. | 30.24 | 768.1 | 30.38 | 771.6 | 46.1 | 7.8 | | N | | | 1 | | 7 | | | | | D. clouds | Corpl. Daly, R. E. |
| Dartmoor | 28.73 | 729.7 | 30.22 | 767.6 | 50.0 | 10.0 | | W | | | 3 | | 4 | | | | | Fine | Alexander Watt. |
| Donaghadee | 30.32 | 770.1 | 30.36 | 771.1 | 46 | 7.8 | | W | | | 3 | | 5 | | | | | D. clouds | J. Mac Gowan. |
| Dover | 30.33 | 770.4 | 30.36 | 771.1 | 47 | 8.3 | | NNE | | | 4 | | 5 | | | | | ½ clouded | J. Costello. |
| Falmouth, Observatory | 30.24 | 768.1 | 30.48 | 774.2 | 50.4 | 10.2 | | NNW | | | 1 | | 6 | | | | | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.43 | 696.7 | 29.75 | 755.6 | 82.0 | 27.8 | | E | | | 2 | | 0 | | | | | Blue sky | Pvt. G. Salmon, A.H.O. |
| Free Town, (Sierra Leone) | 29.69 | 754.1 | 29.92 | 760.0 | 89 | 31.7 | | N | | | 1 | | 8 | | | | | D. clouds | |
| Galway, Queen's College | | | 30.35 | 770.9 | 51 | 10.6 | | S | | | 1 | | 5 | | | | | Blue sky | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.27 | 768.8 | 30.32 | 770.1 | 56.8 | 13.8 | | E | | | 4 | | 2 | | | | | Blue sky | Sergt. Wm. Allen, A.H.O. |
| Glasgow, Observatory | 30.07 | 763.8 | 30.28 | 769.1 | 43.8 | 6.8 | | W | | | 6 | | 6 | | | | | D. clouds | D. G. Maclean. |
| Great Yarmouth | 30.34 | 770.6 | 30.35 | 770.9 | 44 | 6.7 | | N | | | 3 | | 4 | | | | | D. clouds | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.20 | 767.1 | 30.38 | 771.6 | 50.3 | 10.2 | | NNW | | | 1 | | 8 | | | | | D. clouds | The Staff, for G. B. Airy. |
| Guernsey | 30.21 | 767.3 | 30.43 | 772.9 | 49.5 | 9.7 | | NNW | | | 3 | | 3 | | | | | D. clouds | Dr. S. E. Hoskins, F.R.S. |
| Helston | 30.40 | 772.1 | 30.52 | 775.2 | 53 | 11.7 | | N? | | | 0? | | 0 | | | 0.3 | 8. | Fine | M. P. Moyle. |
| Holyhead | 30.34 | 770.6 | 30.40 | 772.1 | 46 | 7.8 | | WNW | | | 3 | | 6 | | | | | D. clouds | John Tilston. |
| Jersey | 30.15 | 765.8 | 30.45 | 773.4 | 49.4 | 9.7 | | N | | | 3 | | 4c | | | | | D. clouds | J. Fisher. |
| Kew, Observatory | 30.35 | 770.9 | 30.39 | 771.9 | 46.5 | 8.1 | | N | 8 | 3.6 | | | 6 | | | | | Threatening | The Meteorological Of. |
| Leicester, Museum | 30.10 | 764.5 | 30.37 | 771.4 | 45.3 | 7.4 | | NW | | | 1 | | 5 | | | | | D. clouds | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 30.28 | 769.1 | 30.36 | 771.1 | 54 | 12.2 | | NW | | | 1 | | 4n | | | Blank | Blank | D. clouds | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 30.08 | 764.0 | 30.17 | 766.3 | 43 | 6.1 | | W | | | 3 | | 1 | | | | | ¼ clouded | W. D. Penny. |
| Nassau, (Bahamas) | | | 30.22 | 767.6 | 71.8 | 22.1 | | NE | | | 1 | | 4 | | | | | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 30.17 | 766.3 | 30.36 | 771.1 | 47.0 | 8.3 | | WNW | | | 1 | | 10k | | WNW | 0 | 0 | Overcast | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.84 | 757.9 | 30.38 | 771.6 | 44.8 | 7.1 | | NW | | | 3 | | 9 | | | | | D. clouds | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | | | 30.39 | 771.9 | 46 | 7.8 | | NNW | | | 1 | | 10 | | | | | Overcast | H. E. Bellamy. |
| Plymouth | 30.36 | 771.1 | 30.44 | 773.2 | 52.7 | 11.5 | | NW | | | 3 | | 4 | | | | | D. clouds | John Merrifield. |
| Roche's Point | 30.40 | 772.1 | 30.45 | 773.4 | 52 | 11.1 | | W | | | 2 | | 5 | | | | | ½ clouded | W. Kennedy. |
| Saint Ann's Head | 30.28 | 769.1 | 30.44 | 773.2 | 46 | 7.8 | | NW | | | 1 | | 2 | | | | | Blue sky | John C. Walker. |
| Sandwick Manse, (Orkneys. | | | 30.03 | 762.6 | 40 | 4.4 | | W | 42 | 18.8 | | | 10 | | | | | Showery | Dr. Hoskins. |
| Scutari, Cemetery, (Turkey | | | 30.06 | 763.5 | 54.8 | 12.7 | | SW | | | 2 | | 1 | | | | | Blue sky | W. H. Lyne. |
| Sheffield | 30.08 | 764.0 | 30.38 | 771.6 | 48.0 | 8.9 | | NNW | | | 2 | | 3 | | | | | D. clouds | W. F. Cooper. |
| Silloth Rectory | 30.30 | 769.6 | 30.33 | 770.4 | 47.2 | 8.4 | 68 | W | | | 3 | | 0 | | | 0.050 | 1.27 | Blue sky | Francis Redford, A. M. |
| Stonyhurst Observatory | 29.95 | 760.7 | 30.35 | 770.9 | 43.2 | 6.2 | | W | | | 2 | | 5 | | | | | D. clouds | Rev. S. J. Perry. |
| Stratfield Turgiss | 30.17 | 766.3 | 30.39 | 771.9 | 49.0 | 9.4 | | N | | | 2–3 | | 10 | | | | | Squally | C. H. Griffith, F.M.S. |
| Thurso | 30.04 | 763.0 | 30.10 | 764.5 | 42 | 5.6 | | WSW | | | 5 | | 4 | | | | | D. clouds | John Trotter. |
| Truro, Royal Institution | 30.38 | 771.6 | 30.43 | 772.9 | 55 | 12.8 | | N | | | 4 | | 4 | | | | | D. clouds | W. Newcombe. |
| Valencia, Observatory | 30.41 | 772.4 | 30.43 | 772.9 | 51.6 | 10.9 | | W | 16 | 7.2 | | | 10 | | | | | Misty | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | | | | | | | | | | | | | | | | | | | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | | | 30.04 | 763.0 | 60.0 | 15.6 | 83 | SE | | | 2 | | 10k | | | 0.04 | 1.0 | Covered | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | | | 30.14 | 766.3 | 44.0 | 6.7 | | W | | | 3 | | 5k | | | 0 | 0 | Cloudy | Andrew Gibb. |
| Mauritius, Observatory | 29.84 | 757.9 | 30.03 | 762.7 | 80.9 | 27.2 | 62 | ESE | 17.0 | 7.6 | | 0 | 3 | | ESE | 0 | 0 | Squally | C. Meldrum. |
| Melbourne, Observatory | 30.08 | 764.0 | 30.17 | 766.3 | 61.0 | 16.1 | 87 | SE | 2 | 0.9 | | | 2 | | | 0 | 0 | Fine | R. L. J. Ellery. |
| Monach L't-house, (Hebrides | | | 30.17 | 766.3 | 46 | 7.8 | | WNW | | | 4 | 3 | 5 | NW | | 0 | 0 | | J. Youngclause. |
| North Unst, (Shetland Is.) | | | 29.94 | 760.5 | 29 | —1.7 | | NW | | | 6 | 7 | 5 | NW | | | | Snowing | Robert Burnet. |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day,) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day,) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

| British Marine Series. Vessels. | Bar. corr. Inches | Millimeters | Reduced Inches | Millimeters | Fahrenheit | Centigrade | Per cent. | Wind From— | Miles per hour | Meters per second | Force | Clouds Up'er | Low'r | Upper From— | Lower From— | Sea or swell. Height scale 0–9 | Direction from— | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 35° 54', E. 14° 30' | | | 30.33‡ | 770.4‡ | 55.8 | 13.2 | | Calm | | | 0 | | 7 | | | | | Showery | Capt. W. J. L. Wharton. |
| Brig Alliance, N. 6° 40', W. 51° 20' | | | 29.95‡ | 760.7‡ | 83.5 | 28.6 | | ENE | | | 4 | | 5 | | | | | Misty | Capt. W. Scott. |
| S. S. Amanda, N. 21° 45', E. 37° 18' | | | 30.04‡ | 763.0‡ | 73.5 | 23.1 | | NW | | | 6 | | 2 | | | | | D. clouds | Capt. B. Boyes. |
| Barque Belle Isle, N. 23° 45', W. 81° 20' | | | 30.17 | 766.3 | 75 | 23.9 | | ENE | | | 5 | | 4 | | | 5 | NE | D. clouds | Capt. A. J. Brown. |
| Ship British Commodore, N. 39° 40', W. 50° 50' | | | 29.83 | 757.7 | 49 | 9.4 | | NW | | | 5 | | 8 | | | 5 | SW; NW | Squally | Capt. J. W. Thorne. |
| —— City of Agra, N. 3° 51', W. 31° 49' | | | 29.98‡ | 761.5‡ | 81 | 27.2 | | N | | | 4 | | 6c | | SE | | NE | D. clouds | Capt. Thos. Young. |
| Barque Commewyne, N. 22° 10' W. 57° 50' | | | 30.12‡ | 765.0‡ | 78 | 22.8 | | NE | | | 4 | | 6 | | | | | D. clouds | Capt. A. Buchan. |
| —— Denbighshire | | | | | | | | | | | | | | | | | | | Capt. H. Murdoch. |
| Barque Fedalina | | | | | | | | | | | | | | | | | | | Capt. H. L. Fox. |
| Barque Mertole, N. 47° 09', W. 11° 31' | | | 30.55‡ | 776.0‡ | 53.2 | 11.8 | | N | | | 3 | | 8 | | | | | D. clouds | Capt. E. W. Turner. |
| S. S. Nizam | | | | | | | | | | | | | | | | | | | Capt. Barlow. |
| S. S. Strathleven, N. 12° 31', E. 48° 15' | | | 29.89‡ | 759.2‡ | 77.5 | 25.3 | | NNE | | | 3 | | 5 | | | | | D. clouds | Capt. C. W. Pearson. |
| S. S. Wyberton, Aden, Arabia | | | 29.97‡ | 761.2‡ | 79.5 | 26.4 | | S | | | 1 | | 1 | | | | | Blue sky | Capt. W. R. McMontry. |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | | | | | | | | | | | | | | | | | | | Mr. Ansart. |
| San José | 26.30 | 668.0 | 30.02 | 762.5 | 68.0 | 17.2 | 80 | SE | | | 1 | | 8cs | | | 0 | 0 | | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.70 | 754.4 | 29.75 | 755.6 | 36.0 | 2.2 | 54 | NNW | | | 3 | | 2 | | | | | |
| Faröe | 30.00 | 762.0 | 30.02 | 762.5 | 36.3 | 2.4 | 72 | WNW | | | 6 | | 1 | | | | | |
| Godthaab, (Greenland) | 30.10 | 764.5 | 30.14 | 765.6 | 19.8 | — 6.8 | 68 | ENE | | | 4 | | 1 | | | | | |
| Stykkisholm, (Iceland) | | | | | | | | | | | | | | | | | | |
| Thorshavn, (Faröe) | 30.16 | 766.1 | 30.20 | 767.0 | 20.1 | — 6.6 | 60 | N | | | 4 | | 6 | | | | | |
| Vestervig | 29.75 | 755.6 | 29.92 | 759.9 | 35.2 | 1.8 | 85 | NW | | | 8 | | 6 | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.87 | 758.7 | 30.42 | 772.7 | 50.4 | 10.2 | 84 | W | | | 2 | | 5 | W | W | 0 | 0 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 30.21 | 767.4 | 30.33 | 770.3 | 53.6 | 12.0 | 71 | WNW | | | 1 | | 10 | | | 0 | 0 | Covered | Bonvallet, Director. |
| Avignon, Normal School | 30.17 | 766.4 | 30.26 | 768.4 | 67.6 | 19.8 | 42 | N | | | 2 | | 0 | | | 0 | 0 | Very clear | M. Giraud, Director. |
| Bar-sur-Seine | 29.79 | 756.7 | 30.36 | 771.2 | 45 3 | 7.4 | 91 | W | | | 1 | | 10 | | W | | | Light rain | C. Saillard, Director. |
| Beauvais, Normal School | 30.08 | 764.1 | 30.37 | 771.5 | 46.9 | 8.8 | 81 | N | | | 1 | | 10 | | | 0 | 0 | Covered | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.45 | 748.1 | 30.36 | 771.1 | 57.2 | 14 | 55 | SW | | | 2 | | 5 | | | 0 | 0 | Cloudy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.49 | 749.0 | 30.41 | 772.4 | 59.9 | 15.5 | 52 | W | | | 1 | | 2k | N | N | 0 | 0 | Slightly cl'dy | M. Marlot, Director. |
| Bourges, Normal School | 29.83 | 757.6 | 30.41 | 772.3 | 45.7 | 7.6 | 83 | W | | | 2 | | 8 | W | W | 0 | 0 | Very cloudy | A. Waquet, Director. |
| Brest, Naval Observatory | 30.17 | 766.3 | 30.41 | 772.5 | 52.9 | 11.6 | 85 | NW | | | 2 | | 10 | | NW | 0 | 0 | Misty | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.96 | 760.9 | 30.37 | 771.5 | 57.2 | 14 | 67 | E | | | 2 | | 0 | | | 0 | 0 | Clear | September, Director. |
| Caen, Normal School | 30.34 | 770.6 | 30.42 | 772.6 | 49.6 | 9.8 | 66 | NNW | | | 3 | | 5 | | NNW | 0 | 0 | Cloudy | M. Lair, Director. |
| Chartres, Normal School | 29.73 | 755.2 | 30.31 | 769.9 | 50.0 | 10 | 79 | NW | | | 3 | | 10 | | E | 0 | 0 | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 30.01 | 762.3 | 30.34 | 770.6 | 47.1 | 8.4 | 89 | NW | | | 3 | | 8 | NW | NW | 0 | 0 | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.95 | 735.2 | 30.30 | 769.6 | 59.5 | 15.3 | 42 | N | | | 1 | | 0 | | | 0 | 0 | | Alluard, Director. |
| Commercy, Normal School. | 29.43 | 747.6 | 30.32 | 770.1 | 44.8 | 7.1 | 88 | W | | | 3 | | 5kn | | W | 0 | 0 | Cloudy | Dr. Coulet, Director. |
| Commune de Grèasque* | 29.13 | 739.9 | 30.27 | 768.9 | 61.7 | 16.5 | 40 | NW | | | 6 | | 0 | | | 0 | 0 | Clear | M. Kina, Director. |
| Grenoble, Normal School | 29.56 | 750.8 | 30.33 | 770.4 | 57.6 | 14.2 | 44 | NNW | | | 1 | | k | NE | | 0 | 0 | | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 30.25 | 768.4 | 30.47 | 773.9 | 51.1 | 10.6 | 77 | NW | | | 1 | | 10 | | | 0.008 | 0.2 | Covered | Mouillot, Director. |
| Le Mans, Normal School | 30.12 | 765.0 | 30.43 | 773.0 | 50.5 | 10.3 | 84 | NW | | | 2 | | 8 | | WNW | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.42 | 747.2 | 30.35 | 771.0 | 57.4 | 14.1 | 58 | W | | | 4 | | 2 | | NW | 0 | 0 | Slightly cl'dy | Baudry, Director. |
| Lorient, Naval Observatory | 30.39 | 772.0 | 30.49 | 774.5 | 56.1 | 13.4 | 82 | WNW | | | 2 | | | SW | NW | 0 | 0 | | Lt T. Carré, Director. |
| Mâcon, Normal School | | | | | | | | | | | | | | | | | | | M. Galzin, Director |
| Mirecourt, Normal School | 29.29 | 744.0 | 30.40 | 772.2 | 43.5 | 6.4 | 79 | W | | | 1 | | k | | E | 0 | 0 | | M. Barbier, Director. |
| Nismes, Normal School | 30.04 | 762.9 | 30.24 | 768.0 | 69.4 | 20.8 | 22 | W | | | 1 | | 0 | | | 0 | 0 | Clear | Boyer, Director. |
| Privas, Normal School | 29.19 | 741.5 | 30.26 | 768.5 | 62.6 | 17 | 38 | N | | | 1 | c | | N | N | 0 | 0 | | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 25.43 | 646.0 | | | 38.1 | 3.4 | 76 | NW | | | 3 | | 5 | | W | 0 | 0 | Cloudy | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.45 | 773.5 | 30.48 | 774.3 | 49.5 | 9.7 | 90 | NNW | | | 1 | | 10 | NNW | NNW | 0 | 0 | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 30.29 | 769.3 | 30.37 | 771.5 | 50.0 | 10.0 | 62 | WNW | | | 2 | | 5 | | NW | 0 | 0 | Cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs' | 30.40 | 772.2 | 30.43 | 773.0 | 50.0 | 10.0 | 84 | WNW | | | 3 | | 5 | WNW | WNW | 0 | 0 | Cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 30.19 | 766.7 | 30.35 | 770.9 | 50.0 | 10.0 | 80 | NW | | | 2 | | | | NW | 0.008 | 0.2 | | E. Renou, Director. |
| Tarbes, Normal School | 29.31 | 744.4 | 30.40 | 772.2 | 55.4 | 13 | 45 | W | | | 2 | | 0 | | | 0 | 0 | Clear | T. Huguet, Director. |
| Versailles Observatory | 29.85 | 758.2 | 30.34 | 770.7 | 47.1 | 8.4 | | NW | | | 2 | | | | | 0 | 0 | | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.68 | 751.4 | 30.30 | 769.6 | 64.4 | 18 | 79 | NNW | | | 1 | | 2 | | NW | 0 | 0 | Slightly cl'dy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.90 | 761.1 | 29.99 | 761.8 | 77.0 | 25 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 29.71 | 754.5 | 30.31 | 769.9 | 62.2 | 16.8 | 35 | N | | | 1 | | 5 | | | 0 | 0 | Cloudy | Mr. Jays. |
| Marseilles, Observatory | | | | | | | | | | | | | | | | | | | The Staff. |
| Mont-Louis | 25.10 | 637.5 | 30.41 | 772.5 | 47.3 | 8.5 | 33 | WNW | 7.4 | 3.3 | | | 0 | | | 0 | 0 | | M. Cave. |
| Nice | | | 30.21 | 767.2 | 59.9 | 15.5 | 72 | ESE | | | 3 | | 0 | | | 0 | 0 | | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 30.07 | 763.7 | | | 48 9 | 9.4 | 91 | WNW | | | 4 | | 10 | | WNW | Inap. | Inap. | Sprinkling | Marié Davy, Director. |
| Perpignan | 30.23 | 767.7 | 30.33 | 770.4 | 65.8 | 18.8 | 32 | NW | 16.8 | 7.5 | | | 0 | | | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.75 | 577.8 | | | 34.3 | 1.3 | | Calm | | | 0 | | 0 | | | 0 | 0 | Clear | Gen'l de Nansouty. |
| Toulouse, Observatory | 29.75 | 755.6 | 30.48 | 774.2 | 45.3 | 7.4 | 91 | NE | | | 3 | | 10 | | | 0 | 0 | | M. Mercadier Juller. |
| Tours | 30.21 | 767.3 | 30.41 | 772.3 | 53.1 | 11.7 | 69 | NW | | | 1 | | 10 | | NNW | 0 | 0 | | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 29.96 | 761.1 | 29.99 | 761.7 | 43.2 | 6.2 | 99 | ESE | 11.9 | 5.3 | | | 10n | | | 0.488 | 12.4 | Raining | Marc Dechevrens, S. J. |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and in the official series the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt apparently gives cloud direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-12. | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.27 | 743.5 | 30.12 | 765.0 | 41.0 | 5.0 | 87 | W | | | 8 | | 9 | W | | 0.008 | 0.2 | Raining | Prof. Dr. Hoh. |
| Berlin | 29.73 | 755.2 | 29.91 | 759.7 | 44.2 | 6.8 | 61 | NW | | | 5 | | 3 | | | | | | Prof. Arndt. |
| Breslau | 29.30 | 744.1 | 29.82 | 757.5 | 39.7 | 4.3 | 100 | NW | | | 7 | | 10 | | | | | Rainy | Royal University Obs'y |
| Carlsruhe | 29.79 | 756.7 | 30.23 | 767.8 | 46.0 | 7.8 | 75 | SW | | | 6 | | 10 | SW | | 0.098 | 2.5 | Raining | Albert Sens. |
| Cassel | 29.61 | 749.5 | 30.12 | 765.0 | 41.4 | 5.2 | 77 | N | | | 6 | | 8 | W | | 0.143 | 3.62 | Raining | Dr. H. Möhl. |
| Crefeld | 30.04 | 762.9 | 30.20 | 767.0 | 47.8 | 8.8 | 49 | N | | | 5 | | 6k | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.63 | 752.5 | 30.00 | 761.9 | 46.9 | 8.3 | | WNW | | | 2 | | 10 | | | 0.016 | 0.4 | | Physical Society. |
| Friedrichshafen | 28.76 | 730.5 | 30.16 | 766.0 | 51.1 | 10.6 | 65 | W | | | 7 | | 6 | W | | 0.075 | 1.9 | Raining | M. Wilhelm. |
| Hamburg | 30.00 | 762.0 | 30.08 | 763.9 | 38.5 | 3.6 | 49 | NW | | | 6 | | 0 | | | 0.130 | 3.3 | Clear | Captain F. Hegemann. |
| Kiel | 30.02 | 762.4 | 30.03 | 762.8 | 39.4 | 4.1 | 41 | W | | | 5 | | 2 | | | 0.034 | 0.86 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.41 | 747.0 | 29.49 | 749.1 | 35.6 | 2.0 | 73 | W | | | 8 | | 6 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 29.65 | 753.1 | 36.7 | 2.6 | | W | | | 6 | | 4 | | | 0 | 0 | Stormy | H. Müller. |
| Leipsic, Observatory | 29.58 | 751.4 | 30.02 | 762.4 | 39.6 | 4.2 | 97 | NW | | | 3 | | 10 | NW | | 0.039 | 1.0 | Raining | Prof. Bruhns, Privy Counsellor. |
| Memel, Naval School | 29.38 | 746.2 | 29.42 | 747.3 | 35.4 | 1.9 | 82 | WNW | | | 6 | | 1d | | | | | | Skalweit. |
| Neufahrwasser | 29.56 | 750.9 | 29.58 | 751.3 | 39.7 | 4.3 | 54 | W | | | 6 | | 7 | | | 0.024 | 0.6 | | A. Lothes. |
| Posen | 29.52 | 749.8 | 29.82 | 757.4 | 35.2 | 1.8 | 98 | NW | | | 8 | | 10 | | | 0.016 | 0.4 | Raining | Dr. Magener. |
| Strassburg (in Alsace) | 29.74 | 755.3 | 30.30 | 769.6 | 48.6 | 9.2 | 67 | W | | | 3 | | 10 | W | | | | Raining | Imp. University Observatory. |
| Stuttgart | 29.22 | 742.2 | 30.16 | 766.0 | 45.9 | 7.7 | 67 | W | | | 1 | | 10 | | | 0.067 | 1.7 | Raining | Prof. Schoder. |
| Treves, (Trier) | | | | | | | | | | | | | | | | | | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.63 | 727.1 | 30.17 | 766.4 | 41.7 | 5.4 | 80 | WNW | 25 | 11 | | | 10 | | W | 0 | 0 | | Dr. Van Bebber |
| Wustrow, Naval School | 29.84 | 757.8 | 29.86 | 758.4 | 36.9 | 2.7 | 63 | NW | | | 5 | | 5s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.80 | 756.8 | 30.19 | 766.8 | 57.9 | 14.4 | | SW | | | 1.5 | | | | | | | Clear | Dr. J. F. J. Schmidt. |
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Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.82 | 757.4 | 29.87 | 758.8 | 73.8 | 23.2 | 58 | W | 13 | 5.8 | | | 5 | | | 0 | 0 | D. clouds | |
| Deesa | 29.34 | 745.2 | 29.81 | 757.1 | 86.1 | 30.1 | 16 | W | 10.1 | 4.5 | | | 9 | W | | 0 | 0 | D. clouds | |
| Bombay | 29.83 | 757.8 | 29.87 | 758.7 | 82.1 | 27.8 | 52 | NNW | 17 | 7.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.02 | 737.0 | 29.77 | 756.1 | 74.6 | 23.7 | 56 | W | 3.2 | 1.4 | | | 10 | | | 0 | 0 | Cloudy | |
| Belgaum | 27.38 | 694.2 | 29.81 | 757.2 | 87.3 | 30.7 | 46 | W | 11.0 | 4.9 | | | 1 | | | 0 | 0 | | |
| Roorkee | 28.89 | 733.7 | 29.80 | 757.0 | 69.8 | 21.0 | 59 | NW | 3.1 | 1.4 | | | 10 | | | 0.05 | 1.3 | Gloomy | |
| Agra | 29.22 | 742.3 | 29.78 | 756.4 | 86.7 | 30.4 | 34 | SW | | | | | 10 | | S | 0 | 0 | | |
| Nagpur | 28.75 | 730.3 | 29.77 | 756.2 | 91.5 | 33.1 | 38 | Calm | 3.3 | 1.5 | | | 2 | SE | | 0 | 0 | Blue sky | |
| Lucknow | 29.40 | 746.7 | 29.78 | 756.3 | 80.3 | 26.8 | 51 | NW | 2.9 | 1.3 | | | 10 | | | 0 | 0 | Overcast | |
| Allahabad | 29.44 | 747.8 | 29.75 | 755.6 | 88.6 | 31.4 | 35 | Calm | 1.3 | 0.6 | | | 10 | W | | 0 | 0 | Overcast | |
| Patna | 29.60 | 752.0 | 29.78 | 756.5 | 87.4 | 30.8 | 34 | W | 1.2 | 0.5 | | | 6 | W | W | 0 | 0 | D. clouds | |
| Hazaribagh | 27.79 | 705.8 | 29.77 | 756.2 | 83.8 | 28.8 | 21 | N | 7.3 | 3.3 | | | 1 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.73 | 755.0 | 29.81 | 757.1 | 86.6 | 30.3 | 59 | S | 2.5 | 1.1 | | | | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.78 | 756.5 | 29.80 | 757.0 | 84.8 | 29.3 | 47 | WSW | 5.0 | 1.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.40 | 746.6 | 29.78 | 756.5 | 79.4 | 26.3 | 35 | NE | 5.8 | 2.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.75 | 755.7 | 29.85 | 758.1 | 78.4 | 25.8 | 90 | WNW | 4.1 | 1.8 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.54 | 750.4 | 29.89 | 759.1 | 70.8 | 21.6 | 71 | N | 4.3 | 1.9 | | | 10 | SW | SW | 0 | 0 | D. clouds | |
| Jubbulpore | 28.43 | 722.0 | 29.76 | 756.0 | 90.7 | 32.6 | 25 | NW | 4.4 | 2.0 | | | 1 | SE | | 0 | 0 | Blue sky | |
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Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.70 | 754.4 | 30.12 | 765.0 | 54.9 | 12.7 | 54 | S | 0.7 | 0.3 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.56 | 750.7 | 30.08 | 764.0 | 62.1 | 16.7 | 50 | W | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 30.02 | 762.4 | 30.13 | 765.2 | 49.1 | 9.5 | 83 | SE | 0.7 | 0.3 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 29.21 | 742.0 | 30.13 | 765.3 | 57.6 | 14.2 | 52 | SW | 3.1 | 1.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 30.00 | 762.1 | 30.20 | 767.0 | 57.6 | 14.2 | 65 | SE | 6.3 | 2.8 | ..... | ..... | 2 | SE | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 28.19 | 716.1 | 30.13 | 765.3 | 55.4 | 13.0 | 50 | SE | ..... | ..... | 4 | ..... | 0 | NNW | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 30.07 | 763.8 | 30.12 | 765.0 | 55.8 | 13.2 | 56 | N | 11.2 | 5.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.96 | 760.9 | 30.22 | 767.5 | 57.6 | 14.2 | 50 | W | ..... | ..... | 4 | ..... | 1 | SW | ..... | 0 | 0 | ..... | Cav. F Meucci |
| Leghorn | 30.13 | 765.2 | 30.21 | 767.3 | 60.1 | 15.6 | 50 | SSW | ..... | ..... | 2 | ..... | 4 | W | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 30.07 | 763.8 | 30.25 | 768.3 | 60.1 | 15.6 | 57 | W | 5.6 | 2.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.98 | 761.5 | 30.24 | 768.0 | 58.5 | 14.7 | 41 | WSW | 1.8 | 0.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.35 | 745.4 | 30.26 | 768.5 | 59.4 | 15.2 | 70 | SW | 1.3 | 0.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 30.09 | 764.2 | 30.28 | 769.1 | 61.3 | 16.3 | 30 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 30.06 | 763.6 | 30.32 | 770.1 | 56.3 | 13.5 | 58 | ENE | 4.3 | 1.9 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 30.21 | 767.4 | 30.28 | 769.2 | 58.1 | 14.5 | 50 | E | 2.5 | 1.1 | ..... | ..... | 0 | WNW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.71 | 754.7 | 30.27 | 768.8 | 56.8 | 13.8 | 80 | SW | 2.5 | 1.1 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.06 | 763.5 | 30.08 | 764.0 | 44.6 | 5.3 | 78 | NNE | 5.5 | 2.5 | ..... | ..... | 3s | ..... | ..... | 0.190 | 4.83 | Fair | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.90 | 759.4 | 30.11 | 764.8 | 45.1 | 7.3 | 78 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0.140 | 3.56 | Cloudy | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 30.04 | 763.0 | 30.11 | 764.8 | 39.7 | 4.3 | 83 | S | 3.3 | 1.5 | ..... | 2;ck | 0 | ..... | ..... | 0 | 0 | Fair | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | P. Ceballos. |
| Guadalajara | 25.16 | 638.5 | 30.18 | 766.6 | 52.7 | 11.5 | 48 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | Prof. L. Perez. |
| Leon | 24.50 | 622.4 | 30.11 | 764.9 | 60.1 | 15.6 | 74 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | Prof. M. Leal |
| Mexico, Central Obs'y | 23.14 | 587.6 | 30.22 | 767.5 | 50.5 | 10.3 | 80 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 59.0 | 15.0 | 73 | NNE | ..... | ..... | 2 | 0 | 3ck | ..... | SW | 0 | 0 | Foggy | M. V. de Leon, M. E. |
| Tlacotalpam | 30.07 | 763.8 | 30.08 | 764.1 | 70.7 | 21.5 | 95 | S | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | M. M. Cházaro. |
| San Luis Potosi | 24.31 | 616.7 | 30.30 | 771.1 | 55.0 | 12.8 | 72 | E | ..... | ..... | 1 | 1 | 5 | N | W | 0 | 0 | Foggy | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.45 | 595.5 | 30.21 | 767.3 | 45.0 | 7.2 | 66 | E | 0 | 0 | ..... | ..... | 1s | ..... | Calm | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.44 | 722.3 | 30.09 | 764.2 | 75.2 | 24.0 | 77 | E | ..... | ..... | 2 | 0 | 1 | ..... | SW | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca, 1,550.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1893 m., or 6210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2201m., or 7220.9 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 532 m., or 1745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.34 | 770.5 | 30.34 | 770.5 | 44.8 | 7.1 | ..... | N | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.126 | 3.2 | ..... | |
| Groningen | 30.15 | 765.8 | 30.21 | 767.2 | 39.4 | 4.1 | ..... | N | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 30.27 | 768.9 | 30.27 | 768.9 | 37.9 | 3.3 | ..... | NW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 30.29 | 769.4 | 30.29 | 769.4 | 44.6 | 7.0 | 82 | N | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.24 | 768.0 | 30.28 | 769.2 | 44.8 | 7.1 | 61 | N | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.063 | 1.6 | Cloudy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.76 | 756.0 | 29.82 | 757.4 | 28.0 | — 2.2 | 79 | NNW | 32.0 | 14.3 | ..... | ..... | 4 | ..... | ..... | 0.059 | 1.5 | Light snow. | |
| Brönö | 28.91 | 734.2 | 28.95 | 735.2 | 28.8 | — 1.8 | 96 | WSW | 36 | 16 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing.... | |
| Christiania | 29.44 | 747.8 | 29.60 | 751.7 | 31.5 | — 0.3 | 40 | N | 25 | 11 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 28.89 | 733.8 | 28.93 | 734.9 | 33.8 | 1.0 | 79 | SW | 11 | 5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.11 | 764.9 | 30.31 | 769.8 | 59.4 | 15.2 | 85 | SSE | 10.5 | 4.7 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.34 | 745.2 | 30.37 | 771.4 | 58.8 | 14.9 | 47 | E | 8.1 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.17 | 766.3 | 30.26 | 768.5 | 65.5 | 18.6 | 49 | SW | 3.8 | 1.7 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 30.03 | 762.7 | 30.39 | 771.9 | 58.5 | 14.7 | 53 | NNE | 8 7 | 3 9 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.28 | 769.1 | 30.35 | 770.9 | 63.3 | 17.4 | 65 | SSE | 13.0 | 5.8 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h 6 m., p. m

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | ..... | ..... | 29.92 | 760.0 | 85.6 | 29.8 | ..... | SW | ..... | ..... | 2. | ..... | 6 | ..... | SW | 2 | SW | D. clouds | A. J. de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. T. d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da SilvaCosta, N. 13° 47', W. 20° 35' | ..... | ..... | 30.02 | 762.5 | 73.8 | 23.2 | ..... | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 3 | ..... | Blue sky | A. Ferreira, 2nd Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | 29.76 | 755.8 | 86.0 | 30.0 | ..... | WSW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 29.93 | 760.2 | 67.5 | 19.7 | ..... | ESE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 1 | ..... | Overcast | J. M. T. Guimarães, Com'd't. |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.21 | 741.9 | 29.64 | 752.8 | 40.3 | 4.6 | 84 | WSW | 20 | 9 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs |
| Wilna | 28.98 | 736.2 | 29.41 | 747.0 | 35.4 | 1.9 | 77 | W | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds .. | Astronomical Obs. |
| Dorpat | 28.90 | 734.0 | 29.15 | 740.3 | 34.3 | 1.3 | 85 | WSW | 7 | 3 | ..... | ..... | 9kn | ..... | ..... | ..... | ..... | Light snow.. | Prof. Dr. Weihrauch. |
| St. Petersburg | 28.98 | 736.0 | 28.99 | 736.4 | 32.4 | 1.2 | 82 | WNW | 13 | 6 | ..... | ..... | 10ks;n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 28.87 | 733.3 | 29.51 | 749.5 | 39.0 | 3.9 | 69 | NW | 31 | 14 | ..... | ..... | 7k;ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.70 | 754.3 | 29.77 | 756.1 | 50.2 | 10.1 | 54 | SW | 13 | 6 | ..... | ..... | 7n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.81 | 757.1 | 29.83 | 757.6 | 52.5 | 11.4 | 47 | SW | 11 | 5 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 28.61 | 726.7 | 29.17 | 740.9 | 36.5 | 2.5 | 67 | SE | 7 | 3 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.27 | 743.4 | 29.47 | 748.6 | 41.0 | 5.0 | 72 | W | 22 | 10 | ..... | ..... | 8n | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 29.02 | 737.0 | 29.04 | 737.5 | 26.2 | — 3.2 | 85 | ESE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.56 | 725.5 | 30.00 | 762.1 | 46.9 | 8.3 | 43 | NW | 31 | 14 | ..... | ..... | 7s | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.72 | 754.9 | 29.64 | 752.8 | 40.5 | 4.7 | 86 | WSW | 18 | 8 | ..... | ..... | 10n | ..... | ..... | Blank | Blank | ..... | Capt. Wisganow. |
| Krotkowo* | 28.74 | 730.1 | 29.22 | 742.3 | 31.5 | — 0.3 | 82 | S | 16 | 7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 28.93 | 734.7 | 29.20 | 741.7 | 27.7 | — 2.4 | 90 | SE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 28.34 | 719 8 | 29.33 | 745.0 | 25.0 | — 3.9 | 69 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.57 | 751.0 | 29.80 | 757.0 | 47.5 | 8.6 | 35 | W | 11 | 5 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.29 | 718.6 | 30.00 | 761.9 | 54.3 | 12.4 | 60 | Calm | 0 | 0 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.50 | 749.4 | 30.03 | 762.8 | 27.0 | — 2.8 | 64 | Calm | 0 | 0 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeniseisk | 30.06 | 763.4 | 30.38 | 771.7 | — 3.8 | —19.9 | 57 | WNW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 29.60 | 751.8 | 29.74 | 755.4 | 40.6 | 4.8 | 32 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend 455? m, or 1,492.7? ft., Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E. 48° 34'.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.21 | 767.3 | 30.32 | 770.0 | 59.0 | 15 | 51 | WSW | 4.1 | 1.83 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 30.43 | 772.8 | 30.48 | 774.3 | 51.6 | 10.9 | 86 | N | 2.1 | 0.93 | ..... | 0 | 10 | ..... | ..... | 0 | 0 | Covered | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.39 | 695.6 | ..... | ..... | 55.9 | 13.3 | 61 | NE | 3.2 | 1.41 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 28.12 | 714.3 | ..... | ..... | 60.1 | 15.6 | 35 | NE | 3.0 | 1.33 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |
| Murcia, Met. Obs'y | 30.26 | 768.5 | 30.41 | 772 3 | 64.4 | 18.0 | 63 | SW | 2.0 | 0.89 | ..... | 0 | 8 | ..... | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.45 | 747.9 | 30.35 | 770.8 | 60.3 | 15.7 | 65 | SE | 8.1 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 30.14 | 765.6 | 30.21 | 767.3 | 66.2 | 19.0 | 84 | E | 2.2 | 1.0 | ..... | 0 | 3k | ..... | ENE | 0 | 0 | Fair | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.87 | 758.8 | 29.92 | 760.1 | 83.0 | 28.3 | 64 | ENE | 5.2 | 2.3 | ..... | 0 | s | ..... | ..... | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.24 | 768.0 | 30.34 | 770.5 | 63.7 | 17.6 | 57 | ESE | 20.5 | 9.2 | ..... | 0 | 4 | ..... | E | 0 | 0 | ..... | Capt. C. Pujazon, R. N. Dir. |
| San Juan de Porto Rico, W. I. | 29.98 | 761.4 | 30.07 | 763.7 | 75.9 | 24.4 | 71 | E | 22.4 | 10.0 | ..... | 8ck | 8ck | E | E | 0.079 | 2.00 | Cloudy | Leonardo de Tejeda, Ch'f Eng'r |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.00 | 736.7 | 29.04 | 737.7 | 24.1 | — 4.4 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.01 | 736.8 | 29.06 | 738.1 | 32.0 | 0.0 | 60 | NW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.13 | 739.9 | 29.18 | 741.2 | 36.0 | 2.2 | 39 | W | ..... | ..... | 7 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.13 | 740.0 | 29.31 | 744.5 | 36.3 | 2.4 | 57 | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.31 | 744.5 | 29.37 | 746.0 | 34.9 | 1.6 | 93 | NW | ..... | ..... | 7 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.21 | 747.9 | 29.28 | 743.8 | 34.2 | 1.2 | 77 | NW | 12.5 | 5.6 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.87 | 733.4 | 30.28 | 769.1 | 60.8 | 16.0 | 49 | SSW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Zurich | 28.60 | 726.5 | 30.23 | 767.9 | 55.8 | 13.2 | 53 | W | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0.157 | 4.0 | Fair | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +8.5 mm.; Thermometer, +8.9 ent.; Relative Humidity, —13 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.09 | 764.3 | 50.4 | 10.2 | 61 | SW | 7 | 3.0 | ..... | ..... | 2 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Valona | ..... | ..... | 30.22 | 767.6 | 57.4 | 14.1 | ..... | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.96 | 761.0 | 30.08 | 764.0 | 64.9 | 18.3 | 52 | SW | ..... | ..... | 1 | ..... | 3ks | ..... | SW | 0.12 | 3.0 | D. Clouds | Prof. C. V. A. Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.63 | 752.6 | 29.70 | 754.4 | 34.7 | 1.5 | 89 | SW | 18 | 8.0 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | Hon. J. Ferguson. |
| Brockville, Ontario | 29.42 | 747.2 | 29.73 | 755.1 | 38 | 3.8 | ..... | SW | 5 | 2.2 | ..... | 0 | 5s | ..... | W | 0.04 | 1.0 | Fair | W. R. Bigg. |
| *Chatham, N B | 29.74 | 755.4 | 29.80 | 756.9 | 34 | 1.1 | 89 | S | 8 | 3.6 | ..... | ..... | 10n | ..... | S | 0.04 | 1.0 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 29.85 | 758.2 | 29.90 | 759.4 | 34 | 1.1 | 81 | S | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0.050 | 1.27 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.39 | 746.5 | 29.59 | 751.6 | 42.2 | 5.7 | 83 | W | ..... | ..... | 8 | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | 29.63 | 752.6 | 29.67 | 753.6 | 44.3 | 6.8 | 92 | SE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.41 | 10.4 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 29.46 | 748.3 | 29.48 | 748.8 | 30 | 3.9 | 64 | SW | 25 | 11.2 | ..... | ..... | 10s | ..... | SW | 0.02 | 0.5 | Cloudy | J. McWilliams. |
| Fredericton, N. B | 29.79 | 756.7 | 29.80 | 756.4 | 34.0 | 1.1 | 92 | SE | 11 | 4.9 | ..... | ..... | Mist | ..... | ..... | 0.17 | 4.3 | Misty | Prof. Harrison. |
| *Fort Garry Manitoba | 29.62 | 752.3 | 30.54 | 775.7 | 4 | —15.6 | 95 | NW | 5 | 2.2 | ..... | Haze | 5s | NW | NW | 0.030 | 0.76 | Fair | James Stewart. |
| Granton, Ontario | 28.89 | 733.8 | 30.03 | 762.8 | 32 | 0.0 | ..... | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 29.82 | 757.4 | 29.96 | 761.0 | 34 | 1.1 | 95 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Cloudy | F. Allison, M. A. |
| Hamilton, Ontario | 29.65 | 753.1 | 30.03 | 762.8 | 36.7 | 2.6 | 95 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.43 | 747.5 | 29.77 | 756.1 | 38 | 3.3 | 67 | SW | 14 | 6.3 | ..... | 2cs | 0 | SW | ..... | 0 | 0 | Fair | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.88 | 758.9 | 29.92 | 760.0 | 36.0 | 2.2 | 91 | SW | 8 | 3.6 | ..... | 3k | 0 | SW | ..... | 0 | 0 | Fair | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 29.37 | 746.0 | 29.57 | 751.1 | 48 | 6.1 | 87 | W | 26 | 11.6 | ..... | ..... | 10ks | ..... | W | 0.02 | 0.5 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.20 | 741.7 | 29.03 | 760.2 | 28 | — 2.2 | 78 | W | 30 | 13.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | 29.09 | 738.9 | 29.86 | 758.4 | 33.7 | 0.9 | 68 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.29 | 744.0 | 30.00 | 762.0 | 37 | 2.8 | 82 | W | 5 | 2.2 | ..... | 5ck | 0 | W | ..... | 0.06 | 1.5 | Fair | H. Morgan. |
| Port Hastings, N. S | 29.89 | 759.2 | 29.94 | 760.5 | 32.4 | 0.2 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.38 | 746.2 | 30.04 | 763.0 | 36 | 2.2 | 70 | W | 16 | 7.2 | ..... | 2k | 0 | W | ..... | 0.05 | 1.3 | Clear | M. Payne. |
| *Quebec, Quebec | 29.16 | 740.7 | 29.49 | 749.0 | 34 | 1.1 | 100 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | Calm | 0.27 | 6.9 | Heavy rain | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.28 | 742.4 | 29.69 | 754.1 | 36 | 2.2 | 95 | NW | 10 | 4.5 | ..... | 0 | 2s | ..... | NW | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.82 | 757.4 | 29.87 | 758.7 | 33 | 0.6 | 96 | S | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0.12 | 3.0 | Foggy | Dr. Gove. |
| St. John, N. B | 29.76 | 755.9 | 29.93 | 760.2 | 32 | 0.0 | 100 | S | 15 | 6.7 | ..... | ..... | Fog | ..... | ..... | 0.32 | 8.1 | Foggy | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.27 | 743.4 | 30.02 | 762.5 | 31 | — 0.6 | 80 | W | 35 | 15.6 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Cloudy | K. Stewart. |
| Stayner, Ontario | 29.15 | 740.1 | 29.96 | 761.0 | 31 | — 0.6 | 80 | NW | 15 | 6.7 | ..... | 8k | 0 | NW | ..... | 0 | 0 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.98 | 728.5 | 30.02 | 762.5 | 31.0 | — 0.6 | 78 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.13 | 3.3 | Clear | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.94 | 760.5 | 29.98 | 761.5 | 35 | 1.7 | 81 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | ..... | 0.12 | 3.0 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.53 | 750.0 | 29.93 | 760.2 | 36 | 2.2 | 75 | W | 22 | 9.8 | ..... | 0 | 2s | ..... | ..... | 0.22 | 5.6 | Clear | Magnetic Observatory. |
| Windsor, N. S | 29.86 | 758.4 | 29.96 | 761.0 | 35.0 | 1.7 | 90 | S | 9 | 4.0 | ..... | ..... | 10n | ..... | ..... | 0.33 | 8.4 | Overcast | Prof. John E. Oram |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 31.0 | — 0.6 | 90 | NE | ..... | ..... | ..... | Sm'e | Sm'e | ..... | ..... | 0.08 | 2.0 | Fair | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters, Stratford, 1,182 ft., or 360.3 meters.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.54 | 750.3 | 29.77 | 756.1 | 45 | 7.2 | 88 | S | 15 | 6.7 | ..... | ..... | 10s | ..... .. | SW | Inap. | Inap. | Cloudy..... | |
| Alpena, Michigan | 29.42 | 747.2 | 30.10 | 764.5 | 28 | — 2.2 | 77 | W | 22 | 9.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Atlanta, Georgia | 29.05 | 737.9 | 30.20 | 767.1 | 58 | 14.4 | 69 | SW | 10 | 4.5 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky..... | |
| Atlantic City, New Jersey | 29.92 | 760.0 | 29.93 | 760.2 | 43 | 6.1 | 75 | SW | 8 | 3.6 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair..... | |
| Augusta, Georgia | 30.06 | 763.5 | 30.24 | 768.1 | 54 | 12.2 | 80 | SW | 4 | 1.8 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear..... | |
| Baltimore, Maryland | 29.90 | 759.4 | 29.95 | 760.7 | 57 | 13.9 | 81 | E | 4 | 1.8 | ..... | 8k | Fog | W | Calm | Inap. | Inap. | Foggy ..... | |
| Barnegat, New Jersey | 29.87 | 758.7 | 29.90 | 759.4 | 44 | 6.7 | 92 | SW | 8 | 3.6 | ..... | 5k | Fog | W | Calm | 0 | 0 | Fair ..... | |
| Bismarck, Dakota | 28.48 | 723.4 | 30.33 | 770.4 | 12 | —11.1 | 90 | E | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy. ..... | |
| Boerne, Texas | 28.68 | 728.5 | 29.98 | 761.5 | 63 | 17.2 | 89 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy.. ..... | |
| Boise City, Idaho | 27.30 | 693.4 | 30.26 | 768.6 | 48 | 8.9 | 63 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy..... | |
| Boston, Massachusetts | 29.71 | 754.6 | 29.86 | 758.4 | 42.5 | 5.8 | 96 | SW | 10 | 4.5 | ..... | ..... | 10n | ..... | SW | 0.01 | 0.3 | Light rain.. | |
| Brackettville, Texas | 28.98 | 736.1 | 30.00 | 762.0 | 65 | 18.3 | 89 | NE | 7 | 3.1 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy..... | |
| Breckenridge, Minnesota | 29.38 | 746.2 | 30.46 | 773.7 | 22 | — 5.6 | 86 | W | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy. ..... | |
| Brownsville, Texas | 30.05 | 763.3 | 30.10 | 764.5 | 70 | 22.2 | 90 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy.. ..... | |
| Buffalo, New York | 29.26 | 743.2 | 29.97 | 761.2 | 37 | 2.8 | 63 | SW | 15 | 6.7 | ..... | 5ks | 0 | W | ..... | 0.03 | 0.8 | Fair..... | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 49 | 9.4 | Inap. | SE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Burlington, Vermont | 29.36 | 745.7 | 29.65 | 753.1 | 44 | 6.7 | 84 | S | 23 | 10.3 | ..... | ..... | 10s | ..... | W | 0.08 | 2.0 | Cloudy ..... | |
| Cairo, Illinois | 29.93 | 760.2 | 30.33 | 770.4 | 53 | 11.7 | 73 | NW | 11 | 4.9 | ..... | ..... | 10s | ..... | NW | 0.09 | 2.3 | Cloudy..... | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.32 | 643.1 | 30.12 | 765.0 | 45 | 7.2 | 24 | N | 4 | 1.8 | ..... | 0 | 0 | ... ..... | ..... | 0 | 0 | Clear.. ..... | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 33 | 0.6 | 42 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Campo, California | 27.57 | 700.3 | 30.14 | 765.5 | 39 | 3.9 | 80 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Cape Hatteras, N. Carolin | 30.13 | 765.3 | 30.14 | 765.5 | 50 | 10.0 | 93 | SW | 10 | 4.5 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy ..... | |
| Cape Henry, Virginia | 29.97 | 761.2 | 29.98 | 761.5 | 62 | 16.7 | 67 | SW | 16 | 7.2 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear..... | |
| Cape Lookout, N. Carolin | 30.15 | 765.8 | 30.17 | 766.3 | 55 | 12.8 | 81 | SW | 16 | 7.2 | ..... | 5ck | Haze | W | SW | 0 | 0 | Hazy ..... | |
| Cape May, New Jersey | 29.89 | 759.2 | 29.92 | 760.0 | 47 | 8.3 | 92 | SW | 19 | 8.5 | ..... | 5cs | Haze | W | ..... | 0 | 0 | Fair ..... | |
| Castroville, Texas | 29.85 | 745.5 | 30.05 | 763.3 | 66 | 18.9 | 89 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy ..... | |
| Charleston, South Carolin | 30.17 | 766.3 | 30.23 | 767.8 | 62 | 16.7 | 88 | SW | 6 | 2.7 | ..... | 4ck | Fog | W | Calm | 0 | 0 | Fair..... | |
| Cheyenne, Wyoming | 24.24 | 615.7 | 30.18 | 766.6 | 28 | — 2.2 | 88 | W | 4 | 1.8 | ..... | 0 | 0 | ... ..... | ..... | 0 | 0 | Clear..... | |
| Chicago, Illinois | 29.55 | 750.6 | 30.18 | 766.6 | 37 | 2.8 | 63 | NW | 7 | 3.1 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Cincinnati, Ohio | 29.50 | 749.3 | 30.15 | 765.8 | 54 | 12.2 | 52 | N | 14 | 6.3 | ..... | 9k | 0 | NW | ..... | 0.22 | 5.6 | Clearing. ... | |
| Cleveland, Ohio | 29.32 | 745.7 | 30.11 | 764.8 | 38 | 3.3 | 72 | W | 7 | 3.1 | ..... | 5cs | 0 | W | ... ..... | 0.17 | 4.3 | Fair..... | |
| Coleman City, Texas | 28.36 | 720.3 | 30.03 | 762.8 | 54 | 12.2 | 74 | Calm | 0 | 0 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| Columbus, Ohio | 29.27 | 743.4 | 30.11 | 764.8 | 50 | 10.0 | 52 | N | 13 | 5.8 | ..... | 2ck | 2s | Calm | Calm | 0.18 | 4.6 | Fair..... ... | |
| Corpus Christi, Texas | 28.24 | 717.3 | 29.92 | 760.0 | 54 | 12.2 | 73 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Corsicana, Texas | 29.68 | 753.9 | 30.15 | 765.8 | 64 | 17.8 | 94 | S | 3 | 1.3 | ..... | 8cs;k | 2s | NW;W | S | 0 | 0 | Fair..... | |
| Davenport, Iowa | 29.73 | 755.1 | 30.41 | 772.4 | 34 | 1.1 | 79 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Deadwood, Dakota | 25.52 | 648.2 | ..... | ..... | 34 | 1.1 | 61 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Decatur, Texas | 29.00 | 736.6 | 30.14 | 765.5 | 70 | 21.1 | 84 | S | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Denison, Texas | 29.31 | 744.5 | 30.09 | 764.3 | 64 | 17.8 | 83 | S | 10 | 4.5 | ..... | 0 | 2ks | ..... | S | 0 | 0 | Fair. ..... | |
| Denver, Colorado | 25.00 | 635.0 | 30.22 | 767.6 | 31 | — 0.6 | 79 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Des Moines, Iowa | 29.54 | 750.3 | 30.48 | 774.2 | 32 | 0.0 | 79 | N | 3 | 1.3 | ..... | 0 | 8s | ..... | SW | 0 | 0 | Cloudy..... | |
| Detroit, Michigan | 29.40 | 746.7 | 30.09 | 764.3 | 38 | 3.3 | 63 | W | 5 | 2.2 | ..... | 2cs | 0 | Calm | ..... | 0.16 | 4.1 | Clear..... | |
| Dodge City, Kansas | 27.72 | 704.1 | 30.14 | 765.5 | 32 | 0.0 | 89 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Dubuque, Iowa | 29.66 | 753.4 | 30.40 | 772.1 | 33 | 0.6 | 61 | NW | 6 | 2.7 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear..... | |
| Duluth, Minnesota | 29.67 | 753.6 | 30.41 | 772.4 | 21 | — 6.1 | 86 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Eagle Pass, Texas | 29.31 | 744.5 | 30.04 | 763.0 | 64 | 17.8 | 94 | SE | 4 | 1.8 | ..... | ..... | 10s;fg | ..... | Calm | 0 | 0 | Cloudy..... | |
| Eastport, Maine | 29.79 | 756.7 | 29.86 | 758.4 | 33 | 0.6 | 94 | S | 12 | 5.4 | ..... | ..... | Fog | ..... | ..... | 0.13 | 3.3 | Foggy ..... | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| El Paso, Texas | 26.38 | 670.0 | ..... | ..... | 37 | 2.8 | 30 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Erie, Pennsylvania | 29.30 | 744.2 | 30.03 | 762.8 | 42 | 5.6 | 66 | Calm | 0 | 0 | ..... | 2c | 0 | Calm | ..... | 0.04 | 1.0 | Fair..... | |
| Escanaba, Michigan | 29.55 | 750.6 | 30.25 | 768.3 | 25 | — 3.9 | 62 | NW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Florence, Arizona | 28.64 | 727.4 | 30.24 | 768.1 | 40 | 4.4 | 25 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Fort Buford, Dakota | 28.22 | 716.8 | ..... | ..... | 10 | —12.2 | 79 | E | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear ..... | |
| Fort Craig, New Mexico | 25.68 | 652.3 | 29.74 | 755.4 | 31 | — 0.6 | 49 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Davis, Texas | 25.32 | 643.1 | 30.28 | 769.1 | 45 | 7.2 | 67 | W | 3 | 1.3 | ..... | 2k | 0 | SW | .. ..... | 0 | 0 | Fair..... | |
| Fort Gibson, Indian Ter | 29.62 | 752.3 | 30.16 | 766.1 | 58 | 14.4 | 70 | E | 16 | 7.2 | ..... | 8k | 0 | NW | ..... | 0 | 0 | Cloudy. ..... | |
| Fort Griffin, Texas | 28.85 | 732.5 | 30.13 | 765.3 | 54 | 12.2 | 56 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Fort Keogh, Montana | 27.54 | 699.5 | ..... | ..... | 26 | — 3.3 | 88 | NW | 4 | 1.8 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear..... | |
| Fort McKavett, Texas | 27.87 | 707.9 | 29.78 | 756.4 | 59 | 15.0 | 88 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Foggy ..... | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.92 | 734.6 | 30.04 | 763.0 | 49 | 9.4 | 71 | N | 16 | 7 2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Stevenson, Dakota | 28.49 | 723.6 | ..... | ..... | 9 | —12.8 | 78 | E | 5 | 2.2 | ..... | 8ck | 0 | NW | ..... | 0 | 0 | Cloudy..... | |
| Fredericksburg, Texas | 28.41 | 721.6 | 29.94 | 760.5 | 67 | 19.4 | 84 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Galveston, Texas | 30.13 | 765.3 | 30.17 | 766.3 | 67 | 19.4 | 100 | SE | 8 | 3.6 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair..... | |
| Graham, Texas | 29.05 | 737.9 | 30.10 | 764.5 | 60 | 15.6 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Grand Haven, Michigan | 29.54 | 750.3 | 30.21 | 767.3 | 36 | 2.2 | 71 | N | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Indianapolis, Indiana | 29.43 | 747.5 | 30.23 | 767.8 | 42 | 5.6 | 58 | NW | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0.73 | 18.5 | Cloudy..... | |
| Indianola, Texas | 30.14 | 765.5 | 30.16 | 766.1 | 69 | 20.6 | 95 | S | 5 | 2.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy ..... | |
| Jacksboro, Texas | 28.94 | 735.1 | 30.06 | 763.5 | 60 | 15.6 | 82 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Jacksonville, Florida | 30.28 | 769.1 | 30.30 | 769.6 | 63 | 17.2 | 89 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Keokuk, Iowa | 29.75 | 755.6 | 30.41 | 772.4 | 35 | 1.7 | 80 | N | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Key West, Florida | 30.20 | 767.1 | 30.24 | 768.1 | 70 | 21.1 | 75 | E | 12 | 5.4 | ..... | 5k | 0 | E | ..... | 0 | 0 | Fair ..... | |
| Kittyhawk North Carolina | 30.04 | 763.0 | 30.06 | 763.5 | 58 | 14.4 | 82 | SW | 10 | 4.5 | ..... | 0 | Sm'e | ... ..... | Calm | 0 | 0 | Smoky..... | |
| Knoxville, Tennessee | 29.17 | 740.9 | 30.17 | 766.3 | 58 | 14.4 | 70 | W | 5 | 2.2 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy..... | |
| La Crosse, Wisconsin | 29.60 | 751.8 | 30.38 | 771.6 | 34 | 1.1 | 61 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| La Mesilla, New Mexico | 26.21 | 665.7 | 30.36 | 771.1 | 34 | 1.1 | 52 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Laredo, Texas | 29.66 | 753.4 | 29.99 | 761.7 | 72 | 22.2 | 80 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy..... | |
| Leavenworth, Kansas | 29.54 | 750.3 | 30.34 | 772.9 | 38 | 3.3 | 72 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Los Angeles, California | 29.83 | 757.7 | 30.18 | 766.6 | 47.0 | 8.3 | 85 | E | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Louisville, Kentucky | 29.59 | 751.6 | 30.16 | 766.1 | 54 | 12.2 | 61 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | N | 0.65 | 16.5 | Cloudy ..... . | |
| Lynchburg, Virginia | 29.37 | 746.0 | 30.04 | 763.0 | 61 | 16.1 | 60 | W | 2 | 0.9 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| Madison, Wisconsin | 29.30 | 744.2 | 30.34 | 770.6 | 33 | 0.6 | 61 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Marquette, Michigan | 29.45 | 748.0 | 30.20 | 767.1 | 23 | — 5.0 | 60 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Mason, Texas | 28.49 | 723.6 | 30.25 | 768.3 | 59 | 15.0 | 94 | Calm | 0 | 0 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Clear..... | |
| Memphis, Tennessee | 29.90 | 759.4 | 30.22 | 767.6 | 63 | 17.2 | 78 | N | 6 | 2.7 | ..... | ..... | 10ks;s | ..... | sW;Calm | Inap. | Inap. | Cloudy..... | |
| Milwaukee, Wisconsin | 29.51 | 749.5 | 30.28 | 769.1 | 34 | 1.1 | 70 | NW | 20 | 8.9 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear..... | |
| Mobile, Alabama | 30.24 | 768.1 | 30.28 | 769.1 | 61 | 16.1 | 94 | S | 3 | 1.3 | ..... | ..... | 10s;sme | ..... | Calm | 0 | 0 | Cloudy..... | |
| Montgomery, Alabama | 30.05 | 763.3 | 30.29 | 769.4 | 57 | 13.9 | 81 | Calm | 9 | 4.0 | ..... | 2k | Fog | W | Calm | 0 | 0 | Clear..... | |
| Morgantown, West Virginia | 28.95 | 735.3 | 29.98 | 761.5 | 59 | 15.0 | 76 | SW | 55 | 24.6 | ..... | ..... | 10ks | ..... ... | SW | 0.20 | 5.1 | Cloudy..... | |
| Mt. Washington, N. H. | 23.41 | 594.6 | 29.77 | 756.1 | 31 | — 0.6 | 100 | W | 0 | 0 | ..... | ..... | 10n | ..... | W | 0.24 | 6.1 | Light rain .. | |
| Nashville, Tennessee | 29.65 | 753.1 | 30.18 | 766.6 | 60 | 15.6 | 77 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | NW | 0 | 0 | Cloudy. ..... | |
| New Haven, Connecticut | 29.76 | 755.9 | 29.88 | 758.9 | 42 | 5.6 | 83 | Calm | 1 | 0.4 | ..... | 8ck | Fog | Calm | Calm | 0 | 0 | Foggy ..... | |
| New London, Connecticut | 29.84 | 757.9 | 29.90 | 759.4 | 39 | 3.9 | 91 | SW | 3 | 1.3 | ..... | 6ck | Fog | SW | Calm | 0 | 0 | Fair ..... | |
| New Orleans, Louisiana | 30.17 | 766.3 | 30.23 | 767.8 | 64 | 17.8 | 94 | SE | 0 | 0 | ..... | 0 | 8s | ..... | S | 0.01 | 0.3 | Fair..... | |
| Newport, Rhode Island | 29 84 | 757.9 | 29.89 | 759.2 | 40 | 4.4 | 91 | S | 1 | 0.4 | ..... | 5k | 5s | W | Calm | Inap. | Inap. | Cloudy..... | |
| New York, New York | 29.72 | 754.9 | 29.90 | 759.4 | 46 | 7.8 | 76 | SW | 10 | 4.5 | ..... | ..... | 10s;sm' | ..... | ..... | 0 | 0 | Cloudy ..... | |
| Norfolk, Virginia | 29.98 | 761.5 | 30.04 | 763.0 | 62 | 16.7 | 61 | SW | 0 | 0 | ..... | 5ck | Haze | W | ..... .. .. | 0 | 0 | Fair..... ..... | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instru-m'tal error and temperature. Inches. | BAROMETER. Corrected for instru-m'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.43 | 696.7 | 30.16 | 766.1 | 32 | 0.0 | 69 | S | 10 | 4.5 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| Olympia, Washington Ter. | 29.80 | 756.9 | 29.84 | 757.9 | 44.0 | 6.7 | 84 | S | 13 | 5.8 | ..... | ..... | 9n | ..... | S | 1.86 | 47.2 | Light rain | |
| Omaha, Nebraska | 29.28 | 743.7 | 30.44 | 773.2 | 33 | 0.6 | 70 | N | 8 | 1.3 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.56 | 750.8 | 29.88 | 758.9 | 41 | 5.0 | 82 | W | 15 | 6.7 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Pembina, Dakota | 29.57 | 751.1 | 30.48 | 774.2 | 13 | —10.6 | 100 | NW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap | Cloudy | |
| Philadelphia, Pa | 29.86 | 758.4 | 29.92 | 760.0 | 47 | 8.3 | 85 | SW | 9 | 4.0 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light rain | |
| Phœnix, Arizona | 28.98 | 736.1 | 30.86 | 783.8 | 43 | 6.1 | 51 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.87 | 453.9 | 30.08 | 764.0 | 14 | —10.0 | 11 | SW | 4 | 1.8 | ..... | 0. | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pioche, Nevada | 24.23 | 615.4 | 30.00 | 762.0 | 38 | 3.3 | 38 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.18 | 741.2 | 29.97 | 761.2 | 56 | 13.3 | 81 | W | 12 | 5.4 | ..... | ..... | 10s | ..... | W | 0.05 | 1.3 | Cloudy | |
| Port Huron, Michigan | 29.37 | 746.0 | 30.05 | 763.3 | 37 | 2.8 | 71 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Portland, Maine | 29.76 | 755.9 | 29.81 | 757.2 | 41 | 5.0 | 91 | S | 8 | 3.6 | ..... | ..... | 10s;fg | ..... | Calm | 0 | 0 | Cloudy | |
| Portland, Oregon | 29.96 | 761.0 | 30.06 | 763.5 | 47.5 | 8.6 | 89 | S | 14 | 6.3 | ..... | 0 | 9n | ..... | SW | 1.51 | 38.4 | Light rain | |
| Prescott, Arizona | 24.89 | 632.2 | 30.25 | 768.3 | 26 | — 3.3 | 28 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.14 | 740.1 | 29.94 | 760.5 | 70 | 21.1 | 90 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 30.28 | 769.1 | 30.30 | 769.6 | 65 | 18.3 | 84 | NE | 7 | 3.1 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Red Bluff, California | 29.91 | 759.7 | 30.28 | 769.1 | 51 | 10.6 | 93 | SW | 4 | 1.8 | ..... | 2ck | 2s | W | Calm | Inap. | Inap. | Fair | |
| Rio Grande City, Texas | 29.92 | 760.0 | 30.13 | 765.3 | 70 | 21.1 | 90 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Rochester, New York | 29.28 | 743.7 | 29.90 | 759.4 | 41 | 5.0 | 65 | W | 9 | 4.0 | ..... | 5c | 2s | Calm | W | 0 | 0 | Fair | |
| Roseburg, Oregon | 29.63 | 752.6 | 30.21 | 767.3 | 47.0 | 8.3 | 92 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.35 | 8.9 | Cloudy | |
| Sacramento, California | 30.21 | 767.3 | 30.20 | 769.4 | 52 | 11.1 | 90 | Calm | 0 | 0 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| St. Louis, Missouri | 29.76 | 755.9 | 30.35 | 770.9 | 44 | 6.7 | 60 | N | 10 | 4.5 | ..... | 5cs | 0 | Calm | ..... ..... | 0.49 | 12.4 | Fair ..... | |
| St. Marks, Florida | 30.26 | 769.1 | 30.30 | 769.6 | 52 | 11.1 | 100 | Calm | 0 | 0 | ..... | 0 | 2s;fg | ..... | Calm | 0 | 0 | Fair | |
| St. Paul, Minnesota | 29.48 | 748.8 | 30.35 | 770.9 | 32 | 0.0 | 64 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.86 | 656.8 | 30.18 | 766.6 | 41 | 5.0 | 40 | Calm | 0 | 0 | ..... | 7k | 0 | W | ..... | 0 | 0 | Fair | |
| San Antonio, Texas | 29.45 | 748.0 | 30.03 | 762.8 | 66 | 18.9 | 89 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| San Diego, California | 30.12 | 765.0 | 30.20 | 767.1 | 48 | 8.9 | 93 | NW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.43 | 747.6 | 30.12 | 765.0 | 40 | 4.4 | 65 | NW | 21 | 9.4 | ..... | 8cs | 0 | NW | ..... | 0.04 | 1.0 | Fair | |
| Sandy Hook, New Jersey | 29.84 | 757.9 | 29.87 | 758.7 | 46 | 7.8 | 84 | W | 8 | 3.6 | ..... | 10k | Haze | W | Calm | 0 | 0 | Cloudy | |
| San Francisco, California | 30.25 | 768.3 | 30.32 | 770.1 | 53 | 11.7 | 86 | W | 2 | 0.9 | ..... | 5ck | 2s | W | Calm | 0 | 0 | Fair | |
| Santa Fé, New Mexico | 23.42 | 594.9 | 29.96 | 761.0 | 32 | 0.0 | 40 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.17 | 766.3 | 30.27 | 768.8 | 64 | 17.8 | 83 | SW | 8 | 3.6 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Shreveport, Louisiana | 29.95 | 760.7 | 30.17 | 766.3 | 63 | 17.2 | 94 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Silver City, New Mexico | 24.40 | 619.8 | 30.71 | 780.0 | 39 | 3.9 | 30 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.20 | 767.1 | 30.23 | 767.8 | 55 | 12.8 | 100 | W | 6 | 2.7 | ..... | 2ck | Haze | W | Calm | 6 | 0 | Hazy | |
| Springfield, Massachusetts | 29.70 | 754.4 | 29.83 | 757.7 | 43 | 6.1 | 92 | S | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Light rain | |
| Stockton, Texas | 27.07 | 687.6 | 30.07 | 763.8 | 53 | 11.7 | 48 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.80 | 756.9 | 29.86 | 758.4 | 38 | 3.3 | 81 | S | 16 | 7.2 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Toledo, Ohio, | 29.42 | 747.2 | 30.11 | 764.8 | 43 | 6.1 | 51 | NW | 8 | 3.6 | ..... | 0 | 2s | ..... | SW | 0.07 | 1.8 | Clear | |
| Tucson, Arizona | 27.69 | 703.3 | 30.24 | 768.1 | 44 | 6.7 | 44 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.68 | 753.9 | 30.17 | 766.3 | 49.0 | 9.4 | 78 | SW | 8 | 3.6 | ..... | 0 | 2s | ..... | W | 0.05 | 1.3 | Fair | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 33 | 0.6 | 100 | Calm | ..... | ..... | 0 | ..... | 10s | ..... | S | 0.80 | 20.3 | Cloudy | |
| Uvalde, Texas | 29.20 | 741.7 | 30.00 | 762.0 | 66 | 18.9 | 84 | E | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 30.01 | 762.2 | 30.27 | 768.8 | 63 | 17.2 | 94 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Virginia City, Montana | 24.28 | 616.7 | 29.76 | 755.9 | 34 | 1.1 | 61 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Visalia, California | 29.92 | 760.0 | 30.30 | 769.6 | 45.7 | 7.6 | 80 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 29.84 | 757.9 | 29.95 | 760.7 | 50 | 10.0 | 79 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | W | 0.02 | 0.5 | Threatening | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 40 | 4.4 | 56 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.08 | 764.0 | 30.16 | 766.1 | 60 | 15.6 | 76 | SW | 7 | 3.1 | ..... | 2ck | Haze | Calm | Calm | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.82 | 655.8 | 30.18 | 766.6 | 48 | 8.9 | 56 | SW | 18 | 8.0 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 29.87 | 758.7 | 29.91 | 759.7 | 39 | 3.9 | 91 | SE | 10 | 4.5 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy | |
| Yankton, Dakota | 29.12 | 739.6 | 30.52 | 775.2 | 24 | — 4.4 | 74 | Calm | 0 | 0 | ..... | 10ck | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.95 | 760.7 | 30.12 | 765.0 | 63 | 11.7 | 61 | E | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.63 | 727.2 | 30.06 | 763.5 | 60 | 10.0 | 86 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy | J. B. Gordon. |
| Havana, Cuba, W. I | 30.16 | 766.1 | 30.21 | 767.3 | 69 | 20.6 | 75 | E | 1.2 | 0.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.25 | 641.3 | ..... | ..... | 65.0 | 18.3 | 82 | SW | 1 | 0.4 | ..... | 3cs | 5s;ks | ..... | ..... | 0.07 | 1.8 | ..... | Thomas Herran. |
| Navassa, W. I | 29.97 | 761.2 | 30.05 | 763.3 | 76.2 | 24.6 | ..... | NE | 12.1 | 5.4 | ..... | ..... | ..... | ..... | ..... | 0.28 | 7.1 | Partly cl'd'y | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 29.99 | 761.7 | 29.99 | 761.7 | 79 | 26.1 | 91 | E | ..... | ..... | 2 | ..... | 8ks | E | ..... ... | 1.440 | 36.6 | Cloudy | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,181.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m., Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City. 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,642 (?) ft., or 774.8 (?) m.; Virginia City, 5,460 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.16 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | | | | | | | | | | | | | | | | | | | | | |
| Navy Yard, Pensacola, Fla. | 30.40 | 772.1 | 63 | 17.2 | 63 | 17.2 | 94 | E | | | | | Fog | | | 0 | 0 | | | Clear. | |
| Navy Yard, Portsmouth, N.H | 29.86 | 758.4 | 68 | 20.0 | 39 | 3.9 | 34 | SSE | 4 | 1.8 | | | 10 | | | | | | | Overcast. | |
| Naval Hospital, Yokohama, Japan.....* | 30.08‡ | 764.0‡ | | | 46.1 | 7.8 | 73 | Calm | | | 0 | | 2k | | Calm | 0 | 0 | | | Fair. | |
| Adams, Panama | 30.00 | 762.0 | 76 | 24.4 | 76 | 24.4 | 95 | NW | | | 2-4 | | 2 | | N;W | | | | | Clear. | |
| Alaska, N. 37° 43′, W. 122° 40′ | 30.33 | 770.4 | 62 | 16.7 | 53 | 11.7 | 93 | NNW | | | 1 | | 8 | | SE | | | Long | NW | Foggy | |
| Alliance, Genoa, Italy | 30.16‡ | 766.1‡ | | | 57 | 13.9 | 81 | SE | | | 3-4 | | 5 | | S;E | | | Light | S;E | Fair. | |
| Ashuelot, Hong-Kong, China. | 29.98‡ | 761.5‡ | | | 62 | 16.7 | 88 | E | | | 3 | | 10 | | Calm | | | Smooth | | Drizzling | |
| Canonicus, New Orleans, La. | 30.20 | 767.1 | 47 | 8.3 | 61 | 16.1 | 88 | NE | | | 2 | | 10 | | NE | | | | | Fog and rain | |
| Colorado, New York, N. Y. | 29.86 | 758.4 | 44 | 6.7 | 42 | 5.6 | 100 | Calm | 0 | 0 | | | 10 | | | 0 | 0 | | | Foggy | |
| Constitution Lisbon, Portugal | 30.36‡ | 771.1‡ | | | 60 | 15.6 | 76 | NNE | | | 2 | | 1 | | Calm | | | | | Clear. | |
| Despatch, N. 39° 53′, E. 26° 09′ | 30.20‡ | 767.1‡ | | | 58 | 14.4 | 76 | SW | | | 2 | | 0 | | | | | Smooth | | Clear. | |
| Franklin, Norfolk, Va. | 30.17 | 766.3 | 67 | 19.4 | 62 | 16.7 | 77 | SW | 10 | 4.5 | | | 8 | | SW | 0 | 0 | | | Cloudy | |
| Gettysburg, Genoa, Italy | 30.09‡ | 764.3‡ | | | 59 | 15.0 | 88 | SSE | | | 2 | | 2 | | S;E | 0 | 0 | | | Clear. | |
| Hartford, Montevideo, Uruguay | 30.04 | 763.0 | 69 | 20.6 | 67 | 19.4 | 74 | SSW | | | 4 | | 5 | | SW | 0 | 0 | Smooth | | Fair | |
| Lackawana, Off Panama.....* | 29.75‡ | 755.6‡ | | | 76 | 24.4 | 91 | NE | | | 2 | | 5 | | | 0.2 | 5. | | | Fair | |
| Michigan, Erie, Pa.....† | 30.00 | 762.0 | | | 38 | 3.3 | 81 | W | | | 2 | | 0 | | | | | | | Clear. | |
| Monocacy, Shanghai, China.....* | 29.98‡ | 761.5‡ | | | 43 | 6.1 | 100 | ESE | | | 2 | | 10 | | ESE | | | | | Rainy | |
| Monongahela, Yokohama, Japan .....* | 30.06‡ | 763.5‡ | | | 49 | 9.4 | 50 | Calm | | | 0 | | 1 | | | 0 | 0 | | | D. clouds. | |
| New Hampshire, Port Royal, S. C. | 30.32 | 770.1 | 63 | 17.2 | 61 | 16.1 | 94 | WSW | 4 | 1.8 | | | 8 | | WSW | 0 | 0 | | | Misty | |
| Onward, Callao, Peru.....† | 30.07 | 763.8 | | | 67 | 19.4 | 95 | Calm | | | 0 | | 10 | | | | | Long | W | Foggy | |
| Palos, Tientsin, China | 29.78 | 756.4 | 40 | 4.4 | 40 | 4.4 | 56 | S | | | 1 | | 0 | | | | | | | Light mist. | |
| Passaic, Washington, D. C. | | | | | 50 | 10.0 | 79 | SW | | | 1 | | 8 | | | | | | | Cloudy | |
| Pensacola, S. 34° 47′, W. 72° 40′ | 30.03‡ | 762.8‡ | | | 64 | 17.8 | 89 | S | 16 | 7.2 | | | 0 | | | 0 | 0 | Smooth | S | Clear. | |
| Powhatan, N. 12° 10′, W. 68° 43′ | 30.01‡ | 762.2‡ | | | 77 | 25.0 | 86 | ENE | | | 3 | | 10 | | ENE | | | Long | E | Cloudy | |
| Quinnebaug, Port Mahon, Minorca Id | 30.50‡ | 774.7‡ | | | 63 | 17.2 | 62 | W | | | 3 | | 0 | | | | | Smooth | | Clear. | |
| Ranger, Nagasaki, Japan .....* | 30.12‡ | 765.0‡ | | | 57 | 13.9 | 75 | Calm | | | 0 | | 8 | | SSW | | | Smooth | | Clear? | |
| Richmond, N. 35° 15′, E. 22° 23′ | 30.23‡ | 767.8‡ | | | 57 | 13.9 | 41 | ENE | | | 1-2 | | 0 | | | 0 | 0 | Smooth | N | Clear | |
| Rio Bravo, Brownsville, Texas | 30.09 | 764.3 | 70 | 21.1 | 69 | 20.6 | 100 | SE | | | 1 | | 10 | | S | | | | | Cloudy | |
| Santee, Annapolis, Md. | 29.97‡ | 761.2‡ | | | 52 | 11.1 | 86 | W | | | 0-1 | | 10 | | W | 0 | 0 | | | Hazy | |
| Saratoga, Hampton Roads, Va. | 30.12 | 765.0 | | | 53 | 11.7 | 80 | SW | | | 3 | | 5 | | NE | 0 | 0 | | | Hazy | |
| St. Louis, League Island, Pa | 29.85 | 758.2 | 58 | 14.4 | 42 | 5.6 | 100 | SW | 10 | 4.5 | | | 10 | | Calm | | | | | Raining | |
| Supply, N. 34° 41′, W. 72° 16′. | 30.20‡ | 767.1‡ | | | 66 | 18.9 | 100 | WSW | | | 6 | | 10 | | | | | Smooth | | Misty | |
| Trenton Off Cape Fenat, (N. 43°, E. 10°) | 30.18‡ | 766.6‡ | | | 63 | 17.2 | 72 | ESE | | | 2-3 | | 0 | | | 0 | 0 | None | | Clear | |
| Tuscarora, Huatulco, Mexico | 29.98‡ | 761.5‡ | | | 75 | 23.9 | 72 | Calm | | | 0 | | 0 | | | 0 | 0 | Smooth | | Clear. | |
| Wabash, Boston, Mass. | 29.86‡ | 758.9‡ | | | 46 | 7.8 | 92 | SW | 8 | 3.6 | | | 10 | | | | | | | Light rain | |
| Wyoming, Constantinople, Turkey | 30.14‡ | 765.5‡ | | | 54 | 12.2 | 93 | SW | | | 2-3 | | 2 | | | | | Smooth | SW | Fair. | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | | |
| **Pacific Mail S. S. Co. Marine Series.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | |
| S. S. Colima, N. 21° 00', W. 107° 18'...† | | 30.06‡ | 763.8‡ | 72 | 22.2 | 90 | NW | | | 4 | | 9 | | NW;W | 0.01 in. or 0.3mm. | Small | W | D. clouds | Capt. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |
| **White Star Line Marine Series.** Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |
| **Occidental and Oriental S. S. Co. Marine Series.** Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, Capt. L. Meyer, Hong-Kong, China...* | | 29.83‡ | 757.7‡ | 64 | 17.8 | 89 | ENE | | | 4 | | ks | | NE | | Smooth | | Misty | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, Yokohama, Japan...† | | 29.82‡ | 757.4‡ | 58 | 14.4 | 88 | Var. | | | 3 | | c | | Var. | | | | Raining? | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |
| **North German Lloyd of Bremen Marine Series.** Furnished by the coöperation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 26° 02', W. 71° 12' | | 30.31‡ | 769.9‡ | 72.0 | 22.2 | 72 | NNE | | | 4 | | 5 | | N | | Mod'ate | NE | Fine | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:36 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Lo'wr 0—10. | Upper. From— | Lower. From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Liverpool | | 30.32‡ | 770.1‡ | 54 | 12.2 | | NW | | | 4 | | 2 | | NW | Light | | | Clear | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Rendle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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**ALLAN LINE MARINE SERIES.**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES.** (Miscellaneous.

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

## OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 12, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 30.24 | 768.0 | 61.9 | 16 6 | 73 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | |
| Nemours | ..... | ..... | 30.23 | 767.9 | 63.0 | 17.2 | 74 | NW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Kesxuche. |
| Algiers | ..... | ..... | 30.17 | 766.4 | 60.1 | 15.6 | 70 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Tourlliere. |
| La Calle | ..... | ..... | 30.21 | 767.3 | 61.2 | 16.2 | 70 | NNW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Foufrede. |
| Tunis | ..... | ..... | 30.23 | 767.8 | 64.4 | 18.0 | 46 | NNW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 30.27 | 768.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gan. |
| Saida | ..... | ..... | 30.19 | 766.9 | 64.4 | 18.0 | 23 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Herbin. |
| Tebessa | ..... | ..... | 30.27 | 768.9 | 59.7 | 15.4 | 35 | NNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Watrin. |
| Geriville | ..... | ..... | 30.23 | 767.8 | 54.1 | 12.3 | 95 | S | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Brugniaux. |
| Laghouat | ..... | ..... | 30.26 | 768 5 | 59.7 | 15.4 | 15 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bertrand. |
| Biskra | ..... | ..... | 30.24 | 768.1 | 70.9 | 21.6 | 28 | WNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.47 | 748.6 | 30.03 | 762.7 | 52.9 | 11.6 | 52 | SE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.08 | 737.3 | 29.82 | 757.4 | 35.6 | 2.0 | 64 | WSW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.065 | 1.4 | ..... | Dr. Wierzbiski |
| Eperies | 28.93 | 734.7 | 29.82 | 757.5 | 42.1 | 5.6 | 82 | NW | ..... | ..... | 6 | ..... | 8cs | ..... | SE | 0.012 | 0.30 | ..... | Julius Mikolik. |
| Gratz | 28.72 | 729.5 | 29.98 | 761.6 | 48.2 | 9.0 | 63 | S.W. | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.46 | 722.9 | 29.91 | 759.8 | 43.7 | 6.5 | 33 | W | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0.008 | 0.2 | ..... | Prof. A. Gottschling. |
| Kremsmünster | 28.67 | 728.2 | 30.06 | 763.4 | 37.9 | 3.3 | 71 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.303 | 7.7 | ..... | Prof. C. Wagner. |
| Lemberg | 28.03 | 727.3 | 29.85 | 758.0 | 35.1 | 1.7 | 84 | NW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.134 | 3.4 | ..... | Dr. T. Stanecki. |
| Pola | 29.93 | 760.2 | 30.04 | 763.0 | 56.3 | 13.5 | 75 | SE | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.44 | 747.7 | 29.91 | 759.8 | 40.5 | 4.7 | 47 | S | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 29.94 | 760.4 | 30.04 | 763.0 | 53.6 | 12.0 | 78 | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | P. Busin. |
| Vienna | 29.26 | 743.1 | 29.98 | 761.6 | 45.7 | 7.6 | 44 | W | ..... | ..... | 5 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 367 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Royal Observatory |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. E. de Cae. |
| Maeseyck | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Pierrot |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:9, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.81 | 757.2 | 29.91 | 759.7 | 32.1 | 0.1 | | NNE | 19 | 8.5 | | | 10 | | | 0.116 | 2.92 | Snow-sq'alls | W. Boswell. |
| Ardrossan | 29.74 | 755.4 | 29.76 | 755.9 | 48 | 8.9 | | NNW | | | 6 | | 5 | | | | | Squally | William McNeil. |
| Armagh, Observatory | | | 30.02 | 762.5 | 49.4 | 9.7 | | WNW | 25 | 11.2 | | | 3 | | | | | Squally | S. Call. |
| Bidston, (Liverpool Obs.) | | | 29.84 | 757.9 | 49.4 | 9.7 | | WSW | 60 | 26.8 | | | 8 | | | | | Overcast | John Hartnup. |
| Bolton, (Sharples) | | | 29.81 | 757.2 | 49.2 | 9.6 | | WSW | 54 | 24.1 | | | 8 | | | | | Squally | Thomas Mackereth. |
| Bradford, Yorkshire | 29.30 | 744.2 | 29.70 | 754.4 | 51.1 | 10.6 | | NW | | | 6 | | 3 | | | 0.04 | 1.0 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.90 | 759.4 | 29.92 | 760.0 | 80 | 26.7 | | NE | | | 1 | | 6 | | | | | Gloomy | Pvt. G. Surgener, A H. |
| Cambridge, Observatory | | | 29.87 | 758.7 | 52.0 | 11.1 | | SW | | | 2 | | 10 | | | | | Overcast | H. Todd. [O. |
| Cardington | | | 29.87 | 758.7 | 53.0 | 11.7 | | NW | | | 4 | | 8 | | | | | Overcast | John McLaren. |
| Chatham, School M. E | 29.86 | 758.4 | 29.99 | 761.7 | 51.1 | 10.6 | | SW | | | 3 | | 9 | | | | | Overcast | Corpl. Daly, R. E. |
| Dartmoor | 28.64 | 727.4 | 30.13 | 765 3 | 45.0 | 7.2 | | W | | | 5 | | 10 | | | | | Rain & fog | Alexander Watt. |
| Donaghadee | 29.87 | 758.7 | 29.91 | 759.7 | 49 | 9.4 | | NW | | | 7 | | 3 | | | | | D. clouds | J. Mac Gowan. |
| Dover | 29.93 | 760 2 | 29.96 | 761.0 | 45 | 7.2 | | WSW | | | 5 | | 7 | | | | | ¾ clouded | J. Costello. |
| Falmouth, Observatory | 30.01 | 762.2 | 30.24 | 768.1 | 50.5 | 10.3 | | WSW | | | 3 | | 10 | | | | | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.67 | 702 8 | 29.99 | 761 7 | 67.0 | 19.4 | | E | | | 2 | | 10 | | | | | Overcast | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.70 | 754.4 | 29.93 | 760.2 | 88 | 31.1 | | NW | | | 1 | | 3 | | | | | D. clouds | |
| Galway, Queen's College | | | 30.08 | 764.0 | 52 | 11.1 | | NW | | | 3 | | 10 | | | | | Overcast | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.08 | 764.0 | 30.13 | 765.3 | 62.2 | 16.8 | | E | | | 2 | | 1 | | | | | Blue sky | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.63 | 752.6 | 29.83 | 757.7 | 38.4 | 3.6 | | NE | | | 8 | | 10 | | | | | Rain-squalls | D. G. Maclean. |
| Great Yarmouth | 29.78 | 756.4 | 29.78 | 756.4 | 51 | 10.6 | | WSW | | | 5 | | 6 | | | Blank | Blank | D. clouds | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.79 | 756.7 | 29.96 | 761.0 | 51.7 | 10.9 | | WSW | | | 4 | | 10 | | | | | Overcast | The Staff, for G. B. Airy. |
| Guernsey | 30.01 | 762.2 | 30.23 | 767.8 | 48 | 8.9 | | SW | | | 3 | | 8 | | | | | D. clouds | Dr. S. E. Hoskins, F.R.S. |
| Helston | 30.20 | 767.1 | 30.32 | 770.1 | 50 | 10.0 | | SW | | | 4 | | 10 | | | 0 | 0 | Misty | M. P. Moyle. |
| Holyhead | 29.93 | 760.2 | 29.98 | 761.5 | 51 | 10.6 | | WNW | | | 6 | | 1 | | | | | Blue sky | John Tilston. |
| Jersey | 30.00 | 762.0 | 30.30 | 769.6 | 46.9 | 8.3 | | W | | | 4 | | 10 | | | Blank | Blank | Overcast | J. Fisher. |
| Kew, Observatory | 29.95 | 760.7 | 29.99 | 761.7 | 52.1 | 11.2 | | WSW | 28 | 12.5 | | | 10 | | | | | Threatening | The Meteorological Of. |
| Leicester, Museum | 29.62 | 752 3 | 29.87 | 758.7 | 51.9 | 11.1 | | NW | | | 6 | | 10 | | | | | Overcast | Wm. J. Harrison, F.G .S |
| Malta, (Mediterranean) | 30.09 | 764.3 | 30.16 | 766.1 | 59 | 15.0 | | NW | | | 1 | | 3k | | | | | Blue sky | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.90 | 759.4 | 30.00 | 762.0 | 52 | 0.0 | | NE | | | 5 | | 10 | | | | | Overcast | W. D. Penny. |
| Nassau, (Bahamas) | | | 30.17 | 766.3 | 72.0 | 22.2 | | E | | | 1 | | 4 | | | | | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.65 | 753.1 | 29.84 | 757.9 | 53.4 | 11.9 | | WNW | | | 6 | | 10d | | W | 0 | 0 | Overcast | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.35 | 745.5 | 29.88 | 758.9 | 51.1 | 10.6 | | WSW | | | 7–8 | | 10 | | | | | Overcast | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | | | 29.97 | 761.2 | 51 | 10.6 | | W | | | 6 | | 10 | | | | | Threatening | H. E. Bellamy. |
| Plymouth | 30.12 | 765.0 | 30.19 | 766.8 | 53.0 | 11.7 | | W | | | 4 | | 10 | | | | | Overcast | John Merrifield. |
| Roche's Point | 30.14 | 765.5 | 30.18 | 766.6 | 56 | 13.3 | | NW | | | 5 | | 8 | | | | | ¾ clouded | W. Kennedy. |
| Saint Ann's Head | 29.94 | 760.5 | 30.11 | 764.8 | 46 | 7.8 | | W | | | 6 | | 4 | | | | | Foggy | John C. Walker. |
| Sandwick Manse, (Orkneys | | | 30.01 | 762.2 | 30 | — 1.1 | | N | 26 | 11.6 | | | 10 | | | | | Snowing | Dr. Hoskins. |
| Scutari, Cemetery, (Turkey | | | 29.93 | 760.2 | 57.0 | 13.9 | | SW | | | 1 | | 2 | | | | | Blue sky | W. H. Lyne. |
| Sheffield | 29.47 | 748.5 | 29.75 | 755 6 | 53.8 | 12.1 | | WNW | | | 8 | | 5 | | | 0.02 | 0.5 | D. clouds | W. F. Cooper. |
| Silloth Rectory | 29.80 | 756.9 | 29.83 | 757.7 | 51.9 | 11.1 | 76 | W | | | 6 | | 8 | | | 0.020 | 0.51 | D. clouds | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.42 | 747.2 | 29.83 | 757.7 | 48.2 | 9.0 | | WSW | | | 6 | | 9 | | | | | Squally | Rev. S. J. Perry. |
| Stratfield Turgiss | 29.85 | 758.2 | 30.07 | 763.8 | 49.2 | 9.6 | | W | | | 4–5 | | 8 | | | | | Squally | C.H.Griffith, F..M.S. |
| Thurso | 29.93 | 760.2 | 29.99 | 761.7 | 53 | 0.6 | | NNE | | | 5 | | 10 | | | | | Gloomy | John Trotter. |
| Truro, Royal Institution | 30.16 | 766.1 | 30.21 | 767.3 | 53 | 11.7 | | W | | | 5 | | 10 | | | | | Raining | W. Newcombe. |
| Valencia, Observatory | 30.22 | 767.6 | 30.25 | 768.3 | 52.9 | 11.6 | | W | 23 | 10.3 | | | 10 | | | | | D. clouds | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.03 | 762.8 | 30.07 | 763.8 | 78 | 25.6 | 57 | SSE | 18 | 8.0 | | 0 | 0 | | | 0.02 | 0.5 | Fine | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | | | 30.04 | 763.0 | 60.0 | 16.0 | 84 | NE | | | 2 | | 10k | | | 0.01 | 0.3 | Covered | FrancisAbbott, F.R.A.S. |
| Leith, Restalrig Park | | | 29.92 | 760.2 | 36.2 | 2.3 | | NE | | | 7 | | 10ks | | | 0 | 0 | Cloudy | Andrew Gibb. |
| Mauritius, Observatory | 29.80 | 756.9 | 29.99 | 761.7 | 79.7 | 26.5 | 66 | ESE | 14.0 | 6.3 | | 1 | 3 | | E | 0 | 0 | Fine | C. Meldrum. |
| Melbourne, Observatory | 29.85 | 758.2 | 29.94 | 760.5 | 67.1 | 19.5 | 82 | E | 13 | 5.8 | | | 10 | | | 0.16 | 4.1 | Thunder,l'ghtn'g | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | | | 29.96 | 761.0 | 37 | 2.8 | | N | | | 7 | | 10 | | | 0.4 | 10. | | J. Youngclause. |
| North Unst, (Shetland Is.) | | | 29.92 | 760.0 | 25 | — 3.9 | | N | | | 7 | 7 | 3 | NW | | | | Snowing | Robert Burnet. |

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day,) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day,) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

## British Marine Series.

| Vessels. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 35° 54′, E. 14° 30′ | | | 30.17‡ | 766.3‡ | 58.8 | 14.9 | | NNW | | | 2 | | | | | | | D. clouds | Capt. W. J. L. Wharton. |
| Brig Alliance, N. 6° 00′, W. 53° 10′ | | | 29.92‡ | 760.0‡ | 82 | 28.3 | | ENE | | | 4 | | 4 | | | | | D. clouds | Capt. W. Scott. |
| S. S. Amanda | | | | | | | | | | | | | | | | | | | Capt. B. Boyes. |
| Barque Belle Isle, N. 24° 34′, W. 80° 25′ | | | 30.16‡ | 765.8‡ | 73 | 22.8 | | E | | | 6 | | 5 | | | 4 | NE | D. clouds | Capt. A. J. Brown. |
| Ship British Commodore, N. 39° 10′, W. 52° 20′ | | | 30.03 | 762.8 | 57 | 13.9 | | W | | | 3 | | 6 | | | 3 | N;SW | D. clouds | Capt. J. W. Thorne. |
| —— City of Agra, N. 5° 27′, W. 33° 50′ | | | 30.01‡ | 762.2‡ | 81.8 | 27.7 | | N | | | 5 | | 6 | | | | | D. clouds | Capt. Thos. Young. |
| Barque Commewyne, N. 23° 50′ W. 58° 55′ | | | 30.14‡ | 765.5‡ | 71.5 | 21.9 | | ENE | | | 4 | | 7 | | | | | D. clouds | Capt. A. Buchan. |
| Barque Fedalina | | | | | | | | | | | | | | | | | | | Capt. H. L. Fox. |
| Barque Mertole, N. 47° 46′, W. 10° 52′ | | | 30.40‡ | 772.1‡ | 53.6 | 12.0 | | WNW | | | 3 | | 10 | | | | | Overcast | Capt. E. W. Turner. |
| S. S. Nizam | | | | | | | | | | | | | | | | | | | Capt. Barlow. |
| S. S. Strathleven | | | | | | | | | | | | | | | | | | | Capt. C. W. Pearson. |
| S. S. Wyberton, N. 13° 32′, E. 43° 00′ | | | 29.92‡ | 760.0‡ | 80 | 26.7 | | NNW | | | 2 | | 1 | | | | | Blue sky | Capt. W. R. McMontry. |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.28 | 667.5 | 30.00 | 762.0 | 61.7 | 16.5 | 80 | SE | ..... | ..... | 1 | 1c;p | ..... | ..... | ..... | 0 | 0 | ..... | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.50 | 749.2 | 29.54 | 750.4 | 31.8 | — 0.1 | 72 | NNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... |
| Faröe | 29.52 | 749.7 | 29.54 | 750.2 | 30.2 | — 1.0 | 100 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing. |
| Godthaab, (Greenland) | 29.98 | 761.6 | 30.03 | 762.7 | 23.4 | — 4.8 | 67 | ENE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 30.15 | 765.7 | 30.18 | 766.6 | 21.2 | — 6.0 | 56 | N | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.32 | 744.8 | 29.49 | 749.1 | 31.3 | — 0.4 | 92 | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.80 | 756.8 | 30.35 | 770.8 | 47.5 | 8.6 | 92 | NE | ..... | ..... | 1 | ..... | 5 | ..... | NW | 0 | 0 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 30.08 | 764.0 | 30.19 | 766.8 | 55.4 | 13.0 | 75 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.098 | 2.5 | Covered | Bouvallet, Director. |
| Avignon, Normal School | 30.06 | 763.6 | 30.14 | 765.6 | 60.4 | 15.8 | 47 | N | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | M. Giraud, Director. |
| Bar-sur-Seine | 29.67 | 753.7 | 30.24 | 768.2 | 47.7 | 8.7 | 49 | W | ..... | ..... | 1 | ..... | 5cn | ..... | W | 0.008 | 0.2 | Cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 30.03 | 762.7 | 30.32 | 770.0 | 52.2 | 11.2 | 64 | W | ..... | ..... | 3 | ..... | 5 | ..... | WNW | 0 | 0 | Cloudy | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.37 | 745.9 | 30.28 | 769.1 | 46.4 | 8 | 59 | SW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0.106 | 2.7 | Slightly cl'dy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.41 | 747.1 | 30.34 | 770.6 | 43.7 | 6.5 | 56 | N | ..... | ..... | 1 | ..... | 2ck | W | W | 0 | 0 | Slightly cl'dy | M. Marlot, Director. |
| Bourges, Normal School | 29.82 | 757.3 | 30.38 | 771.6 | 49.3 | 9.6 | 74 | W | ..... | ..... | 2 | ..... | 1 | NNW | NNW | 0 | 0 | Clear | A. Waquet, Director |
| Brest, Naval Observatory | 30.02 | 762.6 | 30.27 | 768.8 | 58.3 | 14.6 | 89 | W | ..... | ..... | 4 | ..... | 4 | ..... | W | 0 | 0 | ..... | M. de Rermaree, Director |
| Carcassonne, Normal School | 29.87 | 758.7 | 30.30 | 769.6 | 52.9 | 11.6 | 71 | W | ..... | ..... | 2 | ..... | 5 | NW | NW | 0 | 0 | Cloudy | September, Director. |
| Caen, Normal School | 30.17 | 766.4 | 30.25 | 768.4 | 51.4 | 10.8 | 73 | W | ..... | ..... | 2 | ..... | 8 | ..... | W | 0 | 0 | Very cloudy | M. Lair, Director. |
| Chartres, Normal School | 29.64 | 752.9 | 30.22 | 767.5 | 50.0 | 10 | 76 | SW | ..... | ..... | 1 | ..... | 3 | ..... | E | 0 | 0 | ..... | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.62 | 760.0 | 30.24 | 768.0 | 47.7 | 8.7 | 63 | W | ..... | ..... | 4 | ..... | 5 | E | E | 0 | 0 | Cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.88 | 733.6 | 30.24 | 768.0 | 57.2 | 14.0 | 33 | NW | ..... | ..... | 1 | ..... | 2 | ..... | NW | 0 | 0 | ..... | Alluard, Director. |
| Commercy, Normal School | 29.36 | 745.6 | 30.24 | 768.1 | 48.0 | 6.1 | 58 | W | ..... | ..... | 3 | ..... | 5kn | ..... | W | 0.020 | 0.5 | Cloudy | Dr. Coulet, Director. |
| Commune de Grésque* | 28.94 | 735.0 | 30.08 | 764.0 | 61.0 | 16.1 | 40 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Kina, Director. |
| Grenoble, Normal School | 29.47 | 748.5 | 30.24 | 768.1 | 55.0 | 12.8 | 50 | NW | ..... | ..... | 2 | ..... | k | NW | ..... | 0 | 0 | ..... | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 30.12 | 765.1 | 30.34 | 770.7 | 54.7 | 12.6 | 59 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Mouillot, Director. |
| Le Mans, Normal School | 29.99 | 761.8 | 30.31 | 769.8 | 50.0 | 10 | 70 | WNW | ..... | ..... | 2 | ..... | 2 | ..... | WNW | 0 | 0 | Slightly cl'dy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.36 | 745.6 | 30.29 | 769.4 | 49.1 | 9.5 | 58 | W | ..... | ..... | 2 | ..... | 5 | ..... | W | 0.031 | 0.80 | Cloudy | Baudry, Director. |
| Lorient, Naval Observatory | 30.28 | 769.1 | 30.38 | 771.6 | 52.2 | 11.2 | 80 | WSW | ..... | ..... | 2 | ..... | ..... | ..... | NW | 0.008 | 0.2 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galxin, Director |
| Mirecourt, Normal School | 29.19 | 741.5 | 30.30 | 769.6 | 41.7 | 5.4 | 66 | W | ..... | ..... | 3 | ..... | s | ..... | E | 0 | 0 | ..... | M. Barbier, Director. |
| Nismes, Normal School | 29.97 | 761.3 | 30.17 | 766.4 | 62.6 | 17 | 41 | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Boyer, Director. |
| Privas, Normal School | 29.08 | 738.6 | 30.13 | 765.4 | 61.9 | 16.6 | 55 | N | ..... | ..... | 3 | ..... | ..... | N | N | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 25 28 | 642.2 | ..... | ..... | 32.7 | 0.4 | 100 | W | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.32 | 770.2 | 30.35 | 771.0 | 59.0 | 15.0 | 75 | WNW | ..... | ..... | 1 | ..... | 5 | WNW | WNW | 0 | 0 | ½ covered | Lt. Decante, Director. |
| Rouen, Normal School | 30.12 | 765.1 | 30.21 | 767.3 | 49.8 | 9.9 | 66 | W | ..... | ..... | 2 | ..... | 2 | ..... | NW | 0.031 | 0.8 | Slightly cl'dy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 30.26 | 768.6 | 30.29 | 769.3 | 50.0 | 10.0 | 79 | W | ..... | ..... | 3 | ..... | 5 | W | W | 0 | 0 | Cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 30.07 | 763.7 | 30.23 | 767.9 | 50.9 | 10.5 | 46 | W | ..... | ..... | 2-3 | ..... | ..... | NW | NW | 0.004 | 0.1 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 29.10 | 741.5 | 30.29 | 769.3 | 51.8 | 11 | 63 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Huguet, Director. |
| Versailles Observatory | 29.73 | 755.2 | 30.23 | 767.8 | 48.4 | 9.1 | ..... | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0.008 | 0.20 | Clear | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.58 | 751.3 | 30.31 | 769.9 | 57.2 | 14 | 78 | ESE | ..... | ..... | 1 | ..... | 1 | ..... | W | 0 | 0 | Clear | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.94 | 760.4 | 29.96 | 761.1 | 77.0 | 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 29.63 | 752.7 | 30.26 | 768.6 | 52.3 | 11.3 | 55 | NNW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 24.98 | 634.5 | 30.30 | 769.5 | 47.3 | 8.5 | 37 | NW | 9.4 | 4.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | 30.11 | 764.8 | 59.5 | 15.3 | 75 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.95 | 760.8 | ..... | ..... | 50.9 | 10.5 | 51 | W | ..... | ..... | 3 | ..... | 6 | ..... | NW | Inap. | Inap. | ..... | Marié Davy, Director. |
| Perpignan | 30.13 | 765.2 | 30.23 | 767.9 | 58.5 | 14.7 | 48 | NE | 18.6 | 8.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.65 | 575.3 | ..... | ..... | 31.3 | —0.4 | ..... | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Gen'l de Nansouty. |
| Toulouse, Observatory | 29.64 | 752.8 | 30.37 | 771.3 | 50.7 | 10.4 | 79 | NW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | M. Mercadier Juller. |
| Tours | 30.10 | 764.4 | 30.29 | 769.4 | 52.9 | 11.6 | 56 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 29.78 | 756.5 | 29.81 | 757.2 | 50.0 | 10.0 | 99 | ESE | 20.4 | 9.1 | ..... | ..... | 10n | ..... | ..... | 1.772 | 45.0 | Thunder-storm | Marc Dechevrens, S. J. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and in the official series the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt apparently gives cloud direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi. (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.15 | 740.4 | 29.99 | 761.8 | 38.3 | 3.6 | 69 | W | | | 6 | | 8 | W | | 0.020 | 0.5 | | Prof. Dr. Hoh. |
| Berlin | 29.60 | 751.7 | 29.77 | 756.2 | 42.4 | 5.8 | 70 | W | | | 5 | | 8 | | | Inap. | Inap. | Rain & snow | Prof. Arndt. |
| Breslau | 29.28 | 743.6 | 29.80 | 757.0 | 37.4 | 3.0 | 64 | W | | | 8 | | 10 | | | 0.182 | 4.62 | Raining | Royal University Obs'y |
| Carlsruhe | 29.69 | 754.2 | 30.13 | 765.4 | 44.2 | 6.8 | 54 | SW | | | 4 | | 10 | SW | | 0.071 | 1.8 | Raining | Albert Senz. |
| Cassel | 29.25 | 742.9 | 29.85 | 758.2 | 39.2 | 4.0 | 76 | SW | | | 7 | | 10 | WNW | | 0.152 | 3.86 | Raining | Dr. H. Möhl. |
| Crefeld | 29.74 | 755.5 | 29.91 | 759.6 | 47.8 | 8.8 | 67 | SW | | | 6 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.69 | 754.1 | 30.06 | 763.5 | 43.3 | 6.3 | | WSW | | | 4 | | 7 | | | 0.008 | 0.2 | | Physical Society. |
| Friedrichshafen | 28.70 | 728.9 | 30.09 | 764.3 | 46.9 | 8.3 | 71 | W | | | 3 | | 7 | W | | 0.209 | 5.3 | Rain & snow | M. Wilhelm. |
| Hamburg | 29.63 | 752.7 | 29.71 | 754.5 | 34.0 | 1.1 | 98 | SW | | | 3 | | 10 | | | 0.091 | 2.3 | Fog & snow | Captain F. Hegemann. |
| Kiel | 29.59 | 751.5 | 29.60 | 751.9 | 34.3 | 1.3 | 93 | W | | | 4 | | 10 | | | 0.140 | 3.55 | Snowing | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.39 | 746.5 | 29.48 | 748.7 | 31.1 | — 0.5 | 80 | NW | | | 7 | | 4 | | | 0.039 | 1.0 | Snowing | Prof. E. Luther. |
| Köslin | | | 29.56 | 750.7 | 31.5 | — 0.3 | | NW | | | 4 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.47 | 748.4 | 29.90 | 759.5 | 37.6 | 3.1 | 61 | SW | | | 5 | | 10 | WNW | | 0.091 | 2.3 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.34 | 745.2 | 29.38 | 746.3 | 31.8 | — 0.1 | 68 | W | | | 7 | | 10s | | | | | Squally | Skalweit. |
| Neufahrwasser | 29.52 | 749.8 | 29.54 | 750.2 | 31.1 | — 0.4 | 67 | NW | | | 4 | | 10 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.47 | 748.5 | 29.77 | 756.1 | 32.9 | 0.5 | 95 | NW | | | 8 | | 10 | | | 0.496 | 12.6 | Snowing | Dr. Magener. |
| Strassburg (in Alsace) | 29.63 | 752.7 | 30.20 | 767.0 | 46.0 | 7.8 | 60 | W | | | 4 | | 7 | W | | 0.030 | 0.75 | | Imp. University Observatory. |
| Stuttgart | 29.18 | 741.1 | 30.11 | 764.8 | 41.9 | 5.5 | 55 | W | | | 2 | | 9 | W | | 0.118 | 3.0 | Raining | Prof. Schoder. |
| Treves, (Trier) | | | | | | | | | | | | | | | | | | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.56 | 725.4 | 30.12 | 765.1 | 37.2 | 2.9 | 74 | W | 22 | 10 | | | 10 | | W | 0.067 | 1.7 | | Dr. Van Bebber |
| Wustrow, Naval School | 29.63 | 752.7 | 29.66 | 753.3 | 31.5 | — 0.3 | 94 | WNW | | | 5 | | 10s | | | 0.157 | 4.0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.63 | 752.7 | 30.02 | 762.6 | 63.3 | 17.4 | | SW | | | 1.0 | | | | | | | Clear. | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.74 | 755.3 | 29.79 | 756.6 | 74.6 | 23.7 | 54 | WNW | 8 | 3.6 | | | 2 | | | 0 | 0 | D. clouds | |
| Deesa | 29.30 | 744.2 | 29.77 | 756.1 | 83.0 | 28.3 | 33 | WSW | 11.6 | 5.2 | | | 3 | W | | 0 | 0 | D. clouds | |
| Bombay | 29.77 | 756.2 | 29.81 | 757.2 | 79.5 | 26.4 | 80 | NW | 20 | 8.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.02 | 737.0 | 29.76 | 755.9 | 77.9 | 25.5 | 26 | NW | 3.2 | 1.4 | | | 9 | | | 0 | 0 | Cloudy | |
| Belgaum | 27.27 | 692.8 | 29.76 | 755.8 | 85.9 | 29.9 | 71 | WSW | 13.0 | 5.8 | | | 1 | | | 0 | 0 | | |
| Roorkee | 28.85 | 732.7 | 29.75 | 755.7 | 74.8 | 23.8 | 37 | NE | 2.8 | 1.2 | | | 10 | | | 0 | 0 | Gloomy | |
| Agra | 29.16 | 740.8 | 29.72 | 754.8 | 87.7 | 30.9 | 37 | S | | | | | 3 | | S | 0 | 0 | | |
| Nagpur | 28.72 | 729.6 | 29.74 | 755.5 | 90.6 | 32.5 | 36 | N | 3.4 | 1.5 | | | 5 | | E | 0 | 0 | D. clouds | |
| Lucknow | 29.37 | 745.9 | 29.74 | 755.4 | 85.2 | 29.6 | 44 | N | 0.7 | 0.3 | | | 10 | | | 0 | 0 | Overcast | |
| Allahabad | 29.43 | 747.5 | 29.74 | 755.4 | 81.4 | 27.4 | 54 | Calm | 1.3 | 0.6 | | | 10 | | | 0 | 0 | Overcast | |
| Patna | 29.54 | 750.4 | 29.73 | 755.0 | 82.9 | 28.3 | 41 | Calm | 0.8 | 0.4 | | | 8 | W | W | 0 | 0 | D. clouds | |
| Hazaribagh | 27.70 | 703.7 | 29.68 | 753.9 | 64.8 | 29.3 | 20 | WNW | 7.9 | 3.5 | | | 1 | | | 0 | 0 | Squally | |
| Cuttack | 29.72 | 754.8 | 29.80 | 756.9 | 89.0 | 31.7 | 45 | SSW | 5.5 | 2.5 | | | 2 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.67 | 753.7 | 29.70 | 754.2 | 81.0 | 27.2 | 59 | NW | 12.0 | 5.4 | | | 9 | | W | 0 | 0 | Overcast | |
| Goalpara | 29.25 | 742.9 | 29.63 | 752.7 | 83.6 | 28.6 | 32 | WSW | 6.1 | 2.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.78 | 756.1 | 29.82 | 757.5 | 78.9 | 26.1 | 88 | N | 6.5 | 2.9 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.43 | 747.5 | 29.77 | 756.2 | 70.0 | 21.1 | 74 | ENE | 3.1 | 1.4 | | | 10 | W | W | 0.21 | 5.3 | Overcast | |
| Jubbulpore | 28.88 | 720.9 | 29.72 | 755.0 | 88.5 | 31.3 | 25 | NW | 6.6 | 3.0 | | | 7 | NE | | 0 | 0 | D. clouds | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.5 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.63 | 752.6 | 30.05 | 763 2 | 55.8 | 13.2 | 62 | SW | 3.8 | 1.7 | ..... | ..... | 10 | .. ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.51 | 749.5 | 30.03 | 762.8 | 60.1 | 15.6 | 46 | SSW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.92 | 760.0 | 30.03 | 762.8 | 54.9 | 12.7 | 67 | SE | 1.8 | 0.8 | ..... | ..... | 6 | NE | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 29.11 | 739.4 | 30.03 | 762.7 | 60.1 | 15.6 | 42 | ESE | 1.3 | 0.6 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.90 | 759.5 | 30.10 | 764.4 | 57.7 | 14.3 | 68 | S | 1.8 | 0.8 | ..... | ..... | 10 | S | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 28.08 | 713.3 | 30.02 | 762.5 | 58.5 | 14.7 | 28 | NE | ..... | ..... | 2 | ..... | 1 | N | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.97 | 761.2 | 30.02 | 762.5 | 52.3 | 11.3 | 76 | N | 14.3 | 6.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.82 | 757.4 | 30.08 | 764.0 | 57.2 | 14.0 | 60 | NW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Cav. F Meucci |
| Leghorn | 29.99 | 761.7 | 30.07 | 763.8 | 59.5 | 15.3 | 65 | W | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 29.91 | 759.7 | 30.09 | 764.2 | 61.6 | 16.4 | 50 | W | 5.6 | 2.5 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.83 | 757.7 | 30.09 | 764.2 | 59.7 | 15.4 | 34 | WNW | 5.6 | 2.5 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.19 | 741.4 | 30.09 | 764.2 | 59.2 | 15.1 | 71 | SW | 4.3 | 1.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.93 | 760.1 | 30.12 | 765.0 | 59.0 | 15.0 | 58 | NW | ..... | ..... | 4 | ..... | 8 | NW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.88 | 759.0 | 30.14 | 765.5 | 57.6 | 14.2 | 56 | E | 6.9 | 3.1 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. G. Caccialatore. |
| Syracuse | 30.04 | 762.9 | 30.11 | 764.8 | 57.7 | 14.3 | 57 | ESE | 7.4 | 3.3 | ..... | ..... | 1 | W | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.57 | 751.0 | 30.12 | 765.1 | 56.8 | 13.8 | 65 | S | 2.5 | 1.1 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 29.95 | 760.7 | 29.97 | 761.2 | 47.2 | 8.4 | 89 | N | 1.0 | 0.4 | ..... | ..... | 8ck | ..... | ..... | 0.050 | 1.27 | Fair | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.73 | 755.1 | 29.94 | 760.6 | 48.1 | 8.9 | 91 | Calm | 0 | 0 | ..... | ..... | 1s | ..... | ..... | 0.170 | 4.32 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.91 | 759.7 | 29.98 | 761.5 | 44.9 | 7.2 | 86 | SW | 3.3 | 1.5 | ..... | ..... | 1s | ..... | ..... | 0 | 0 | Fair | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.11 | 637.9 | 30.17 | 766.3 | 48.2 | 9.0 | 54 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. L. Perez. |
| Leon | 24.48 | 621.8 | 30.19 | 766.9 | 59.9 | 15.5 | 78 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. M. Leal |
| Mexico, Central Obs'y | 23.12 | 587.1 | 30.21 | 767.4 | 49.3 | 9.6 | 75 | Calm | 0 | 0 | .. ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 55.0 | 12.8 | 87 | NNE | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | M. V. de Leon, M. E. |
| Tlacotalpam | 30.07 | 763.7 | 30.08 | 764.0 | 71.6 | 22 | 93 | NNE | ..... | ..... | 1 | 5 | 7 | S | NE | 0 | 0 | Covered | M. M. Cházaro. |
| San Luis Potosi | 24.28 | 616.1 | 30.27 | 768.9 | 54.0 | 12.2 | 62 | ESE | ..... | ..... | 1 | 8 | 1 | W | E | 0.512 | 13.0 | Covered | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Puebla, (Catholic Institute) | 23.45 | 595.5 | 30.21 | 767.3 | 42.8 | 6.0 | 34 | ENE | 0.4 | 0.2 | ..... | 0 | 0 | ..... | ..... | 0.012 | 0.26 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.43 | 722.1 | 30.08 | 764.0 | 75.6 | 24.2 | 68 | NE | ..... | ..... | 1 | 0 | 3 | ..... | W | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.6 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1893 m., or 6210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2201 m., or 7220.9 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 592 m., or 1745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.95 | 760.7 | 29.95 | 760.7 | 46.4 | 8.0 | ..... | WSW | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.016 | 0.4 | ..... | |
| Groningen | 29.66 | 753.4 | 29.70 | 754.4 | 41.7 | 5.4 | ..... | SW | ..... | ..... | 6 | ..... | ..... | ..... | ..... | 0.205 | 5.2 | ..... | |
| Helder | 29.69 | 754.1 | 29.69 | 754.1 | 42.3 | 5.7 | ..... | SW | ..... | ..... | 6 | ..... | ..... | ..... | ..... | 0.110 | 2.8 | ..... | |
| Hellevoetsluis | 29.87 | 758.8 | 29.87 | 758.8 | 43.9 | 6.6 | 86 | WSW | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.80 | 756.9 | 29.85 | 758.1 | 45.3 | 7.4 | 77 | WSW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | 0.047 | 1.2 | Very cloudy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the cooperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.62 | 752.3 | 29.67 | 753.7 | 27.3 | — 2.6 | 70 | N | 12.8 | 5.7 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.26 | 743.1 | 29.30 | 744.1 | 28.0 | — 2.2 | 67 | NNW | 22 | 10 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Snowing | |
| Christiania | 29.32 | 744.7 | 29.47 | 748.5 | 31.1 | — 0.5 | 43 | NNE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.07 | 738.3 | 29.11 | 739.4 | 27.3 | — 2.6 | 79 | SE | 11 | 5 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.04 | 763.0 | 30.23 | 767.9 | 59.4 | 15.2 | 91 | S | 3.1 | 1.4 | ..... | ..... | 7 | ..... | ..... | 0.217 | 5.5 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.22 | 742.3 | 30.25 | 768.4 | 61.5 | 16.4 | 46 | ENE | 8.1 | 3.6 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.15 | 765.8 | 30.24 | 768.0 | 60.8 | 16.0 | 79 | E | 1.8 | 0.8 | ..... | ..... | 10 | ..... | ..... | 0.374 | 9.5 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.91 | 759.6 | 30.27 | 768.8 | 61.3 | 16.3 | 56 | SE | 7.4 | 3.3 | ..... | ..... | 6 | ENE | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.23 | 767.7 | 30.30 | 769.5 | 63.3 | 17.4 | 70 | SSE | 13.7 | 6.1 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | | |
|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | A. M. de Sande, Comd't. |
| India | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | 2 | SW | D. clouds | | A. J. de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | J. T. d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da SilvaCosta, N. 13° 26', W. 19° 11' | 1 | ..... | Blue sky | | A. Ferreira, 2nd Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | D. clouds | | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | 1 | ..... | Overcast | | J. M. T. Guimaraes, Com'd't. |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.17 | 741.0 | 29.61 | 752.1 | 38.3 | 0.7 | 83 | WSW | 20 | 9 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs |
| Wilna | 28.93 | 734.9 | 29.36 | 745.8 | 29.3 | — 1.5 | 61 | WNW | 16 | 7 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 28.90 | 734.0 | 29.15 | 740.4 | 27.7 | — 2.4 | 73 | SW | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light snow | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.02 | 737.0 | 29.08 | 737.4 | 27.0 | — 2.8 | 76 | WNW | 13 | 6 | ..... | ..... | 2c | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 28.65 | 727.6 | 29.30 | 744.1 | 31.8 | — 0.1 | 54 | NW | 27 | 12 | ..... | ..... | 9k;ks;n | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.59 | 751.5 | 29.66 | 753.3 | 44.4 | 6.9 | 32 | WSW | 45 | 20 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.69 | 754.2 | 29.71 | 754.7 | 40.3 | 4.6 | 59 | W | 11 | 5 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 28.45 | 722.7 | 29.01 | 736.8 | 34.7 | 1.5 | 74 | S | 4 | 2 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | Light snow | Meteorological Obs. |
| Lugan | 28.99 | 736.3 | 29.20 | 741.6 | 36.5 | 2.5 | 85 | WSW | 22 | 10 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 28.86 | 733.0 | 28.88 | 733.5 | 25.5 | — 3.6 | 89 | NE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Capt. Sselliwerstow. |
| Tiflis | 28.43 | 722.0 | 29.83 | 757.6 | 56.3 | 13.5 | 25 | NW | 18 | 8 | ..... | ..... | 3cs | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.70 | 754.4 | 29.62 | 752.3 | 47.7 | 8.7 | 50 | SW | 11 | 5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Capt. Wisganow. |
| Krotkowo* | 28.73 | 729.7 | 29.21 | 741.9 | 35.2 | 1.8 | 60 | SW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 28.83 | 732.2 | 29.10 | 739.1 | 31.5 | — 0.3 | 80 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 28.14 | 714.7 | 29.11 | 739.4 | 29.8 | — 1.2 | 65 | SW | 7 | 3 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.09 | 754.2 | 29.93 | 760.2 | 54.5 | 12.5 | 18 | WSW | 4 | 2 | ..... | ..... | 8cs | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.34 | 719.8 | 30.05 | 763.2 | 53.6 | 12.0 | 40 | SW | 22 | 10 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.41 | 747.0 | 29.93 | 760.3 | 26.1 | — 3.3 | 60 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.51 | 757.2 | 30.12 | 765.1 | 16.5 | — 8.6 | 49 | ESE | 2 | 1 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 29.87 | 758.7 | 30.01 | 762.3 | 44.6 | 7.0 | 21 | Calm | 0 | 0 | ..... | ..... | 4cs | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend 455? m., or 1,492.7? ft., Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E. 48° 34'.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.11 | 764.9 | 30.22 | 767.6 | 61.2 | 16.2 | 48 | WSW | 4.8 | 2.17 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 30.27 | 768.8 | 30.33 | 770.3 | 56.7 | 13.7 | 64 | N | 0.5 | 0.23 | ..... | 3 | 5 | E | ..... | 0 | 0 | Almost cov'd | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.26 | 692.5 | ..... | ..... | 56.1 | 13.4 | 64 | NE | 8.0 | 3.86 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.99 | 711.0 | ..... | ..... | 63.0 | 17.2 | 38 | SW | 3.7 | 1.67 | ..... | 1 | 0 | NW | ..... | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 30.09 | 764.3 | 30.24 | 768.1 | 68.9 | 20.5 | 52 | NE | 2.0 | 0.86 | ..... | 2 | 3 | E | ..... | 0 | 0 | Light clouds | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.30 | 744.1 | 30.18 | 766.5 | 66.0 | 18.9 | 56 | NW | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.09 | 764.3 | 30.16 | 766.0 | 66.1 | 18.9 | 84 | E | 0 | 0 | ..... | 0 | 1k | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J |
| Manilla, Philippine Islands | 29 83 | 757.9 | 29.89 | 759.2 | 85.0 | 29.0 | 70 | E | 4.0 | 1.8 | ..... | 4n | 5n | E | E | 0 | 0 | Covbred | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.16 | 766 1 | 30.26 | 768.6 | 65.1 | 18.4 | 60 | ESE | 14.4 | 6.5 | ..... | 4 | 4 | E | E | 0 | 0 | ..... | Capt. C. Pajazon, R. N. Dir. |
| San Juan de Porto Rico, W. I. | 29.98 | 761.4 | 30.07 | 763.7 | 75.9 | 24.4 | 74 | NE | 8.8 | 3.70 | ..... | 8k | 4k | E | E | 0.010 | 0.25 | Cloudy | Leonardo de Tejeda, Ch'f. Eng'r. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.17 | 740.9 | 29.21 | 741.9 | 21.0 | — 5.6 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.09 | 738.9 | 29.14 | 740.2 | 28.7 | — 4.6 | 72 | N | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.08 | 738.7 | 29.13 | 740.0 | 31.3 | — 0.4 | 78 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.06 | 738.0 | 29.23 | 742.5 | 30.6 | — 0.8 | 77 | WNW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.27 | 743.4 | 29.33 | 744.9 | 29.8 | — 1.2 | 96 | NW | ..... | ..... | 7 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.13 | 740.0 | 29.21 | 741.9 | 32.7 | 0.4 | 78 | WNW | 11.4 | 5.1 | ..... | ..... | 10 | ..... | ..... | 0.000 | 0.01 | Snowing | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.77 | 730.8 | 30.20 | 767.0 | 54.7 | 12.6 | 83 | S | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Zurich | 28.53 | 724.6 | 30.24 | 768.0 | 44.2 | 6.8 | 72 | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.071 | 1.8 | Cloudy | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +6.0 mm.; Thermometer, +5.3 cent.; Relative Humidity, —29 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.98 | 761.4 | 55.4 | 13.0 | 69 | SW | 7 | 3.0 | ..... | ..... | 3 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.37 | 771.5 | 66.2 | 19.0 | ..... | NW | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 30.07 | 763.8 | 61.2 | 16.2 | ..... | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 30.00 | 762.0 | 30.11 | 764.9 | 59.9 | 15.5 | 84 | SW | ..... | ..... | 1 | ..... | 10n | ..... | SW | 0.63 | 0.8 | Showery | Prof. C. V. A. Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.59 | 751.6 | 29.66 | 753.4 | 22.2 | — 5.4 | 59 | NW | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Hon. J. Ferguson. |
| Brockville, Ontario | 29.74 | 755.4 | 30.00 | 762.5 | 27 | — 2.8 | ..... | W | 1 | 0.4 | ..... | ..... | 8s | ..... | NW | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N. B | 29.61 | 752.1 | 29.68 | 753.9 | 21 | — 6.1 | 70 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.07 | 1.8 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 29.64 | 752.8 | 29.68 | 753.9 | 25 | — 3.9 | 59 | W | 13 | 5.8 | ..... | 0 | 2s | ..... | ..... | 0.020 | 0.51 | Fair | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.68 | 753.9 | 30.08 | 764.0 | 27.0 | — 2.8 | 91 | NW | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | 29.27 | 743.4 | 30.32 | 770.1 | 43.3 | 6.3 | 100 | Calm | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 29.65 | 753.1 | 29.68 | 753.9 | 18 | — 7.8 | 62 | W | 45 | 20.1 | ..... | ..... | 10s | ..... | Calm | 0.31 | 7.9 | Cloudy | J. McWilliams. |
| Fredericton, N. B | 29.72 | 754.9 | 29.78 | 756.4 | 24.8 | — 4.0 | 52 | NW | 14 | 6.3 | ..... | 6cs | 0 | W | ..... | 0 | 0 | Cloudy | Prof. Harrison. |
| *Fort Garry Manitoba | 29.29 | 744.0 | 30.18 | 766.6 | 14 | —10.0 | 100 | E | 11 | 4.9 | ..... | ..... | 10n | ..... | ..... | 0.045 | 1.15 | Cloudy | James Stewart. |
| Granton, Ontario | 29.15 | 740.4 | 30.32 | 770.1 | 26 | — 3.3 | ..... | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | James Grant. |
| *Halifax, N. S | 29.55 | 750.6 | 29.69 | 754.1 | 34 | 1.1 | 91 | NW | 12 | 5.4 | ..... | ..... | 8ks | ..... | NW | 0.260 | 6.6 | Fair | F. Allison, M. A. |
| Hamilton, Ontario | 29.62 | 760.0 | 30.31 | 769.9 | 29.7 | — 1.3 | 71 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.72 | 754.9 | 30.07 | 763.8 | 26 | — 3.3 | 86 | SW | 13 | 5.8 | ..... | 8ck | 2s | SW | Calm | 0 | 0 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.55 | 750.6 | 29.59 | 751.6 | 32.0 | 0.0 | 80 | SW | 6 | 2.7 | ..... | 4k | 0 | SW | ..... | 0.37 | 9.4 | Fair | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 29.80 | 756.9 | 30.01 | 762.2 | 25 | — 3.9 | 62 | W | 24 | 10.7 | ..... | 2k | 2s | ..... | ..... | 0 | 0 | Clear | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.51 | 749.5 | 30.25 | 768.3 | 20 | — 6.7 | 92 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | 29.42 | 747.2 | 30.22 | 767.6 | 23.3 | — 4.8 | 64 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.58 | 751.3 | 30.32 | 770.1 | 28 | — 2.2 | 68 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. Morgan. |
| Port Hastings, N. S | 29.58 | 751.3 | 29.64 | 752.8 | 29.0 | — 1.2 | ..... | NW | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.64 | 752.8 | 30.32 | 770.1 | 25 | — 3.9 | 94 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | M. Payne. |
| *Quebec, Quebec | 29.52 | 749.8 | 29.87 | 758.7 | 18 | — 7.8 | 68 | NW | ..... | ..... | 6 | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.68 | 753.9 | 30.17 | 766.3 | 24 | — 4.4 | 54 | NW | 6 | 2.7 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.84 | 757.9 | 29.89 | 759.2 | 25 | — 3.9 | 76 | NW | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear | Dr. Gove. |
| St. John, N. B | 29.60 | 751.8 | 29.78 | 756.4 | 26 | — 3.3 | 57 | W | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.52 | 749.8 | 30.27 | 768.8 | 30 | — 1.1 | 81 | NW | 26 | 11.6 | ..... | ..... | 8ks | ..... | N | Inap. | Inap. | Cloudy | K. Stewart. |
| Stayner, Ontario | 29.42 | 747.2 | 30.25 | 768.3 | 27 | 2.8 | 77 | NW | 14 | 6.3 | ..... | 8k | 0 | NW | ..... | 0 | 0 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.93 | 734.8 | 30.30 | 769.6 | 28.0 | — 5.0 | 92 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.61 | 749.5 | 29.65 | 750.6 | 39 | 3.9 | 92 | NW | 4 | 1.8 | ..... | 0 | 8ks | ..... | NW | 0.15 | 3.8 | Fair | T. C. Hill. |
| *Toronto, Ontario | 29.58 | 758.9 | 30.29 | 769.4 | 28 | — 2.2 | 86 | W | 5 | 2.2 | ..... | 0 | 2s | ..... | NW | 0 | 0 | Clear | Magnetic Observatory |
| Windsor, N. S | 29.63 | 752.6 | 29.73 | 755.1 | 30.0 | — 1.1 | 68 | NW | 16 | 7.2 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Overcast | Prof. John E. Cranz |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 32.5 | 0.3 | 94 | S | ..... | ..... | ..... | Sm'e | Sm'e | ..... | ..... | 0 | 0 | Overcast | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters, Stratford, 1,182 ft., or 360.3 meters.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrumental error and temperature. Inches. | BAROMETER. Corrected for instrumental error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.87 | 758.7 | 30.11 | 764.8 | 32 | 0.0 | 69 | NW | 14 | 6.3 | ..... | 8k | 0 | NW | ..... | 0 | 0 | Fair | |
| Alpena, Michigan | 29.65 | 753.1 | 30.35 | 770.9 | 22 | — 5.6 | 72 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Atlanta, Georgia | 29.03 | 737.3 | 30.20 | 767.1 | 47 | 8.3 | 62 | NW | 7 | 3.1 | ..... | 0 | Sm'e | ..... | Calm | 0.09 | 2.3 | Clear | |
| Atlantic City, New Jersey | 30.20 | 767.1 | 30.22 | 767.6 | 36 | 2.2 | 61 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Augusta, Georgia | 30.06 | 763.5 | 30.24 | 768.1 | 58 | 14.4 | 42 | NE | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 30.25 | 768.3 | 30.30 | 769.6 | 39 | 3.9 | 64 | NW | 4 | 1.8 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Smoky | |
| Barnegat, New Jersey | 30.16 | 766.1 | 30.18 | 766.6 | 37 | 2.8 | 53 | NW | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 29.19 | 716.0 | 30.04 | 763.0 | 28 | — 2.2 | 88 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.07 | 1.8 | Clear | |
| Boerne, Texas | 28.69 | 728.7 | 30.00 | 762.0 | 62 | 16.7 | 100 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | S | Inap. | Inap. | Light rain | |
| Boise City, Idaho | 27.62 | 701.5 | 30.58 | 776.7 | 35 | 1.7 | 53 | SE | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0.03 | 0.8 | Fair | |
| Boston, Massachusetts | 29.85 | 758.2 | 30.01 | 762.2 | 34 | 1.1 | 75 | W | 9 | 4.0 | ..... | 3c;k | 0 | SE;NW | ..... | Inap. | Inap. | Fair | |
| Brackettville, Texas | 28.98 | 736 1 | 30.00 | 762.0 | 64 | 17.8 | 78 | N | 7 | 3.1 | ..... | ..... | 10s | ..... | NE | 2.23 | 56.6 | Cloudy | |
| Breckenridge, Minnesota | 28.88 | 733.5 | 29.89 | 759.2 | 38 | 0.6 | 79 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Brownsville, Texas | 30.04 | 763.0 | 30.09 | 764.3 | 69 | 20.6 | 95 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Buffalo, New York | 29.54 | 750.3 | 30.28 | 769.1 | 27.5 | — 2.6 | 82 | SW | 10 | 4.5 | ..... | 4k | 0 | NW | ..... | 0 | 0 | Fair | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 55 | 12.8 | 22 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.76 | 755.9 | 30.06 | 763.5 | 28.5 | — 1.9 | 61 | NW | 16 | 7.2 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Cairo, Illinois | 30.00 | 762.0 | 30.41 | 772.4 | 45 | 7.2 | 68 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.29 | 642.4 | 30.09 | 764.3 | 55 | 12.8 | 25 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 38 | 3.3 | 38 | N | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.55 | 699.8 | 30.12 | 765.0 | 30 | — 1.1 | 79 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.24 | 768.1 | 30.24 | 768.1 | 44 | 6.7 | 60 | NE | 34 | 15.2 | ..... | 8cs | 0 | SW | ..... | 0.47 | 11.9 | Fair | |
| Cape Henry, Virginia | 30.24 | 768.1 | 30.26 | 768.6 | 43 | 6.1 | 67 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Cape Lookout, N. Carolina | 30.22 | 767.6 | 30.24 | 768.1 | 49 | 9.4 | 64 | NE | 24 | 10.7 | ..... | 2ck | 0 | W | ..... | 0.07 | 1.8 | Fair | |
| Cape May, New Jersey | 30.20 | 767.1 | 30.23 | 767.8 | 38 | 3.3 | 63 | NW | 22 | 9.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Castroville, Texas | 29.37 | 746.0 | 30.06 | 763.5 | 68 | 20.0 | 84 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | S | 0.08 | 2.0 | Cloudy | |
| Charleston, South Carolina | 30.14 | 765.5 | 30.20 | 767.1 | 57 | 13.9 | 81 | NE | 12 | 5.4 | ..... | ..... | 10ks | ..... | NE | 0.02 | 0.5 | Cloudy | |
| Cheyenne, Wyoming | 24.24 | 615.7 | 30.18 | 766.6 | 30 | — 1.1 | 78 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.56 | 750.8 | 30.28 | 769.1 | 40 | 4.4 | 73 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Cincinnati, Ohio | 29.73 | 755.1 | 30.41 | 772.4 | 39 | 3.9 | 82 | SE | 2 | 0.9 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Cleveland, Ohio | 29.59 | 751.6 | 30.35 | 770.9 | 32 | 0.0 | 69 | S | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Coleman City, Texas | 28.35 | 720 1 | 30.03 | 762.8 | 54 | 12.2 | 80 | Calm | 0 | 0 | ..... | 5c | 5ks | W | SW | 0 | 0 | Cloudy | |
| Columbus, Ohio | 29.50 | 749.3 | 30.38 | 771.6 | 37 | 2.8 | 63 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Concho, Texas | 28 19 | 716.0 | 29.86 | 758.4 | 57 | 13.9 | 81 | NW | 4 | 1.8 | ..... | 10k | 0 | NW | ..... | Inap. | Inap. | Cloudy | |
| Corsicana, Texas | 29.69 | 754.1 | 30.16 | 766.1 | 60 | 15.6 | 88 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.80 | 20.3 | Cloudy | |
| Davenport, Iowa | 29.62 | 752.3 | 30.29 | 769.4 | 36 | 2.2 | 71 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.55 | 649.0 | ..... | ..... | 35 | 1.7 | 70 | S | 5 | 2.2 | ..... | 0 | 5s | ..... | Calm | 0.05 | 1.3 | Fair | |
| Decatur, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Denison, Texas | 29.40 | 746.7 | 30.20 | 767.1 | 57 | 13.9 | 75 | E | 6 | 2.7 | ..... | 0 | 2ks | ..... | Calm | 0 | 0 | Fair | |
| Denver, Colorado | 25.01 | 635.2 | 30.23 | 767.8 | 40 | 4.4 | 48 | E | 8 | 3.6 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Des Moines, Iowa | 29.24 | 742. 7 | 30.15 | 765.8 | 37 | 2.8 | 71 | S | 3 | 1.3 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Detroit, Michigan | 29.60 | 751.8 | 30.31 | 769.9 | 32 | 0.0 | 79 | W | 3 | 1.3 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Dodge City, Kansas | 27.57 | 700.3 | 29.93 | 760.2 | 39 | 3.9 | 73 | W | 8 | 3.6 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| Dubuque, Iowa | 29.51 | 749.5 | 30.25 | 768.3 | 31 | — 0.6 | 79 | SW | 4 | 1.8 | ..... | ..... | 10ks;fg | ..... | 8W;Calm | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 29.41 | 747.0 | 30.12 | 765.0 | 28 | — 2.2 | 88 | NE | 18 | 8.0 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Eagle Pass, Texas | 29.36 | 745.7 | 30.10 | 764.5 | 59 | 15.0 | 100 | E | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 1.04 | 26.4 | Heavy rain | |
| Eastport, Maine | 29.74 | 755.4 | 29.81 | 757.2 | 27 | — 2.8 | 64 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 68 | 20.0 | 95 | Calm | ..... | ..... | 0 | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.35 | 669.3 | ..... | ..... | 42 | 5.6 | 65 | SE | 2 | 0.9 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Erie, Pennsylvania | 29.57 | 751.1 | 30.32 | 770.1 | 34 | 1.1 | 79 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Escanaba, Michigan | 29.64 | 752.8 | 30.34 | 770.6 | 27 | — 2.8 | 76 | N | 1 | 0.4 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Florence, Arizona | 28.62 | 726.9 | 30.22 | 767.6 | 41 | 5.0 | 33 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 28.11 | 714.0 | ..... | ..... | 26 | — 3.3 | 76 | NW | 21 | 9.4 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Fort Craig, New Mexico | 25.66 | 651.8 | 29.72 | 754.9 | 35 | 1.7 | 52 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.31 | 642.9 | 30.27 | 768.8 | 47 | 8.3 | 77 | W | 6 | 2.7 | ..... | 0 | 2ks | ..... | SW | 0.04 | 1.0 | Fair | |
| Fort Gibson, Indian Ter | 29.67 | 753.6 | 30.21 | 767.3 | 53 | 11.7 | 42 | E | 8 | 3.6 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Fort Griffin, Texas | 28.85 | 732.8 | 30.12 | 765.0 | 55 | 12.8 | 81 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.63 | 701.8 | ..... | ..... | 35 | 1.7 | 80 | W | 14 | 6.3 | ..... | 2cs | 0 | Calm | ..... | 0.05 | 1.3 | Clear | |
| Fort McKavett, Texas | 27.87 | 707.9 | 29.78 | 756.4 | 59 | 15.0 | 76 | E | 4 | 1.8 | ..... | 0 | 5s | ..... | E | 0.06 | 1.5 | Fair | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.96 | 735.6 | 30.08 | 764.0 | 54 | 12.2 | 93 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Fort Stevenson, Dakota | 28.21 | 716.5 | ..... | ..... | 16 | — 8.9 | 83 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.06 | 1.5 | Cloudy | |
| Fredericksburg, Texas | 28.37 | 720.6 | 29.91 | 759.7 | 65 | 18.3 | 78 | S | 10 | 4.5 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 30.12 | 765.0 | 30.17 | 766.3 | 67 | 19.4 | 95 | E | 8 | 3.6 | ..... | ..... | 10s | ..... | E | 0.06 | 1.5 | Cloudy | |
| Graham, Texas | 29.07 | 738.4 | 30.13 | 765.3 | 57 | 13.9 | 87 | Calm | 0 | 0 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Grand Haven, Michigan | 29.64 | 752.8 | 30.32 | 770.1 | 33 | 0.6 | 79 | NW | 1 | 0.4 | ..... | 2cs | 5s | Calm | Calm | 0 | 0 | Fair | |
| Indianapolis, Indiana | 29.54 | 750.3 | 30.30 | 771.1 | 37 | 2 8 | 81 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Indianola, Texas | 30.12 | 765.0 | 30.14 | 765.5 | 68 | 20.0 | 95 | SE | 4 | 1.8 | ..... | ..... | 10n | ..... | SE | 0.09 | 2.3 | Light rain | |
| Jacksboro, Texas | 28.95 | 735.3 | 30.08 | 764.0 | 66 | 18.3 | 73 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.15 | 765.8 | 30.17 | 766.3 | 63 | 17.2 | 78 | S | 1 | 0.4 | ..... | 2ck | Haze | W | Calm | 0 | 0 | Fair | |
| Keokuk, Iowa | 29.62 | 752.3 | 30.26 | 768.6 | 30 | 3.9 | 64 | S | 5 | 2.2 | ..... | 1c | 0 | W | ..... | 0 | 0 | Clear | |
| Key West, Florida | 30.14 | 765.5 | 30.17 | 766.3 | 71 | 21.7 | 85 | NE | 9 | 4.0 | ..... | 0 | 5ks | ..... | E | 0 | 0 | Fair | |
| Kittyhawk North Carolina | 30.22 | 767.6 | 30.24 | 768.1 | 42 | 5.6 | 83 | NE | 29 | 13.0 | ..... | 0 | 0 | ..... | ..... | 0.22 | 5.6 | Clear | |
| Knoxville, Tennessee | 29.31 | 744.5 | 30.36 | 771.1 | 40 | 4.4 | 65 | NE | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| La Crosse, Wisconsin | 29.40 | 746.7 | 30.16 | 766.1 | 35 | 1.7 | 70 | S | 8 | 3.6 | ..... | 10ck | 0 | W | ..... | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 26.20 | 665.5 | 30.35 | 770.9 | 43 | 6.1 | 67 | NE | 2 | 0.9 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Laredo, Texas | 29.64 | 752.8 | 29.98 | 761.5 | 66 | 18.9 | 89 | E | 7 | 3.1 | ..... | 5ck | 0 | Calm | ..... | 0.56 | 14.2 | Fair | |
| Leavenworth, Kansas | 29.34 | 745.2 | 30.20 | 767.1 | 41 | 5.0 | 57 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.78 | 756.4 | 30.13 | 765.3 | 43.0 | 6.1 | 83 | NE | 3 | 1.3 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.79 | 756.7 | 30.38 | 770.6 | 40 | 4.4 | 56 | N | 3 | 1.3 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.59 | 751.6 | 30.29 | 769.4 | 47 | 8.3 | 61 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Madison, Wisconsin | 29.23 | 742.4 | 30.26 | 768.6 | 36 | 2.2 | 71 | S | 6 | 2.7 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Marquette, Michigan | 29.56 | 750.8 | 30.30 | 769.6 | 29 | — 1.7 | 67 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Mason, Texas | 28.51 | 724.1 | 30.27 | 768.8 | 61 | 16.1 | 83 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 30.00 | 762.0 | 30.33 | 770.4 | 46 | 7.8 | 48 | NE | 4 | 1.8 | ..... | 10cs | 0 | Calm | ..... | Inap. | Inap. | Cloudy | |
| Milwaukee, Wisconsin | 29.53 | 750.0 | 30.29 | 769 4 | 41 | 5.0 | 65 | W | 3 | 1.3 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Mobile, Alabama | 30.17 | 766.3 | 30.21 | 767.3 | 62 | 16.7 | 100 | S | 4 | 1.8 | ..... | ..... | 10s;fg | ..... | Calm | 0.04 | 1.0 | Cloudy | |
| Montgomery, Alabama | 29.99 | 761.7 | 30.23 | 767.8 | 57 | 13.9 | 87 | N | 3 | 1.3 | ..... | 1c | Fog | W | Calm | 0.08 | 2.0 | Clear | |
| Morgantown, West Virginia | 29.25 | 742.9 | 30.35 | 770.9 | 40 | 4.4 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mt. Washington, N. H. | 23.17 | 588.5 | 29.53 | 750.0 | 2 | —16.7 | 100 | NW | 78 | 34.9 | ..... | ..... | Fog | ..... | NW | 0.33 | 8.4 | Foggy | |
| Nashville, Tennessee | 29.80 | 756.9 | 30.36 | 771.1 | 48 | 6.1 | 59 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 30.00 | 762.0 | 30.12 | 765.0 | 39 | 3.9 | 64 | W | 4 | 1.8 | ..... | 2k | 0 | W | ..... | 0 | 0 | Clear | |
| New London, Connecticut | 30.03 | 762.8 | 30.08 | 764.0 | 36 | 2.2 | 53 | NW | 8 | 3.6 | ..... | 1c | 0 | W | ..... | 0 | 0 | Clear | |
| New Orleans, Louisiana | 30.12 | 765.0 | 30.18 | 766.6 | 64 | 17.8 | 94 | N | 1 | 0.4 | ..... | 5cs | 0 | W | ..... | 0.04 | 1.0 | Fair | |
| Newport, Rhode Island | 29.98 | 761.5 | 30.04 | 763.0 | 34.5 | 1.7 | 57 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| New York, New York | 29.99 | 761.7 | 30.18 | 766.6 | 36 | 2.2 | 53 | NW | 20 | 8.9 | ..... | 0 | 1s | ..... | Calm | Inap. | Inap. | Clear | |
| Norfolk, Virginia | 30.22 | 767.6 | 30.28 | 769.1 | 44 | 6.7 | 60 | N | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—19 | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.28 | 692.9 | 29.93 | 760.2 | 38 | 3.3 | 81 | NW | 8 | 3.6 | ..... | 2c | Haze | NW | Calm | 0 | 0 | Fair | |
| Olympia, Washington Ter. | 30.38 | 771.6 | 30.42 | 772.6 | 41.2 | 5.1 | 91 | S | 3 | 1.3 | ..... | ..... | 8s | ..... | SW | 0.68 | 17.3 | Cloudy | |
| Omaha, Nebraska | 28.96 | 735.6 | 30.08 | 764.0 | 42 | 5.6 | 42 | SW | 13 | 5.8 | ..... | 5c | Sm'e | W | Calm | 0 | 0 | Clear | |
| Oswego, New York | 29.88 | 758.9 | 30.22 | 767.6 | 32 | 0.0 | 79 | NW | 14 | 6.3 | ..... | 2k | 0 | NW | ..... | 0 | 0 | Fair | |
| Pembina, Dakota | 29.22 | 742.2 | 30.10 | 764.5 | 22 | — 5.6 | 100 | E | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.26 | 6.6 | Light snow | |
| Philadelphia, Pa | 30.18 | 766.6 | 30.24 | 768.1 | 37 | 2.8 | 53 | NW | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Phœnix, Arizona | 28.04 | 735.1 | 30.81 | 782.6 | 43 | 6.1 | 51 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.90 | 454.6 | 30.11 | 764.8 | 12 | —11.1 | 23 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Ploche, Nevada | 24.27 | 616.4 | 30.04 | 763.0 | 44 | 6.7 | 45 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.50 | 749.3 | 30.35 | 770.9 | 33 | 0.6 | 79 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Port Huron, Michigan | 29.61 | 752.1 | 30.32 | 770.1 | 30 | — 1.1 | 78 | NW | 4 | 1.8 | ..... | 0 | 2ks | ..... | Calm | 0 | 0 | Clear | |
| Portland, Maine | 29.87 | 758.7 | 29.92 | 760.0 | 35 | 1.7 | 61 | NW | 8 | 3.6 | ..... | 2k | 5s | Calm | Calm | 0.03 | 0.8 | Cloudy | |
| Portland, Oregon | 30.42 | 772.6 | 30.53 | 775.4 | 38.0 | 3.3 | 96 | S | 1 | 0.4 | ..... | 0 | Fog | ..... | SE | 0.10 | 2.5 | Clear | |
| Prescott, Arizona | 24.90 | 632.4 | 30.26 | 768.6 | 29 | — 1.7 | 56 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.16 | 740.7 | 29.96 | 761.0 | 69 | 20.6 | 90 | SE | 10 | 4.5 | ..... | 8k | 2s | S | SE | 0 | 0 | Cloudy | |
| Punta Rassa, Florida | 30.21 | 767.3 | 30.22 | 767.6 | 64 | 17.8 | 78 | NE | 6 | 2.7 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Red Bluff, California | 29.97 | 761.2 | 30.34 | 770.6 | 49 | 9.4 | 64 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Rio Grande City, Texas | 29.90 | 759.4 | 30.12 | 765.0 | 67 | 19.4 | 89 | E | 4 | 1.8 | ..... | 0 | 8s | ..... | SE | 0 | 0 | Fair | |
| Rochester, New York | 29.59 | 751.6 | 30.24 | 768.1 | 31 | — 0.6 | 79 | NW | 12 | 5.4 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| Roseburg, Oregon | 29.94 | 760.5 | 30.54 | 775.7 | 35.6 | 1.9 | 98 | Calm | 0 | 0 | ..... | Haze | 5s | ..... | Calm | 0 | 0 | Fair | |
| Sacramento, California | 30.19 | 766.8 | 30.27 | 768.8 | 53 | 11.7 | 80 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.74 | 755.4 | 30.34 | 770.6 | 47 | 8.3 | 48 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Marks, Florida | 30.17 | 766.3 | 30.18 | 766.6 | 58 | 14.4 | 100 | NW | 4 | 1.8 | ..... | ..... | 10s;fg | ..... | Calm | 0 | 0 | Cloudy | |
| St. Paul, Minnesota | 29.10 | 739.1 | 29.94 | 760.5 | 37 | 2.8 | 67 | SE | 14 | 6.3 | ..... | ..... | 10s | ..... | SE | Inap. | Inap. | Cloudy | |
| Salt Lake City, Utah | 25.95 | 659.1 | 30.28 | 769.1 | 41 | 5.0 | 49 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.47 | 748.5 | 30.04 | 763.0 | 67 | 19.4 | 89 | Calm | 0 | 0 | ..... | 0 | 8ks | ..... | Calm | 0 | 0 | Cloudy | |
| San Diego, California | 30.06 | 763.5 | 30.13 | 765.3 | 46 | 7.8 | 92 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.65 | 753.1 | 30.36 | 771.1 | 34 | 1.1 | 70 | SW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandy Hook, New Jersey | 30.12 | 765.0 | 30.16 | 766.1 | 35 | 3.3 | 54 | NW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Francisco, California | 30.22 | 767.6 | 30.28 | 769.1 | 54.6 | 12.7 | 81 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 23.41 | 594.6 | 29.95 | 760.7 | 35 | 1.7 | 53 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.09 | 764.3 | 30.18 | 766.6 | 61 | 16.1 | 82 | NE | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light rain | |
| Shreveport, Louisiana | 29.99 | 761.7 | 30.22 | 767.6 | 67 | 13.9 | 81 | E | 5 | 2.2 | ..... | 4k | 0 | Calm | ..... | Inap. | Inap. | Fair | |
| Silver City, New Mexico | 24.41 | 620.0 | 30.73 | 780.5 | 38 | 3.3 | 46 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.24 | 768.1 | 30.28 | 769.1 | 62 | 11.1 | 73 | NE | 12 | 5.4 | ..... | 5cs | 0 | NW | ..... | 0.02 | 0.5 | Clearing | |
| Springfield, Massachusetts | 29.93 | 760.2 | 30.07 | 763.8 | 35 | 1.7 | 53 | NW | 9 | 4.0 | ..... | 0 | 8ks | ..... | NW | Inap. | Inap. | Cloudy | |
| Stockton, Texas | 27.11 | 688.6 | 30.11 | 764.8 | 54 | 12.2 | 87 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.15 | 3.8 | Light rain | |
| Thatcher's Island, Mass. | 29.98 | 761.5 | 30.05 | 763.3 | 38 | 3.3 | 54 | W | 8 | 3.6 | ..... | 5k | 2s | W | W | Inap. | Inap. | Fair | |
| Toledo, Ohio, | 29.63 | 752.6 | 30.35 | 770.9 | 36 | 2.2 | 71 | W | 8 | 3.6 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Tucson, Arizona | 27.65 | 702.3 | 30.20 | 767.1 | 45 | 7.2 | 46 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 30.12 | 765.0 | 30.64 | 778.2 | 45.0 | 7.2 | 68 | S | 14 | 6.3 | ..... | 0 | 2s | ..... | E | 0 | 0 | Fair | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 19 | — 7.2 | 84 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Uvalde, Texas | 29.20 | 741.7 | 30.01 | 762.2 | 61 | 16.1 | 88 | S | 13 | 5.8 | ..... | ..... | 10n | ..... | N | 0.46 | 11.7 | Light rain | |
| Vicksburg, Mississippi | 30.01 | 762.2 | 30.28 | 769.1 | 64 | 12.2 | 67 | NE | 4 | 1.8 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Virginia City, Montana | 24.50 | 622.3 | 29.98 | 761.5 | 31 | — 0.6 | 58 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Visalia, California | 29.89 | 759.2 | 30.28 | 769.1 | 47.5 | 8.6 | 91 | NW | 1 | 0.4 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Washington, D. C. | 30.19 | 766.8 | 30.31 | 769.9 | 30 | 3.9 | 55 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 44 | 6.7 | 45 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.16 | 766.1 | 30.24 | 768.1 | 53 | 11.7 | 80 | NE | 2 | 0.9 | ..... | 8k | 0 | NE | ..... | 0.10 | 2.5 | Fair | |
| Winnemucca, Nevada | 26.01 | 660.6 | 30.37 | 771.4 | 31 | — 0.6 | 58 | NE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass. | 30.00 | 762.0 | 30.04 | 763.0 | 33 | 0.6 | 61 | NW | 20 | 8.9 | ..... | Haze | 2s | ..... | Calm | 0 | 0 | Clear | |
| Yankton, Dakota | 28.73 | 729.7 | 30.04 | 763.0 | 43 | 6.1 | 59 | W | 24 | 10.7 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Yuma, Arizona | 29.91 | 759.7 | 30.08 | 764.0 | 51 | 10.6 | 65 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark. | 28.67 | 728.2 | 30.12 | 765.0 | 45 | 7.2 | 24 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I. | 30.11 | 764.8 | 30.16 | 766.1 | 70 | 21.1 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A. | 25.20 | 641.6 | ..... | ..... | 64.5 | 18.1 | 84 | Calm | 0 | 0 | ..... | 0 | 4ks | ..... | ..... | 0.73 | 18.5 | ..... | Thomas Herran. |
| Navassa, W. I. | 29.97 | 761.2 | 30.05 | 763.3 | 77.2 | 25.1 | ..... | NE | 8 | 3.6 | ..... | ..... | ..... | ..... | ..... | Inap. | Inap. | Partly cl'dy. | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.00 | 762.0 | 30.00 | 762.0 | 80 | 26.7 | 87 | E | ..... | ..... | 2 | 5k | 6ks | E | ..... | 1.040 | 26.42 | ½ clouded | C. J. Hering. |
| Santiago de Cuba, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.8 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,208 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,900 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,861 (?) ft., or 2,088.1 (?) m.; Silver City, 6,396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.556 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.16 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.69 in.; Winnemucca, 4.36 in.; Virginia City, 5.45 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.20 | 767.1 | 63 | 11.7 | ..... | ..... | ..... | Calm | 0 | 0 | .... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 30.30 | 769.6 | 62 | 16.7 | 62 | 16.7 | 94 | NE | 2 | 0.9 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Threatening | |
| Navy Yard, Portsmouth, N.H | 29.98 | 761.5 | 63 | 17.2 | 34 | 1.1 | 71 | SW | 3 | 1.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Naval Hospital, Yokohama, Japan.....* | 29.96‡ | 761.0‡ | ..... | ..... | 49.8 | 9.9 | 75 | Calm | ..... | ..... | 0 | ..... | 4k;s | ..... | SW | Slight | Slight | ..... | ..... | Clearing..... | |
| Adams, Panama ..... | 30 00 | 762.0 | 75 | 23.9 | 75 | 23.9 | 95 | NW | ..... | ..... | 2 | ..... | 5 | ..... | N;W | ..... | ..... | ..... | ..... | Fair ..... | |
| Alaska, ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Alliance, Genoa, Italy..... | 30.07‡ | 763.8‡ | ..... | ..... | 59 | 15.0 | 76 | SW | ..... | ..... | 0-1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Threatening | |
| Ashuelot, Hong-Kong, China. ..... | 29.80‡ | 756.9‡ | ..... | ..... | 68 | 20.0 | 95 | E | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Misty..... | |
| Canonicus, New Orleans, La..... | 30.18 | 766.6 | 46 | 7.8 | 64 | 17.8 | 94 | SE | ..... | ..... | 2 | ..... | 10 | ..... | SE | ..... | ..... | ..... | ..... | Foggy ..... | |
| Colorado, New York, N. Y..... | 30.15 | 765.8 | 39 | 3.9 | 38 | 3.3 | 100 | NW | 14 | 6.3 | ..... | ..... | 2 | ..... | NW | 0 | 0 | ..... | ..... | Hazy..... | |
| Constitution Lisbon, Portugal..... | 30.25‡ | 768.3‡ | ..... | ..... | 61 | 16.1 | 94 | SSW | ..... | ..... | 1 | ..... | 4 | ..... | Calm | ..... | ..... | ..... | ..... | Pleasant..... | |
| Despatch, N. 37° 27′, E. 24° 09′ 30″... | 30.04‡ | 763.0‡ | ..... | ..... | 58 | 14.4 | 76 | SW | ..... | ..... | 1 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | ..... | Clear..... | |
| Franklin, Norfolk, Va..... | 30.37 | 771.4 | 67 | 19.4 | 47 | 8.3 | 70 | NNW | 10.8 | 4.8 | ..... | ..... | 0 | ..... | ..... | 0.1 | 3. | ..... | ..... | Clear..... | |
| Gettysburg, Genoa, Italy ..... | 30.02‡ | 762.5‡ | ..... | ..... | 65 | 18.3 | 84 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Overcast .... | |
| Hartford, Montevideo, Uruguay... | 30.07 | 763.8 | 67 | 19.4 | 67 | 19.4 | 74 | NW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Lackawana, N. 6° 06′, W. 79° 37′... *... | 29.76‡ | 755.9‡ | ..... | ..... | 78 | 25.6 | 91 | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Cloudy ..... | |
| Michigan, Erie, Pa.....† | 30.12 | 765.0 | ..... | ..... | 31 | — 0.6 | 89 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monocacy, Shanghai, China.....*.. | 29.82‡ | 757.4‡ | ..... | ..... | 50 | 10.0 | 100 | ESE | ..... | ..... | 3 | ..... | 10 | ..... | ESE | ..... | ..... | ..... | ..... | Thunder-storm.. | |
| Monongehela, Yokohama, Japan ....*.. | 29.93‡ | 760.2‡ | ..... | ..... | 53 | 11.7 | 67 | NW | ..... | ..... | 0-1 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C..... | 30.32 | 770.1 | 62 | 16.7 | 62 | 16.7 | 94 | NE | 14 | 6.3 | ..... | ..... | 5? | ..... | NE | 0.20 | 5.1 | ..... | ..... | Raining ..... | |
| Onward, Callao, Peru.....† | 30.06 | 763.5 | ..... | ..... | 66 | 18.9 | 94 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Foggy ..... | |
| Palos, Tientsin, China..... | 29.92 | 760.0 | 43 | 6.1 | 45 | 7.2 | 53 | N | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Light mist... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 41 | 5.0 | 91 | WNW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Fair ..... | |
| Pensacola, Valparaiso, Chili..... | 29.97‡ | 761.2‡ | ..... | ..... | 60 | 15.6 | 94 | S | 5 | 2.2 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Smooth | SW | Foggy..... | |
| Powhatan, Porto Cabello, Venice ... | 30.00‡ | 762.0‡ | ..... | ..... | 79 | 26.1 | 74 | W | ..... | ..... | 1 | ..... | 10 | ..... | W | 0 | 0 | Long | N | Cloudy ..... | |
| Quinnebaug, Port Mahon, Minorca Id | 30.26‡ | 768.6‡ | ..... | ..... | 58 | 14.4 | 76 | NE | ..... | ..... | 2 | ..... | 8 | .... | WNW | ..... | ..... | Smooth | ..... | Fair ..... | |
| Ranger. Nagasaki, Japan .....*... | 29.94‡ | 760.5‡ | ..... | ..... | 63 | 17.2 | 78 | Calm | ..... | ..... | 0 | ..... | 0 | .. ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Richmond, N. 33° 47′, E. 26° 32′..... | 30.13‡ | 765.3‡ | ..... | ..... | 61 | 16.1 | 51 | WSW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | NW | Clear..... | |
| Rio Bravo, Brownsville, Texas..... | 30.08 | 764.0 | 70 | 21.1 | 70 | 21.1 | 100 | SE | ..... | ..... | 2 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md... ..... | 30.26‡ | 768.6‡ | ..... | ..... | 44 | 6.7 | 53 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear. ..... | |
| Saratoga, Hampton Roads, Va..... | 30.37 | 771.4 | ..... | ..... | 49 | 9.4 | 63 | N | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Misty..... | |
| St. Louis, League Island, Pa ..... | 30.12 | 765.0 | 53 | 11.7 | 40 | 4.4 | 73 | NW | 12 | 5.4 | ..... | ..... | 0 | ..... | ..... | 0.01 | 0.3 | ..... | ..... | Clear..... | |
| Supply, N. 35° 49′, W. 72° 36′..... | 30.14‡ | 765.5‡ | ..... | ..... | 57 | 13.9 | 81 | N | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Mod'ate | N | Squally..... | |
| Trenton N. 42° 11′, E. 10° 48′..... | 30.08‡ | 764.0‡ | ..... | ..... | 58 | 14.4 | 76 | ENE | ..... | ..... | 1-2 | ..... | 2 | ..... | S;W | 0 | 0 | None | ..... | Fair ..... | |
| Tuscarora, Huatulco, Mexico..... | 29.94‡ | 760.5‡ | ..... | ..... | 77 | 25.0 | 77 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Long | S | Clear ..... | |
| Wabash, Boston, Mass..... | 30.02‡ | 762.5‡ | ..... | ..... | 32 | 0.0 | 69 | W | 7 | 3.1 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Wyoming, Constantinople, Turkey | 29.98‡ | 761.5‡ | ..... | ..... | 54 | 12.2 | 93 | SW | ..... | ..... | 1-2 | ..... | 2 | ..... | SW | ..... | ..... | Smooth | SW | Clear..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | |
| S. S. Colima, N. 28° 36', W. 110° 58'...† | | 30.04‡ | 763.0‡ | 61 | 16.1 | 100 | WNW | | | 4 | | 10 | | ESE | 0 | Mod'ate | NW | Foggy | Capt. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Granada, Capt. Austin, N. 7° 08', W. 80° 27'.....† | | 30.14‡ | 765.5‡ | 79 | 26.1 | ?? | W | | | 2 | | k | | N | 0 | | | Clear | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |
| **WHITE STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
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| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. | | | | | | | | | | | | | | | | | | | |
| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, Capt. L. Meyer, Hong-Kong, China.....* | | 29.67‡ | 753.6‡ | 66 | 18.9 | 94 | ENE | | | 5 | | n | | E | | Mod'ate | NNE | Misty | J. A. Thompson, 3d Off'r |
| S. S. Gaelic, N. 34° 35', E. 139° 00'.....† | | 29.72‡ | 754.9‡ | 52 | 11.1 | ?? | N | | | 4 | | k | | N | 0 | Smooth | | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |
| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 25° 52', W. 75° 57' | | 30.26‡ | 768.6‡ | 74.0 | 23.3 | 59 | E | | | 2 | | 2 | | W | | Mod'ate | NE | Fine | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Lo'wr 0—10. | Upper. From— | Lower. From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Liverpool | | 30.342‡ | 770.67‡ | 50 | 10.0 | | NW | | | 8 | | 8 | | NW | 0 | | | Cloudy | Captain Sargent. Wm. Shackford, Chief Officer. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
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| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
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| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MARINE SERIES. (Miscellaneous.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

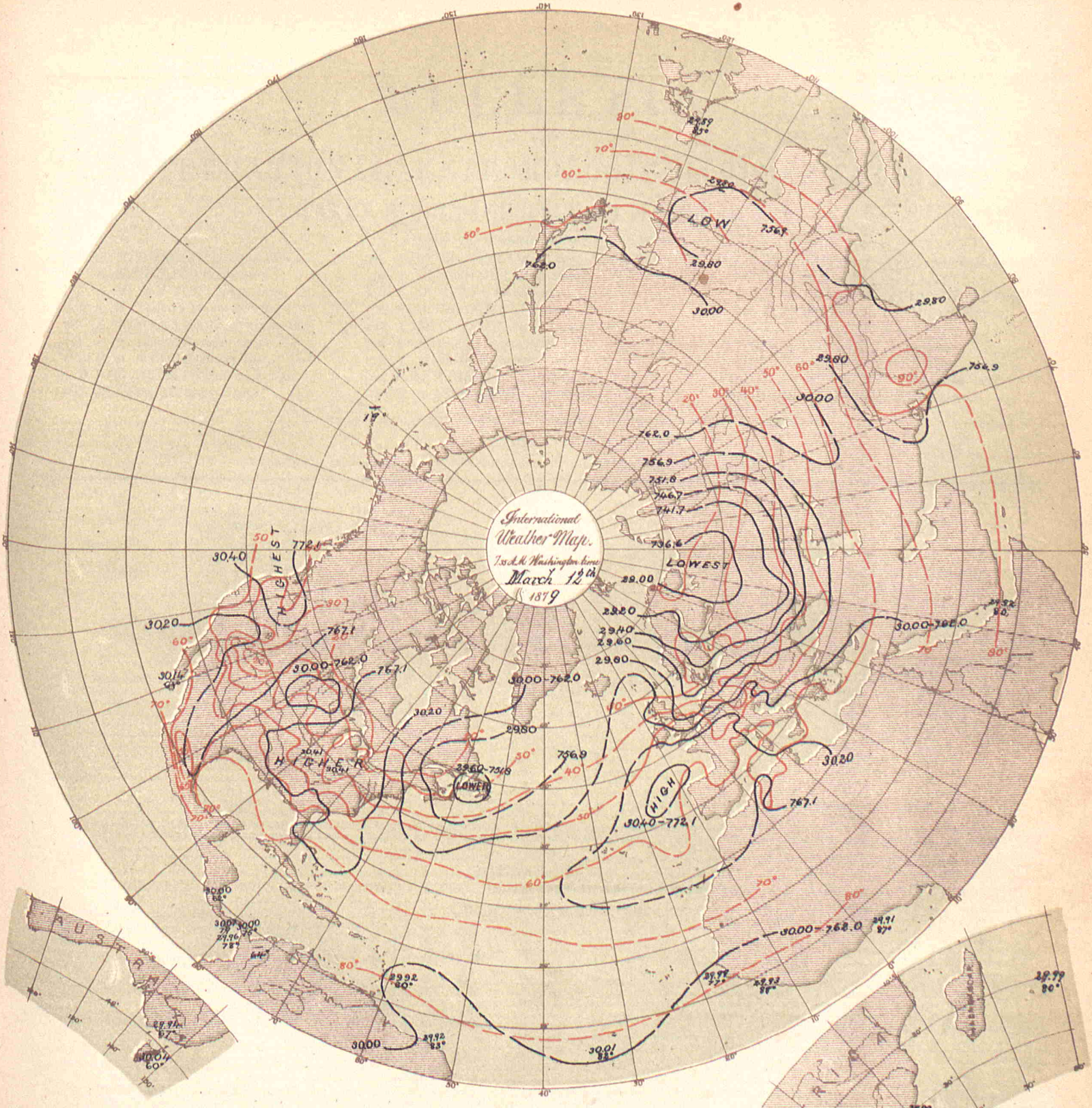
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 13, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 30.17 | 766.4 | 61.9 | 16 6 | 78 | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | |
| Nemours | ..... | ..... | 30.10 | 764.5 | 63.7 | 17.6 | 67 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Kesxuche. |
| Algiers | ..... | ..... | 30.07 | 763.7 | 59.4 | 15.2 | 78 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Tourillere. |
| La Calle | ..... | ..... | 30.08 | 764.0 | 60.8 | 16.0 | 71 | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Foufrede. |
| Tunis | ..... | ..... | 30.07 | 763.6 | 66.4 | 19.1 | 33 | NNW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Jacques. |
| Sfax | ..... | ..... | 30.13 | 765.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 30.10 | 764.5 | 65.3 | 18.5 | 20 | N | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Herbin. |
| Tebessa | ..... | ..... | 30.15 | 765.8 | 64.9 | 18.3 | 19 | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Watrin. |
| Geriville | ..... | ..... | 30.12 | 765.0 | 54.0 | 12.2 | 100 | S | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Brugniaux. |
| Laghouat | ..... | ..... | 30.13 | 765.4 | 65.8 | 18.8 | 25 | SSW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Bertrand. |
| Biskra | ..... | ..... | 30.11 | 764.8 | 71.1 | 21.7 | 26 | WNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.15 | 740.4 | 29.72 | 754.8 | 36.3 | 2.4 | 89 | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.559 | 14.2 | Snowing | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 28.80 | 731.5 | 29.60 | 751.7 | 28.0 | — 2.2 | 96 | WNW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.008 | 0.2 | ..... | Dr. Wierzbiski |
| Eperies | 28.63 | 727.3 | 29.54 | 750.2 | 33.8 | 1.0 | 65 | NW | ..... | ..... | 3 | ..... | 6cs | ..... | SE | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.43 | 722.2 | 29.70 | 754.3 | 42.6 | 5.9 | 85 | NW | ..... | ..... | 7 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28 08 | 713.1 | 29.52 | 749.8 | 39.2 | 4.0 | 76 | W | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. A. Gottschling. |
| Kremsmünster | 28.53 | 724.7 | 29.95 | 760.6 | 27.5 | — 2.5 | 98 | WNW | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner. |
| Lemberg | 28.36 | 720.2 | 29.37 | 745.9 | 32.0 | 0.0 | 89 | NW | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0.134 | 3.4 | ..... | Dr. T. Stanecki. |
| Pola | 29.54 | 750.2 | 29.65 | 753.0 | 57.7 | 14.3 | 61 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.04 | 737.5 | 29.61 | 749.5 | 38.1 | 3.4 | 59 | NW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.031 | 0.8 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 29.57 | 751.0 | 29.67 | 753.6 | 52.7 | 11.5 | 87 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | P. Busin. |
| Vienna | 29.08 | 738.7 | 29.80 | 757.0 | 31.3 | — 0.4 | 90 | WNW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Ob's'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Royal Observatory |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. E. de Cae. |
| Maeseyck | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Pierrot |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 1—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.20 | 767.1 | 30.30 | 769.6 | 29.4 | — 1.4 | ..... | NW | 24 | 10.7 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | D. clouds..... | W. Boswell. |
| Ardrossan | 30.28 | 769.1 | 30.30 | 769.6 | 42 | 5.6 | ..... | W | ..... | 4 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.40 | 772.1 | 45.0 | 7.2 | ..... | SW | 14 | 6.3 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.39 | 771 9 | 40.4 | 4.7 | ..... | WNW | 17 | 7.6 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 30.34 | 770.6 | 41.7 | 5.4 | ..... | WNW | 30 | 13.4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Thomas Mackereth. |
| Bradford, Yorkshire | 29.91 | 759.7 | 30.30 | 769.6 | 40.3 | 4.6 | ..... | W | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | D. clouds..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.91 | 759.7 | 29 94 | 760.5 | 82.5 | 28.1 | ..... | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Gloomy..... | Pvt. G. Surgener, A H. |
| Cambridge, Observatory | ..... | ..... | 30.36 | 771.1 | 45.9 | 7.7 | ..... | NW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | Blank | Blank | D. clouds..... | H. Todd. [O. |
| Cardington | ..... | ..... | 30.32 | 770.1 | 43.0 | 6.1 | ..... | N | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John McLaren. |
| Chatham, School M. E | 30.23 | 767.8 | 30.36 | 771.1 | 40.1 | 4.5 | ..... | N | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Corpl. Daly, R. E. |
| Dartmoor | 28.83 | 732.3 | 30.35 | 770.9 | 40.0 | 4.4 | ..... | NE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 30.30 | 769.6 | 30.35 | 770.9 | 47 | 8.3 | ..... | W | ..... | ..... | 5 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 30.32 | 770.1 | 30.35 | 770.9 | 39 | 3.9 | ..... | N | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | Clear..... | J. Costello. |
| Falmouth, Observatory | 30.20 | 767.1 | 30.43 | 772.9 | 42.0 | 5.6 | ..... | ESE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| Fort Napier, (Natal) | 27.68 | 703.1 | 30.00 | 762.0 | 78.5 | 25.8 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.69 | 754.1 | 29.92 | 760.0 | 88 | 31.1 | ..... | SW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | 30.32 | 770.1 | 45 | 7.2 | ..... | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.05 | 763.3 | 30.11 | 764.6 | 58.8 | 14.9 | ..... | E | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 30.09 | 764.3 | 30.29 | 769.4 | 32.0 | 0.0 | ..... | N | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Snowing..... | D. G. Maclean. |
| Great Yarmouth | 30.27 | 768.8 | 30.28 | 769.1 | 38 | 3.3 | ..... | NNW | ..... | 5 | ..... | ..... | 3 | ..... | ..... | Blank | Blank | Blue sky.. .. | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.20 | 767.1 | 30.38 | 771.6 | 42.9 | 6.1 | ..... | N | ..... | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky.. . | The Staff, for G. B. Airy. |
| Guernsey | 30.16 | 766.1 | 30.39 | 771.9 | 40 | 4.4 | ..... | NE | ..... | 3 | ..... | ..... | 0? | ..... | ..... | ..... | ..... | D. clouds?.. | Dr. S. E. Hoskins, F.R.S. |
| Helston | 30.36 | 771.1 | 30.48 | 774.2 | 49 | 9.4 | ..... | NE | ..... | 6 | ..... | ..... | 2c | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 30.34 | 770.6 | 30.40 | 772.1 | 42 | 5.6 | ..... | WSW | ..... | 3 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 30.11 | 764.8 | 30.41 | 772.4 | 41.9 | 5.5 | ..... | ENE | ..... | 3 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | J. Fisher. |
| Kew, Observatory | 30.34 | 770.6 | 30.38 | 771.6 | 40.5 | 4.7 | ..... | N | 15 | 6.7 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky .... | The Meteorological Of. |
| Leicester, Museum | 30.09 | 764.3 | 30.36 | 771.1 | 41.9 | 5.5 | ..... | NW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds..... | Wm. J. Harrison, F.G .S |
| Malta, (Mediterranean) | 29.96 | 761.0 | 30.04 | 763.0 | 60 | 15.6 | ..... | W | ..... | ..... | 1 | ..... | 4k | ..... | ..... | ..... | ..... | D. clouds..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 30.24 | 768.1 | 30.34 | 770.6 | 31 | — 0.6 | ..... | NW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | ¾ clouded.... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.12 | 765.0 | 73.0 | 22.8 | ..... | E | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 30.16 | 766.1 | 30.36 | 771.1 | 41.9 | 5.5 | ..... | WNW | ..... | ..... | 3 | ..... | 7k | ..... | NW | 0 | 0 | D. clouds..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.84 | 757.9 | 30.38 | 771.6 | 41.2 | 5.1 | ..... | WNW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.38 | 771.6 | 41 | 5.0 | ..... | NNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | H. E. Bellamy. |
| Plymouth | 30.34 | 770.6 | 30.42 | 772.6 | 42.6 | 5.9 | ..... | ENE | ..... | ..... | 5 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John Merrifield. |
| Roche's Point | 30.39 | 771.9 | 30.44 | 773.2 | 47 | 8.3 | ..... | SE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded.... | W. Kennedy. |
| Saint Ann's Head | 30.28 | 769.1 | 30.45 | 773.4 | 41 | 5.0 | ..... | ESE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 30.29 | 769.4 | 27.2 | — 2.7 | ..... | NNW | 30 | 13.4 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Snowing..... | Dr. Hoskins. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 29.65 | 753.1 | 55.8 | 13.2 | ..... | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.. . | W. H. Lyne. |
| Sheffield | 30.07 | 763.8 | 30.36 | 771.1 | 43.3 | 6.3 | ..... | WNW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0.08 | 2.0 | D. clouds..... | W. F. Cooper. |
| Silloth Rectory | 30.30 | 769.6 | 30.33 | 770.4 | 48.0 | 8.9 | 54 | SW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0.056 | 1.42 | D. clouds..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.95 | 760.7 | 30.35 | 770.9 | 40.0 | 4.4 | ..... | W | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | Misty..... | Rev. S. J. Perry. |
| Strathfield Turgiss | 30.16 | 766.1 | 30.38 | 771.6 | 45.4 | 7.4 | ..... | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | C.H.Griffith, F..M.S. |
| Thurso | 30.25 | 768.3 | 30.31 | 769.9 | 30 | — 1.1 | ..... | N | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | John Trotter. |
| Truro, Royal Institution | 30.36 | 771.1 | 30.41 | 772.4 | 46 | 7.8 | ..... | E | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | 30.38 | 771.8 | 30.41 | 772.4 | 48.1 | 8.9 | ..... | W | 20 | 8.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds..... | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.97 | 761.2 | 30.00 | 762.0 | 81 | 27.2 | 47 | SE | 23 | 10.3 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Fine..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.76 | 755.9 | 59.0 | 15.0 | 100 | S | ..... | ..... | 1 | ..... | 10kn | ..... | ..... | ..... | ..... | Raining..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 30.36 | 771.1 | 31.5 | — 0.3 | ..... | NE | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0.08 | 2.0 | Snowy..... | Andrew Gibb. |
| Mauritius, Observatory | 29.79 | 756.7 | 29.98 | 761.4 | 81.2 | 27.3 | 65 | ESE | 19.0 | 8.5 | ..... | 0 | 3 | ..... | SE | 0.05 | 1.3 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 29.62 | 752.3 | 29.71 | 754.6 | 62.9 | 17.2 | 72 | ESE | 8 | 1.3 | ..... | ..... | 8 | ..... | ..... | 0.09 | 2.3 | Lightning... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 30.34 | 770.6 | 31 | — 0.6 | ..... | NE | ..... | ..... | 4 | 5 | 5 | NE | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.14 | 765.5 | 23 | — 5.0 | ..... | N | ..... | ..... | 8 | 6 | 4 | N | ..... | ..... | ..... | Snowing..... | Robert Burnet. |

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day,) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day,) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

| British Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 1—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 35° 54', E. 14° 30' | ..... | ..... | 30.01‡ | 762.2‡ | 60 | 15.6 | ..... | NW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle Isle, N. 26° 50', W. 79° 41' | ..... | ..... | 30.15‡ | 765.8‡ | 73 | 22.8 | ..... | E | ..... | ..... | 4 | ..... | 10c | ..... | SSW | 1 | ..... | Overcast..... | Capt. A. J. Brown. |
| Ship British Commodore, N. 39° 15', W. 54° 40' | ..... | ..... | 30.10 | 764.5 | 53 | 11.7 | ..... | NW | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 5 | W | Squally..... | Capt. J. W. Thorne. |
| —— City of Agra, N. 7° 40', W. 35° 52' | ..... | ..... | 30.01‡ | 762.2‡ | 80.8 | 27.1 | ..... | N | ..... | ..... | 5 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | Capt. Thos. Young. |
| Barque Commewyne, N. 25° 30' W. 60° 00' | ..... | ..... | 30.21‡ | 767.3‡ | 74 | 23.3 | ..... | ENE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. A. Buchan. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole, N. 48° 25', W. 10° 00' | ..... | ..... | 30.38‡ | 771.6‡ | 50.1 | 10.1 | ..... | ENE | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven, N. 13° 43', E. 42° 54' | ..... | ..... | 29.81‡ | 767.2‡ | 79 | 26.1 | ..... | N | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 3 | ..... | D. clouds..... | Capt. C. W. Pearson. |
| S. S. Wyberton, N. 16° 10', E. 41° 08' | ..... | ..... | 29.89‡ | 759.2‡ | 80 | 26.7 | ..... | NNW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Señor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | 26.28 | 667.5 | 30.00 | 762.0 | 65.3 | 18.5 | 88 | SE | | | 1 | 8s | | | | Inap. | Inap. | | Mr. Ansart. |
| San José | | | | | | | | | | | | | | | | | | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.52 | 749.9 | 29.57 | 751.1 | 30.4 | — 0.9 | 65 | NNW | | | 6 | | 5 | | | | | Snow & sleet |
| Fanöe | 29.78 | 756.4 | 29.80 | 756.9 | 30.0 | — 0.8 | 81 | NNW | | | 7 | | 5 | | | | | |
| Godthaab, (Greenland) | 29.56 | 750.9 | 29.61 | 752.0 | 30 0 | — 1.1 | 63 | ENE | | | 4 | | 1 | | | | | |
| Stykkisholm, (Iceland) | | | | | | | | | | | | | | | | | | |
| Thorshavn, (Faröe) | 30.39 | 772.0 | 30.43 | 772.9 | 21.9 | — 5.6 | 70 | N | | | 2 | | 5 | | | | | |
| Vestervig | 29.56 | 750.9 | 29.73 | 755.2 | 28.8 | — 1.8 | 80 | NW | | | 6 | | 0 | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.80 | 756.8 | 30.35 | 770.8 | 41.4 | 5.2 | 81 | N | | | 2 | | 5 | | N | 0 | 0 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 30.18 | 766.6 | 30.80 | 782.5 | 51.8 | 11.0 | 75 | N | | | 3 | | 0 | | | 0 | 0 | Clear | Bonvallet, Director. |
| Avignon, Normal School | 29.91 | 759.6 | 29.98 | 761.6 | 60.1 | 15.6 | 55 | N | | | 4 | | 2 | | N | 0 | 0 | Very cloudy | M. Giraud, Director. |
| Bar-sur-Seine | 29.71 | 754.6 | 30.29 | 769.3 | 39.2 | 4.0 | 66 | N | | | 2 | | 10cn | | NE | 0.008 | 0.2 | Covered | C. Saillard, Director. |
| Beauvais, Normal School | 30.06 | 763.5 | 30.35 | 771 0 | 40.1 | 4.5 | 62 | N | | | 2 | | 5 | | N | 0.020 | 0.50 | Cloudy | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.20 | 741.6 | 30.12 | 765.1 | 41.9 | 5.5 | 55 | S | | | 2 | | 10 | | | 0.295 | 7.5 | Covered | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.32 | 744.6 | 30.23 | 767.8 | 44.1 | 6.7 | 71 | N | | | 3 | | 5ck | N | SW | 0 | 0 | Cloudy | M. Marlot, Director. |
| Bourges, Normal School | 29.63 | 752.6 | 30.20 | 767.1 | 40.6 | 4.8 | 84 | N | | | 4 | | 10 | N | N | 0.059 | 1.5 | Raining | A. Waquet, Director. |
| Brest, Naval Observatory | 30.04 | 763.0 | 30.28 | 769.1 | 47.1 | 8.4 | 57 | E | | | 3 | | 8 | | E | 0.039 | 1.00 | | M. de Rermaree, Director |
| Carcassonne, Normal School | 29.74 | 755.5 | 30.19 | 766.7 | 54.7 | 12.6 | 52 | W | | | 3 | | 2 | E | E | 0 | 0 | Slightly cl'dy | September, Director. |
| Caen, Normal School | 30.31 | 769.9 | 30.39 | 771.8 | 39.9 | 4.4 | 66 | NNE | | | 6 | | 5 | | NNE | 0 | 0 | Cloudy | M. Lair, Director. |
| Chartres, Normal School | 29.67 | 753.6 | 30.26 | 768.6 | 40.5 | 4.7 | 74 | SW | | | 3 | | 8 | | NE | 0 | 0 | | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.99 | 761.7 | 30.32 | 770.1 | 40.1 | 4.5 | 62 | NNW | | | 3 | | 5 | NNW | NNW | 0 | 0 | Cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.80 | 731.4 | 30.20 | 767.1 | 40.8 | 4.9 | 87 | NW | | | 1 | | 10 | | NW | 0 | 0 | | Alluard, Director. |
| Commercy, Normal School | 29.36 | 745.6 | 30.26 | 768.5 | 35.4 | 1.9 | 67 | NW | | | 3 | | 5kn | | NW | 0 087 | 2.2 | Cloudy | Dr. Coulet, Director. |
| Commune de Gréasque* | 28.76 | 730.6 | 29.91 | 759.6 | 56.7 | 13.7 | 58 | NW | | | 8 | | 2 | | NW | 0 | 0 | ¼ covered | M. Kina, Director. |
| Grenoble, Normal School | 29.28 | 743.7 | 30.06 | 763.4 | 52.2 | 11.2 | 63 | NW | | | 3 | | k | NE | | 0 | 0 | | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 30.06 | 763.6 | 30.28 | 769.1 | 51.1 | 10.6 | 75 | N | | | 3 | | 8 | | N | 0 | 0 | Very cloudy | Mouillot, Director |
| Le Mans, Normal School | 30.01 | 762.3 | 30.33 | 770.3 | 48.7 | 6.5 | 65 | N | | | 3 | | 8 | | N | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.27 | 743.5 | 30.21 | 767.3 | 43.0 | 6.1 | 68 | N | | | 6 | | 5 | | NE | 0.120 | 3.20 | Cloudy | Baudry, Director. |
| Lorient, Naval Observatory | 30.24 | 768.0 | 30.34 | 770.5 | 47.8 | 8.8 | 67 | NE | | | 2 | | | | NE | 0.004 | 0.1 | | Lt T. Carré, Director. |
| Mâcon, Normal School | | | | | | | | | | | | | | | | | | | M. Galsin, Director. |
| Mirecourt, Normal School | 29.12 | 739.7 | 30.22 | 767 6 | 36.7 | 2.6 | 69 | NNW | | | 3 | | n | | SSE | 0 | 0 | | M. Barbier, Director. |
| Nismes, Normal School | 29.80 | 757.0 | 30.01 | 762.2 | 62.2 | 16.8 | 35 | N | | | 4 | | 2 | | N | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 29.00 | 736.6 | 30.07 | 763.8 | 53.6 | 12 | 65 | N | | | 4 | | | N | N | 0 | 0 | | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 25.19 | 639.8 | | | 31.5 | — 0.8 | 100 | NW | | | 3 | | 10 | | | | | Snow & fog | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.23 | 767.7 | 30.26 | 768.5 | 53.1 | 11.7 | 93 | NNW | | | 1 | | 10 | NNW | NNW | 0 | 0 | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 30.19 | 769.4 | 30.38 | 771 6 | 41.5 | 5.3 | 49 | NNE | | | 2 | | 2 | | N | 0 | 0 | Slightly cl'dy | Frere Lucard, Director. |
| Saint Malo (Port) Obs' | 30.03 | 770.3 | 30.35 | 771.0 | 44.6 | 7.0 | 55 | NE | | | 6 | | 1 | NE | NE | 0 | 0 | Clear | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 30.16 | 766.0 | 30.32 | 770.2 | 41.0 | 5.0 | 43 | NNW | | | 2-3 | | | | NW | 0 | 0 | | E. Renou, Director. |
| Tarbes, Normal School | 29.08 | 738.6 | 30.18 | 766.6 | 50.0 | 10 | 50 | WSW | | | 2 | | 0 | | | 0 | 0 | Clear | T. Huguet, Director. |
| Versailles Observatory | 29.82 | 757.5 | 30.32 | 770.0 | 40.1 | 4.5 | | NE | | | 2 | | 8 | | | 0.004 | 0.09 | Very cloudy | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.43 | 747.5 | 30.16 | 766.1 | 44.6 | 7 | 88 | N | | | 2 | | 8 | | | 0 | 0 | Slightly cl'dy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | 1 | | 2 | | NE | | | | |
| Fort de France, Martinique | 29.94 | 760.5 | 29.97 | 761.2 | 75.2 | 24 | | | | | | | | | | 1.10 | 28. | | L'Abbé Marchesi. |
| Lyons Obs'y, (Park Station) | 29.52 | 749.9 | 30.15 | 765.9 | 46.4 | 8.0 | 62 | N | | | 3 | | 7 | | | 0.020 | 0.5 | Showery | Mr. Jays. |
| Marseilles, Observatory | | | | | | | | | | | | | | | | | | | The Staff. |
| Mont-Louis | 24.82 | 630.5 | 30.14 | 765.5 | 46.9 | 7.8 | 80 | NNW | 15.0 | 6.7 | | | 0 | | | 0 | 0 | | M. Cave. |
| Nice | | | 29.78 | 756.3 | 60.8 | 16.0 | 69 | NW | | | 1 | | 2 | | | 0 | 0 | | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 30.04 | 763.0 | | | 39.6 | 4.2 | 48 | N | | | | | 9 | | N | Inap. | Inap. | | Marié Davy, Director. |
| Perpignan | 30.00 | 762.1 | 30.11 | 764.8 | 58.3 | 14.6 | 52 | NE | 18.6 | 8.3 | 4 | | 0 | | | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.54 | 572.6 | | | 31.1 | — 0.5 | | N | | | 1 | | 0 | | | | | Clear | Gen'l de Nansouty. |
| Toulouse, Observatory | 29.52 | 749.9 | 30.25 | 768.4 | 47.5 | 8.6 | 86 | NW | | | 3 | | 9 | | | 0 | 0 | | M. Mercadier Julier. |
| Tours | 30.10 | 764.4 | 30.29 | 769.4 | 46.2 | 7.9 | 55 | NE | | | 3 | | 9 | | | 0 | 0 | | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.17 | 766.3 | 30.19 | 766.9 | 42.6 | 5.9 | 88 | NNW | 7.6 | 3.4 | | | 6 | | NNE | 0.008 | 0.2 | | Marc Dechevrens, S. J. |
| | | | | | | | | | | | | 10ck | | W | | 1.311 | 33.3 | Covered | |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and in the official series the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt apparently gives cloud direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.11 | 739.4 | 29.95 | 760.7 | 30.7 | — 0.7 | 88 | NW | ..... | ..... | 6 | ..... | 7 | W | ..... | 0.04 | 1. | ..... | Prof. Dr. Hoh. |
| Berlin | 29.57 | 751.1 | 29.75 | 755.6 | 33.4 | 0.8 | 46 | N | ..... | ..... | 7 | ..... | 5 | ..... | ..... | Inap. | Inap. | ..... | Prof. Arndt. |
| Breslau | 29.11 | 739.4 | 29.63 | 752.7 | 30.2 | — 1.0 | 87 | NW | ..... | ..... | 9 | ..... | 6 | ..... | ..... | 0.197 | 5.00 | ..... | Royal University Obs'y |
| Carlsruhe | 29.69 | 754.1 | 30.13 | 765.4 | 39.2 | 4.0 | 51 | NW | ..... | ..... | 2 | ..... | 10 | NW | ..... | ..... | ..... | Light snow. | Albert Senx. |
| Cassel | 29.36 | 745.8 | 29.97 | 761.2 | 30.9 | — 0.6 | 65 | NW | ..... | ..... | 10 | ..... | 8 | WNW | ..... | 0.194 | 4.92 | Snowing | Dr. H. Möhl. |
| Crefeld | 29.97 | 761.1 | 30.13 | 765.2 | 36.1 | 2.3 | 57 | NW | ..... | ..... | 6 | ..... | 5k | ..... | ..... | 0.20 | 5. | ..... | Director Lose. |
| Emden | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. Prestel. |
| Frankfort on the Main | 29.74 | 755.4 | 30.11 | 764.8 | 33.4 | 0.8 | ..... | NNW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0.016 | 0.4 | ..... | Physical Society. |
| Friedrichshafen | 28.64 | 727.4 | 30.04 | 762.9 | 38.3 | 3.5 | 56 | NW | ..... | ..... | 6 | ..... | 8 | W | ..... | 0.048 | 1.1 | ..... | M. Wilhelm. |
| Hamburg | 29.79 | 756.7 | 29.87 | 758.6 | 31.1 | — 0.5 | 55 | NW | ..... | ..... | 6 | ..... | 2k | ..... | ..... | 0.650 | 16.5 | ..... | Captain F. Hegemann. |
| Kiel | 29.78 | 756.3 | 29.83 | 757.7 | 30.2 | — 1.0 | 62 | W | ..... | ..... | 2 | ..... | 1? | ..... | ..... | 0.271 | 6.88 | Snowing? | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.24 | 742.6 | 29.32 | 744.8 | 28.4 | — 2.0 | 75 | NW | ..... | ..... | 6 | ..... | 4 | ..... | ..... | 0.114 | 2.9 | Snowing | Prof. E Luther. |
| Köslin | ..... | ..... | 29.44 | 747.8 | 30.2 | — 1.0 | ..... | NW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0.173 | 4.4 | ..... | H. Müller. |
| Leipsic, Observatory | 29.44 | 747.8 | 29.88 | 758.9 | 32.2 | 0.1 | 60 | NW | ..... | ..... | 6 | ..... | 7 | NW | ..... | 0.087 | 2.2 | Snowing | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.17 | 741.0 | 29.22 | 742.1 | 28.6 | — 1.9 | 86 | N | ..... | ..... | 3 | ..... | 9n | ..... | ..... | ..... | ..... | Heavy snow | Skalweit. |
| Neufahrwasser | 29.44 | 747.7 | 29.45 | 748.1 | 28.8 | — 1.8 | 56 | NNW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | A. Lothes. |
| Posen | 29.36 | 745.5 | 29.05 | 753.2 | 24.8 | — 4.0 | 89 | NW | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0.035 | 0.9 | Snowing | Dr. Magener. |
| Strassburg (in Alsace) | 29.65 | 753.1 | 30.23 | 767.8 | 35.1 | 1.7 | 83 | N | ..... | ..... | 4 | ..... | 10 | NNW | ..... | 0.099 | 2.51 | Snowing | Imp. University Observatory. |
| Stuttgart | 29.11 | 739.4 | 30.05 | 763.3 | 36.9 | 2.7 | 54 | NW | ..... | ..... | 4 | ..... | 7 | W | ..... | 0.028 | 0.7 | Snowing | Prof. Schoder. |
| Treves, (Trier) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.49 | 723.7 | 30.07 | 763.8 | 31.1 | — 0.5 | 90 | NW | 36 | 16 | ..... | ..... | 10 | ..... | NW | 0.098 | 2.5 | ..... | Dr. Van Bebber. |
| Wustrow, Naval School | 29.65 | 753.1 | 29.67 | 753.7 | 29.3 | — 1.5 | 82 | NW | ..... | ..... | 6 | ..... | 5k | ..... | ..... | 0.059 | 1.5 | ..... | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.46 | 748.2 | 29.84 | 758.0 | 61.3 | 16.3 | ..... | SW | ..... | ..... | 2.0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | Dr. J. F. J. Schmidt. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.78 | 756.4 | 29.83 | 757.8 | 75.2 | 24.0 | 68 | SW | 17 | 7.6 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | D. clouds | |
| Deesa | 29.20 | 741.7 | 29.66 | 753.5 | 87.8 | 31.0 | 26 | SW | 6.8 | 3.0 | ..... | ..... | 5 | W | ..... | 0 | 0 | D. clouds | |
| Bombay | 29.78 | 756.5 | 29.82 | 757.5 | 82.6 | 28.1 | 76 | WSW | 9 | 4.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Lahore | 28.86 | 732.9 | 29.63 | 752.5 | 59.6 | 15.3 | 100 | NW | 4.2 | 1.9 | ..... | ..... | 10 | ..... | SW | 1.11 | 28.2 | Cloudy | |
| Belgaum | 27.29 | 693.2 | 29.80 | 756.9 | 80.9 | 27.2 | 72 | W | 13.0 | 5.8 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Roorkee | 28.90 | 734.0 | 29.81 | 757.3 | 69.8 | 21.0 | 53 | SE | 3.7 | 1.6 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Gloomy | |
| Agra | 29.17 | 741.1 | 29.74 | 755.3 | 81.7 | 27.6 | 42 | S | ..... | ..... | ..... | ..... | 10 | ..... | S | 0 | 0 | ..... | |
| Nagpur | 28.73 | 729.8 | 29.76 | 755.8 | 88.5 | 31.4 | 39 | Calm | 1.9 | 0.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Blue sky | |
| Lucknow | 29.38 | 746.2 | 29.75 | 755.7 | 80.3 | 26.8 | 61 | W | 1.4 | 0.6 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | |
| Allahabad | 29.50 | 749.4 | 29.82 | 757.3 | 82.1 | 27.8 | 45 | NW | 2.3 | 1.0 | ..... | ..... | 9 | ..... | W | 0 | 0 | D. clouds | |
| Patna | 29.68 | 751.2 | 29.76 | 755.8 | 86.4 | 30.2 | 33 | NW | 1.6 | 0.7 | ..... | ..... | 8 | NW | NW | 0 | 0 | D. clouds | |
| Hazaribagh | 27.77 | 705.4 | 29.77 | 756.1 | 81.6 | 27.6 | 27 | NW | 6.6 | 3.0 | ..... | ..... | 6 | ..... | W | 0 | 0 | D. clouds | |
| Cuttack | 29.66 | 753.2 | 29.74 | 755.3 | 92.4 | 33.6 | 37 | SW | 5.2 | 1.4 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.71 | 754.7 | 29.74 | 755.3 | 85.7 | 29.8 | 48 | NNW | 4.0 | 1.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Goalpara | 29.33 | 744.9 | 29.71 | 754.7 | 81.0 | 27.2 | 32 | N | 5.1 | 2.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Chittagong | 29.73 | 755.0 | 29.82 | 757.4 | 79.9 | 26.6 | 86 | SSE | 8.5 | 3.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sibsagar | 29.45 | 747.8 | 29.76 | 756.4 | 73.0 | 22.8 | 81 | NE | 3.8 | 1.7 | ..... | ..... | 10 | W | W | 0.08 | 2.0 | Overcast | |
| Jubbulpore | 28.38 | 720.8 | 29.72 | 754.8 | 89.6 | 32.0 | 22 | Calm | 3.4 | 1.5 | ..... | ..... | 9 | ..... | E | 0 | 0 | Gloomy | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.24 | 742.6 | 29.65 | 753.2 | 54.9 | 12.7 | 76 | S | 2.5 | 1.1 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.13 | 740.0 | 29.65 | 753.1 | 63.1 | 17.3 | 41 | W | ..... | ..... | 4 | ..... | 3 | W | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.54 | 750.2 | 29.65 | 753.0 | 55.4 | 13.0 | 69 | Var. | 8.1 | 3.6 | ..... | ..... | 5 | SW | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.76 | 730.6 | 29.68 | 753.9 | 61.9 | 16.6 | 47 | ESE | 3.8 | 1.7 | ..... | ..... | 2 | WNW | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.59 | 751.6 | 29.78 | 756.5 | 57.2 | 14.0 | 62 | SE | 5.6 | 2.5 | ..... | ..... | 10 | SE | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.77 | 705.4 | 29.71 | 754.6 | 61.0 | 16.1 | 43 | NE | ..... | ..... | 2 | ..... | 3 | NW | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.59 | 751.6 | 29.64 | 752.9 | 61.3 | 16.3 | 49 | S | 27.3 | 12.2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.52 | 749.9 | 29.78 | 756.5 | 58.1 | 14.5 | 59 | SW | ..... | ..... | 4 | ..... | 10 | SW | ..... | 0 | 0 | ..... | Cav. F. Meucci |
| Leghorn | 29.71 | 754.6 | 29.80 | 756.8 | 60.4 | 15.2 | 66 | W | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 29.68 | 753.8 | 29.85 | 758.3 | 55.0 | 12.8 | 76 | W | 11.9 | 5.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.60 | 751.7 | 29.85 | 758.2 | 58.5 | 14.7 | 61 | WSW | 8.7 | 3.9 | ..... | ..... | 4 | SW | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.02 | 737.0 | 29.91 | 759.8 | 60.1 | 15.6 | 77 | SW | 1.3 | 0.6 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.74 | 755.3 | 29.93 | 760.2 | 60.3 | 15.7 | 46 | NW | ..... | ..... | 6 | ..... | 1 | N | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.71 | 754.6 | 29.96 | 761.1 | 61.7 | 16.5 | 48 | WSW | 5.6 | 2.5 | ..... | ..... | 1 | WSW | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.85 | 758.2 | 29.92 | 760.0 | 61.7 | 16.5 | 49 | WNW | 3.8 | 1.7 | ..... | ..... | 3 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.33 | 745.0 | 29.89 | 759.1 | 55.4 | 13.0 | 75 | SW | 11.2 | 5.0 | ..... | ..... | 10 | ..... | ..... | 0.039 | 1.0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 29.71 | 754.6 | 29.73 | 755.1 | 48.4 | 9.1 | 97 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.605 | 15.37 | Raining | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.69 | 751.8 | 29.81 | 757.2 | 49.6 | 9.8 | 91 | NNW | 7.7 | 3.4 | ..... | ..... | 10n | ..... | ..... | 0.420 | 10.67 | Raining | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.57 | 751.1 | 29.64 | 752.8 | 47.3 | 8.5 | 88 | S | 4.4 | 2.0 | ..... | ..... | 1s | ..... | ..... | 0.050 | 1.27 | Fair | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 26.09 | 637.3 | 30.17 | 766.4 | 46.4 | 8.0 | 49 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. L. Peres. |
| Leon | 24.44 | 621.0 | 30.04 | 763.1 | 59.4 | 15.2 | 68 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.46 | 595.9 | 30.10 | 766.8 | 46.9 | 8.3 | 89 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Fine | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 51.8 | 11.0 | 81 | W | ..... | ..... | 1 | 3c | 0 | SW | ..... | 0 | 0 | Clear | M. V. de Leon, M. E. |
| Tlacotalpam | 29.99 | 761.6 | 30.00 | 761.9 | 70.7 | 21.5 | 90 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | M. M. Chazaro. |
| San Luis Potosi | 24.17 | 614.1 | 30.10 | 764.5 | 61.1 | 16.2 | 56 | SSW | ..... | ..... | 1 | ..... | 10 | ..... | SSW | 0.608 | 0.2 | Covered | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.42 | 594.8 | 30.18 | 766.6 | 49.6 | 9.8 | 4 | NE | 0.1 | 0.04 | ..... | ..... | 2ck;s | ..... | Calm | 0 | 0 | ..... | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.41 | 721.6 | 30.08 | 763.7 | 73.9 | 23.3 | 65 | NE | ..... | ..... | 2 | 0 | 5 | ..... | SW | 0 | 0 | ½ clouded | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,263.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1893 m., or 6210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2201m., or 7220.9 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 532 m., or 1745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.30 | 769.7 | 30.30 | 769.7 | 37.6 | 3.1 | ..... | NW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.047 | 1.2 | ..... | |
| Groningen | 29.99 | 761.7 | 30.04 | 763.1 | 32.2 | 0.1 | ..... | NNW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.122 | 3.1 | ..... | |
| Helder | 30.15 | 765.7 | 30.15 | 765.7 | 32.7 | 0.4 | ..... | NW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.094 | 2.4 | ..... | |
| Hellevoetsluis | 30.24 | 768.2 | 30.24 | 768.2 | 36.9 | 2.7 | 42 | NW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.15 | 765.7 | 30.19 | 766.9 | 35.8 | 2.1 | 63 | NNW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | 0.039 | 1.0 | Very cloudy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.80 | 756.8 | 29.85 | 758.2 | 25.5 | — 3.6 | 69 | N | 33.3 | 14.9 | ..... | ..... | 3 | ..... | ..... | 0.016 | 0.4 | Light snow. | |
| Bröno | 29.19 | 741.5 | 29.23 | 742.5 | 30.9 | — 0.6 | 92 | NNW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | |
| Christiania | 29.44 | 747.7 | 29.59 | 751.6 | 30.4 | — 0.9 | 44 | NNE | 18 | 8 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.34 | 745.1 | 29.38 | 746.2 | 26.6 | — 3.0 | 61 | NE | 7 | 3 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.03 | 762.7 | 30.22 | 767.6 | 60.6 | 15.9 | 83 | SW | 2.5 | 1.1 | ..... | ..... | 3 | ..... | ..... | 0.709 | 18.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.11 | 739.3 | 30.12 | 765.0 | 67.5 | 19.7 | 39 | E | 3.1 | 1.4 | ..... | ..... | 5 | ESE | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.10 | 764.5 | 30.19 | 766.7 | 62.6 | 17.0 | 55 | SW | 3.8 | 1.7 | ..... | ..... | 6 | ..... | ..... | 0.094 | 2.4 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.77 | 756.1 | 30.13 | 765.3 | 59.4 | 15.2 | 66 | NE | 9.8 | 4.4 | ..... | ..... | 9 | ESE | ..... | 0.020 | 0.5 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.17 | 766.2 | 30.24 | 768.0 | 64.4 | 18.0 | 78 | SSE | 8.7 | 3.9 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | | |
|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | A. M. de Sande, Comd't. |
| India | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | 2 | SW | D. clouds | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | J. T. d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da SilvaCosta, N. 12° 05′, W. 16° 52′ | 1 | ..... | Blue sky | ..... | A. Ferreira, 2nd Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | D. clouds | ..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | 1 | ..... | Overcast | ..... | J. M. T. Guimaraes, Com'd't. |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 28.96 | 735.5 | 29.39 | 746.6 | 28.4 | — 2.0 | 72 | W | 22 | 10 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs |
| Wilna | 28.71 | 729.2 | 29.13 | 740.0 | 31.6 | — 0.2 | 68 | NW | 7 | 3 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 28.84 | 732.6 | 29.48 | 748.9 | 23.9 | — 4.5 | 72 | NW | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.00 | 736.5 | 29.01 | 736.9 | 24.4 | — 4.2 | 61 | NNE | 7 | 3 | ..... | ..... | 9n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 28.23 | 717.1 | 28.87 | 733.3 | 33.3 | 0.7 | 96 | S | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing..... | Physical Cabinet. |
| Nikolaiev | 29.17 | 740.8 | 29.24 | 742.6 | 48.7 | 9.3 | 55 | WNW | 45 | 20 | ..... | ..... | 8n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.49 | 749.0 | 29.51 | 749.5 | 48.6 | 9.2 | 79 | SW | 11 | 5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 28.68 | 725.9 | 29.14 | 740.2 | 29.3 | — 1.5 | 64 | SSE | 11 | 5 | ..... | ..... | 3ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.17 | 740.9 | 29.37 | 746.1 | 38.8 | 3.8 | 60 | SSW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 28.95 | 735.4 | 28.97 | 735.9 | 26.6 | — 3.0 | 89 | ENE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.38 | 720.8 | 29.80 | 756.8 | 52.5 | 11.4 | 42 | SE | 31 | 14 | ..... | ..... | 7ck | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.74 | 755.5 | 29.66 | 753.4 | 43.7 | 6.5 | 29 | WSW | 27 | 12 | ..... | ..... | 3k | ..... | ..... | Blank | Blank | ..... | Capt. Wisganow. |
| Krotkowo* | 28.57 | 725.7 | 29.05 | 737.8 | 32.5 | 0.3 | 62 | WNW | 22 | 10 | ..... | ..... | 9k | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 28.69 | 728.6 | 28.96 | 735.5 | 32.2 | 0.1 | 70 | NW | 4 | 2 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 28.17 | 715.4 | 29.14 | 740.1 | 30.4 | — 0.9 | 73 | SSE | 7 | 3 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.50 | 749.2 | 29.78 | 755.1 | 59.4 | 15.2 | 18 | SSW | 7 | 3 | ..... | ..... | 3cs | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.19 | 716.0 | 29.87 | 758.6 | 59.9 | 15.5 | 49 | NW | 7 | 3 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.46 | 748.3 | 29.97 | 761.1 | 44.8 | 7.1 | 100 | SW | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.60 | 751.7 | 29.89 | 759.3 | 30.2 | 1.0 | 87 | SSW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 30.07 | 763.8 | 30.21 | 767.4 | 36.7 | 2.6 | 37 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend 455? m., or 1,492.7? ft., Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.27 ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.97 | 761.2 | 30.08 | 763.9 | 54.9 | 12.7 | 71 | SE | 4.0 | 1.78 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Misty | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 30.21 | 767.2 | 30.26 | 768.7 | 51.4 | 10.8 | 88 | N | 2.0 | 0.48 | ..... | 0 | 10 | ..... | ..... | 0.008 | 0.2 | Rainy | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.19 | 690.5 | ..... | ..... | 45.7 | 7.6 | 77 | NE | 7.6 | 3.39 | ..... | 0 | 3 | ..... | ..... | 0 | 0 | D. clouds | Domingo Martin y Peres. |
| Madrid, Royal Observatory | 27.87 | 707.9 | ..... | ..... | 62.6 | 17.0 | 41 | S | 4.5 | 2.00 | ..... | 6 | 0 | N | ..... | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.92 | 760.0 | 30.07 | 763.7 | 72.7 | 22.6 | 43 | E | 1.8 | 0.78 | ..... | 3 | 2 | SE | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.22 | 742.2 | 30.12 | 765.0 | 58.5 | 14.7 | 60 | NE | 4.9 | 2.2 | ..... | 7 | 0 | ..... | ..... | 0 | 0 | Light clouds | R. Gil Villanueva, Dir. |
| Sub-Series | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 30.03 | 762.8 | 30.10 | 764.5 | 68.6 | 20.3 | 82 | SE | 5.1 | 2.3 | ..... | 1ck | 0 | Calm | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.83 | 757.9 | 29.89 | 759.2 | 85.2 | 29.2 | 70 | E | 7.8 | 3.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.05 | 763.3 | 30.15 | 765.8 | 60.6 | 15.9 | 78 | S | 9.1 | 4.1 | ..... | 0 | 10 | ..... | S | 0 | 0 | ..... | Capt. C. Pujazon, B. N. Dir. |
| San Juan de Porto Rico, W. I. | 29.98 | 761.4 | 30.07 | 763.7 | 77.0 | 25.0 | 78 | E | 11.8 | 5.26 | ..... | 5k | 4k | E | E | 0.059 | 1.50 | Cloudy | Leonardo de Tejeda, Ch'f. Eng'r |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.24 | 742.8 | 29.28 | 743.8 | 18.0 | — 7.8 | ..... | N | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.24 | 742.8 | 29.30 | 744.1 | 24.8 | — 4.0 | 60 | NE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.26 | 743.3 | 29.32 | 744.6 | 28.4 | — 2.0 | 72 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.024 | 0.6 | ..... | |
| Stockholm | 29.16 | 740.6 | 29.34 | 745.1 | 26.6 | — 3.0 | 63 | N | ..... | ..... | 6 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.25 | 743.0 | 29.31 | 744.5 | 27.0 | — 2.8 | 83 | NNE | ..... | ..... | 7 | ..... | 7 | ..... | ..... | ..... | ..... | Snowing | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.27 | 743.4 | 29.34 | 745.3 | 25.9 | — 3.4 | 80 | NNW | 10.3 | 4.6 | ..... | ..... | 10 | ..... | ..... | 0.006 | 0.14 | Snowing | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.66 | 727.9 | 30.10 | 764.6 | 47.5 | 8.6 | 65 | N | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | Cloudy | The Observatory. |
| Zurich | 28.47 | 723.1 | 30.16 | 766 1 | 37.9 | 3.3 | 64 | NW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | 0.126 | 3.2 | Cloudy | The Observatory. |
| ..... | | | | | | | | | | | | | | | | | | | |
| ..... | | | | | | | | | | | | | | | | | | | |
| ..... | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +3.1 mm.; Thermometer, +1.2 cent.; Relative Humidity, +4 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.68 | 753.9 | 57.7 | 14.3 | 53 | SW | 16 | 7.0 | ..... | ..... | 8 | ..... | SW | 0.220 | 5.6 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.32 | 770.0 | 68.0 | 20.0 | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Slightly cl'dy | A. Bertrand. |
| Valona | ..... | ..... | 29.85 | 758.3 | 61.2 | 16.2 | ..... | S | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.67 | 758.7 | 29.99 | 761.7 | 64.0 | 17.8 | 65 | SW | ..... | ..... | 3 | ..... | 5k | ..... | SW | 0.12 | 3.0 | D. clouds | Prof. C. V. A. Van Dyck. |
| ..... | | | | | | | | | | | | | | | | | | | |
| ..... | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.88 | 758.9 | 29.95 | 760.7 | 24.7 | — 4.1 | 66 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Hon. J. Ferguson. |
| Brockville, Ontario | 29.64 | 752.8 | 29.96 | 761.0 | 26 | — 3.3 | ..... | Calm | 0 | 0 | ..... | ..... | 10n | ..... | SE | 0.10 | 2.5 | Light snow | W. R. Bigg. |
| *Chatham, N. B | 29.90 | 759.4 | 29.97 | 761.2 | 19 | — 7.2 | 80 | W | 8 | 3.6 | ..... | 10ck | 0 | W | ..... | 0 | 0 | Fair | G. A. Blair. |
| Charlottetown, P. E. Island | 29.89 | 759 2 | 29.93 | 760.2 | 22 | — 5.6 | ..... | W | 8 | 3.6 | ..... | 0 | 2s | ..... | ..... | 0.250 | 6.35 | Fair | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.75 | 755 6 | 29.95 | 760.7 | 22.0 | — 5.6 | 83 | E | ..... | ..... | 1 | ..... | 10n | ..... | ..... | Inap. | Inap. | Overcast | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | 29.28 | 743.7 | 30.33 | 770.4 | 44.3 | 6.8 | 92 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. Bevis. |
| *Father Point, Quebec | 29.93 | 760.2 | 29.95 | 760.7 | 19 | — 7.2 | 69 | W | 20 | 8.9 | ..... | 5k | 5ks | W | W | 0 | 0 | Cloudy | J. McWilliams. |
| Fredericton, N. B | 30.00 | 762.0 | 30.07 | 763.8 | 21.1 | — 6.1 | 70 | NW | 10 | 4.5 | ..... | 10cs | 0 | ..... | ..... | 0.03 | 0.8 | Overcast | Prof. Harrison. |
| *Fort Garry Manitoba | 29.36 | 745.7 | 30.26 | 768.6 | 10 | —12.2 | 94 | N | 8 | 3.6 | ..... | ..... | 10n | ..... | ..... | 0.100 | 2.54 | Cloudy | James Stewart. |
| Granton, Ontario | 28.66 | 728.0 | 29.78 | 756.4 | 36 | 2.2 | ..... | W | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | James Grant. |
| *Halifax, N. S | 29.86 | 758.4 | 30.00 | 762.0 | 25 | — 3.9 | 87 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | F. Allison, M. A. |
| Hamilton, Ontario | 29.42 | 747.2 | 29.80 | 756.9 | 32.0 | 0.0 | 87 | SW | ..... | ..... | 1 | 10c | 0 | SW | ..... | 0 | 0 | Overcast | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.51 | 749 5 | 29.86 | 758.4 | 28 | — 2.2 | 88 | NE | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.68 | 753.9 | 29.92 | 760.0 | 26.0 | — 3.3 | 89 | NW | 8 | 3.6 | ..... | 6k | 0 | NW | ..... | 0 | 0 | Fair | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 29.84 | 757.9 | 30.05 | 763.3 | 24 | — 4.4 | 65 | E | 8 | 3.6 | ..... | 8ck | 2s | W | ..... | 0 | 0 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.03 | 737.3 | 29.75 | 755.6 | 27 | — 2.8 | 82 | E | 13 | 5.8 | ..... | ..... | 10n | ..... | SE | 0.10 | 2.5 | Cloudy | Rev. R. Mosley. |
| Peterboro, Ontario | 29.02 | 737.1 | 29.80 | 756.9 | 31.5 | — 0.3 | 67 | E | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.15 | 3.8 | Overcast | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.08 | 738.6 | 29.78 | 756.4 | 38 | 3.3 | 81 | SW | 6 | 2.7 | ..... | 5k | 0 | SW | ..... | 0 | 0 | Fair | H. Morgan. |
| Port Hastings, N. S | 29.90 | 759.4 | 29.95 | 760.7 | 27.5 | — 2.5 | ..... | NW | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.18 | 741.2 | 29.84 | 757.9 | 37 | 2.8 | 81 | SW | 15 | 6.7 | ..... | ..... | 10ks | ..... | W | Inap. | Inap. | Cloudy | M. Payne. |
| *Quebec, Quebec | 29.74 | 755.4 | 30.09 | 764.3 | 16 | — 8.9 | 66 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | Calm | 0 | 0 | Cloudy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.44 | 747.8 | 29.92 | 760.0 | 20 | — 6.7 | 84 | E | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Snowing | W. H. McIntyre. |
| St. Andrews, N. B | 30.01 | 762.2 | 30.06 | 763.5 | 25 | — 3.9 | 74 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| St. John, N. B | 29.87 | 758.7 | 30.04 | 763.0 | 23 | — 5.0 | 73 | W | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | G. Murdock, C. E. |
| *Saugeen, Ontario | 28.98 | 736.1 | 29.71 | 754.6 | 34 | 1.1 | 86 | SW | 25 | 11.2 | ..... | ..... | 10s | ..... | ..... | 0.13 | 3.3 | Cloudy | K. Stewart. |
| Stayner, Ontario | 28.93 | 734.8 | 29.74 | 755.4 | 31 | — 0.6 | 91 | SE | 3 | 1.3 | ..... | ..... | 10n | ..... | W | 0.15 | 3.8 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.47 | 723.1 | 29.78 | 756.4 | 35.5 | 1.9 | 78 | NW | 14 | 6.3 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.68 | 753.9 | 29.92 | 760.0 | 26 | — 3.3 | 77 | W | 12 | 5.4 | ..... | ..... | 8ks | ..... | ..... | 0 | 0 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.38 | 746.2 | 29.77 | 756.1 | 34 | 1.1 | 83 | NE | 6 | 2.7 | ..... | ..... | 10ks | ..... | W | 0.01 | 0.3 | Cloudy | Magnetic Observatory |
| Windsor, N. S | 29.92 | 760.0 | 30.02 | 762.5 | 25.0 | — 3.9 | 94 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. John E. Oram |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 28.0 | — 2.2 | 88 | SW | ..... | ..... | ..... | 10ks | 10ns | ..... | ..... | 0.01 | 0.3 | Fine | John Delany. |
| ..... | | | | | | | | | | | | | | | | | | | |
| ..... | | | | | | | | | | | | | | | | | | | |

Note—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters, Stratford, 1,182 ft., or 360.3 meters.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.87 | 758.7 | 30.11 | 764.8 | 25 | — 1.7 | 89 | S | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light snow. | |
| Alpena, Michigan | 29.13 | 739.9 | 29.79 | 756.7 | 28 | — 2.2 | 88 | N | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.13 | 3.3 | Light snow. | |
| Atlanta, Georgia | 28.97 | 735.8 | 30.12 | 765.0 | 53 | 11.7 | 48 | NE | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy. | |
| Atlantic City, New Jersey | 30.19 | 766.8 | 30.20 | 767.1 | 39 | 3.9 | 82 | S | 12 | 5.4 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy. | |
| Augusta, Georgia | 30 01 | 762.2 | 30.19 | 766.8 | 54 | 12.2 | 74 | NW | 2 | 0.9 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy. | |
| Baltimore, Maryland | 30.08 | 764 0 | 30.13 | 765.3 | 41 | 5.0 | 74 | W | 4 | 1.8 | ..... | 5c | Sm'e | NW | Calm | 0 | 0 | Fair | |
| Barnegat, New Jersey | 30.14 | 765.5 | 30.16 | 766.1 | 38 | 3.3 | 81 | S | 12 | 5.4 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy. | |
| Bismarck, Dakota | 28.40 | 721.3 | 30.25 | 768.3 | 11 | —11.7 | 100 | NW | 20 | 8.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy. | |
| Boerne, Texas | 28.59 | 726.2 | 29.90 | 759.4 | 58 | 14.4 | 94 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.14 | 3.6 | Cloudy. | |
| Boise City, Idaho | 27.50 | 698.5 | 30.46 | 773.7 | 33 | 0.6 | 84 | SE | 3 | 1.3 | ..... | 2cs | 0 | W | ..... | 0 | 0 | Fair | |
| Boston, Massachusetts | 30.04 | 763.0 | 30.21 | 767.3 | 30 | — 1.1 | 89 | W | 5 | 2.2 | ..... | ..... | 10s;hz | ..... | W;Calm | 0 | 0 | Cloudy. | |
| Bracketville, Texas | 28.93 | 734.8 | 29.95 | 760.7 | 60 | 15.6 | 71 | NW | 6 | 2.7 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy. | |
| Breckenridge, Minnesota | 29.16 | 740.7 | 30.24 | 768.1 | 15 | — 9.4 | 90 | NW | 12 | 5.4 | ..... | ..... | 10ks | ..... | NW | 0.02 | 0.5 | Cloudy. | |
| Brownsville, Texas | 29.96 | 761.0 | 30.00 | 762.0 | 65 | 18.3 | 73 | Calm | 0 | 0 | ..... | 8cs | 0 | Calm | ..... | 0.01 | 0.3 | Fair. | |
| Buffalo, New York | 29.07 | 738.4 | 29.77 | 756.1 | 41.5 | 5.3 | 61 | SW | 10 | 4.5 | ..... | 1ck | 0 | SW | ..... | 0 | 0 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 51 | 10.6 | 34 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.76 | 755.9 | 30.06 | 763.5 | 28 | — 2.2 | 77 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy. | |
| Cairo, Illinois | 29.74 | 755.4 | 30.14 | 765.5 | 51 | 10.6 | 79 | NW | 1 | 0.4 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy. | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.25 | 641.3 | 30.05 | 763.3 | 52 | 11.1 | 35 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 42 | 5.6 | 42 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.49 | 698.2 | 30.06 | 763.5 | 33 | 0.6 | 79 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.26 | 768.6 | 30.27 | 768.8 | 47 | 8.3 | 70 | NE | 2 | 0.9 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |
| Cape Henry, Virginia | 30.17 | 766.3 | 30.19 | 766.8 | 42 | 5.6 | 83 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.23 | 767.8 | 30.25 | 768.3 | 49 | 9.4 | 78 | SE | 5 | 2.2 | ..... | 10cs | ..... | Calm | ..... | 0 | 0 | Cloudy. | |
| Cape May, New Jersey | 30.13 | 765.3 | 30.16 | 766.1 | 43 | 6.1 | 75 | S | 19 | 8.5 | ..... | 5cs | Haze | W | ..... | 0 | 0 | Fair | |
| Castroville, Texas | 29.26 | 743.2 | 29.97 | 761.2 | 61 | 16.1 | 88 | NW | 4 | 1.8 | ..... | 0 | 2s | ..... | NW | 0 | 0 | Fair | |
| Charleston, South Carolina | 30.10 | 764.5 | 30.16 | 766.1 | 59 | 15.0 | 76 | E | 4 | 1.8 | ..... | 1k | 7ks | SW | SW | 0 | 0 | Cloudy. | |
| Cheyenne, Wyoming | 24.14 | 613.1 | 30.08 | 764.0 | 33 | 0.6 | 51 | NW | 12 | 5.4 | ..... | 0 | 5s | ..... | NW | 0 | 0 | Fair | |
| Chicago, Illinois | 29.34 | 745.2 | 30.06 | 763.5 | 37 | 2.8 | 63 | NW | 8 | 3.6 | ..... | 0 | 5s | ..... | NW | 0 | 0 | Fair | |
| Cincinnati, Ohio | 29.38 | 746.2 | 30.03 | 762.8 | 52 | 11.1 | 54 | SW | 4 | 1.8 | ..... | 3cs | Sm'e | W | Calm | Inap. | Inap. | Fair | |
| Cleveland, Ohio | 30.15 | 765.8 | 29.87 | 758.7 | 45 | 7.2 | 61 | SW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Coleman City, Texas | 28.28 | 718.3 | 29.96 | 761.0 | 49 | 9.4 | 85 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | Calm | 0.78 | 19.8 | Fair | |
| Columbus, Ohio | 29.12 | 739.6 | 29.95 | 760.7 | 47 | 8.3 | 55 | SW | 5 | 2.2 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Corpus Christi, Texas | 28.18 | 715.8 | 29.88 | 758 9 | 48 | 8.9 | 42 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Corsicana, Texas | 29.59 | 751.6 | 30.06 | 763.5 | 59 | 15.0 | 94 | SW | 2 | 0.9 | ..... | ..... | 10n | ..... | E | 0.09 | 2.3 | Light rain. | |
| Davenport, Iowa | 29.50 | 749.3 | 30.17 | 766.3 | 32 | 0.0 | 79 | NW | 9 | 4.0 | ..... | 0 | 8s | ..... | NW | 0 | 0 | Fair | |
| Deadwood, Dakota | 25.46 | 646.7 | ..... | ..... | 36 | 0.6 | 89 | S | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Light snow. | |
| Decatur, Texas | 28.90 | 734.0 | 30.06 | 763.5 | 60 | 15.6 | 85 | SW | 2 | 0.9 | ..... | 0 | 5s | ..... | Calm | 0.15 | 3.8 | Fair | |
| Denison, Texas | 29.27 | 743.4 | 30.06 | 763.5 | 58 | 14.4 | 88 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | E | 0.02 | 0.5 | Cloudy | |
| Denver, Colorado | 24.90 | 632.4 | 30.12 | 765.0 | 32 | 0.0 | 79 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Des Moines, Iowa | 29.30 | 744.2 | 30.23 | 767.8 | 28 | — 2.2 | 77 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 29.16 | 740.7 | 29.83 | 757.7 | 40 | 4.4 | 65 | W | 14 | 6.3 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy. | |
| Dodge City, Kansas | 27.61 | 701.0 | 29.93 | 760.2 | 46 | 7.8 | 69 | SW | 4 | 1.8 | ..... | ..... | 8s | ..... | NW | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 29.42 | 747.2 | 30.14 | 765.5 | 34 | 1.1 | 70 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy. | |
| Duluth, Minnesota | 29.39 | 746.5 | 30.11 | 764.8 | 22 | — 5.6 | 86 | SW | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | 0.21 | 5.3 | Light snow. | |
| Eagle Pass, Texas | 29.27 | 743.4 | 30.01 | 762.2 | 58 | 14.4 | 94 | NW | 2 | 0.9 | ..... | 0 | Fog | ..... | ..... | 0.02 | 0.5 | Clear | |
| Eastport, Maine | 30.01 | 762.2 | 30.08 | 764.0 | 28 | — 2.2 | 54 | W | 8 | 3.6 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 68 | 20.0 | 90 | Calm | ..... | ..... | 0 | ..... | 10c | ..... | Calm | 0.22 | 5.6 | Cloudy. | |
| El Paso, Texas | 26.32 | 668.5 | ..... | ..... | 45 | 7.2 | 10 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.09 | 738.9 | 29.80 | 756.9 | 47 | 8.3 | 70 | SW | 11 | 4.9 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Escanaba, Michigan | 29.30 | 744.2 | 29.98 | 761.5 | 27 | — 2.8 | 76 | N | 16 | 7.2 | ..... | ..... | 10s | ..... | N | 0.31 | 7.9 | Cloudy | |
| Florence, Arizona | 28.55 | 725.2 | 30.15 | 765.8 | 42 | 5.6 | 34 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 28.41 | 721.6 | ..... | ..... | 6 | —14.4 | 76 | N | 15 | 6.7 | ..... | ..... | 10s | ..... | N | Inap. | Inap. | Cloudy. | |
| Fort Craig, New Mexico | 25.64 | 651.2 | 29.70 | 754.4 | 37 | 2.8 | 45 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.28 | 642.1 | 30.24 | 768.1 | 39 | 3.9 | 80 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Fort Gibson, Indian Ter | 29.54 | 750.3 | 30.07 | 763.8 | 57 | 13.9 | 49 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort Griffin, Texas | 28.80 | 731.5 | 30.08 | 764.0 | 53 | 11.7 | 86 | NW | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy. | |
| Fort Keogh, Montana | 27.84 | 707.1 | ..... | ..... | 12 | —11.7 | 80 | N | 17 | 7.6 | ..... | ..... | 10n | ..... | N | Inap. | Inap. | Light snow. | |
| Fort McKavett, Texas | 27.84 | 707.1 | 29.80 | 756.9 | 45 | 7.2 | 92 | Calm | 0 | 0 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Foggy | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.88 | 733.5 | 30.00 | 762.0 | 51 | 10.6 | 100 | N | 16 | 7.2 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.3 | Light rain. | |
| Fort Stevenson, Dakota | 28.44 | 722.4 | ..... | ..... | 8 | —13.3 | 78 | NW | 24 | 10.7 | ..... | 4ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Fredericksburg, Texas | 28.33 | 719.6 | 29.87 | 758.7 | 63 | 17.2 | 78 | N | 6 | 2.7 | ..... | 0 | 5ks | ..... | Calm | 0.25 | 6.3 | Fair | |
| Galveston, Texas | 30.00 | 762.0 | 30.04 | 763.0 | 61 | 16.1 | 94 | NW | 1 | 0.4 | ..... | 0 | 8ks | ..... | NW | 0.39 | 9.9 | Cloudy | |
| Graham, Texas | 29.00 | 736.6 | 30.06 | 763.5 | 56 | 13.3 | 94 | SE | 4 | 1.8 | ..... | 0 | 7s | ..... | Calm | 0.41 | 10.4 | Fair | |
| Grand Haven, Michigan | 29.33 | 745.0 | 30.00 | 762.0 | 34 | 1.1 | 79 | N | 28 | 12.5 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Indianapolis, Indiana | 29.24 | 742.7 | 30.02 | 762.5 | 46 | 7.8 | 62 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Indianola, Texas | 30.02 | 762.5 | 30.04 | 763.0 | 65 | 18.3 | 78 | NE | 10 | 4.5 | ..... | 5cs | 0 | SW | ..... | 0.01 | 0.3 | Fair | |
| Jacksboro, Texas | 28.92 | 734.6 | 30.04 | 763.0 | 60 | 15.6 | 71 | W | 4 | 1.8 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Jacksonville, Florida | 30.09 | 764.3 | 30.12 | 765.0 | 59 | 15.0 | 88 | N | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Keokuk, Iowa | 29.49 | 749.0 | 30.14 | 765.5 | 31 | — 0.6 | 79 | N | 9 | 4.0 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |
| Key West, Florida | 30.07 | 763.8 | 30.11 | 764.8 | 72 | 22.2 | 71 | E | 6 | 2.7 | ..... | 6cs;k | 1ks | W; SE | Calm | 0 | 0 | Fair | |
| Kittyhawk North Carolina | 30.21 | 767.3 | 30.24 | 768.1 | 44 | 6.7 | 54 | S | 5 | 2.2 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.13 | 739.9 | 30.17 | 766.3 | 39 | 3.9 | 82 | NE | 2 | 0.9 | ..... | 10cs | Sm'e | SW | ..... | 0 | 0 | Cloudy | |
| La Crosse, Wisconsin | 29.33 | 745.0 | 30.12 | 765.0 | 32 | 0.0 | 69 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 26.17 | 664.7 | 30.32 | 770.1 | 40 | 4.4 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.58 | 751.3 | 29.92 | 760.0 | 65 | 18.3 | 94 | NE | 3 | 1.3 | ..... | 10ck | 0 | Calm | ..... | 0.03 | 0.8 | Cloudy. | |
| Leavenworth, Kansas | 29.31 | 744.5 | 30.18 | 766.6 | 38 | 3.3 | 72 | N | 1 | 0.4 | ..... | 1cs | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.70 | 754.4 | 30.05 | 763.3 | 48.5 | 9.1 | 85 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Louisville, Kentucky | 29.49 | 749.0 | 30.05 | 763.3 | 54 | 12.2 | 43 | W | 8 | 3.6 | ..... | 5k | 5s | W | Calm | Inap. | Inap. | Cloudy | |
| Lynchburg, Virginia | 29.46 | 748.0 | 30.14 | 765.5 | 45 | 7.2 | 46 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Madison, Wisconsin | 29.08 | 738.6 | 30.10 | 764.5 | 30 | — 1.1 | 68 | NW | 16 | 7.2 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Marquette, Michigan | 29.25 | 742.9 | 29.99 | 761.7 | 25 | — 3.9 | 75 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.34 | 8.6 | Cloudy. | |
| Mason, Texas | 28.46 | 722.9 | 30.25 | 768.3 | 49 | 9.4 | 93 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy. | |
| Memphis, Tennessee | 29.78 | 756.4 | 30.11 | 764.8 | 48 | 8.9 | 71 | SE | 1 | 0.4 | ..... | 5cs | Sm'e | Calm | Calm | 0 | 0 | Smoky | |
| Milwaukee, Wisconsin | 29.30 | 744.2 | 30.06 | 763.5 | 31 | — 0.6 | 79 | NW | 15 | 6.7 | ..... | ..... | 10s | ..... | NW | Inap. | Inap. | Cloudy | |
| Mobile, Alabama | 30.04 | 763.0 | 30.08 | 764.0 | 62.5 | 16.9 | 96 | S | 1 | 0.4 | ..... | ..... | 10s;fog | ..... | Calm | Inap. | Inap. | Cloudy | |
| Montgomery, Alabama | 29.85 | 758.2 | 30.09 | 764.3 | 62 | 16.7 | 83 | E | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| Morgantown, West Virginia | 28.92 | 734.6 | 29.98 | 761.5 | 47 | 8.3 | 62 | S | 5 | 2.2 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Mt. Washington, N. H. | 23.50 | 596.9 | 29.86 | 758.4 | 4 | —15.6 | 74 | NW | 60 | 26.8 | ..... | 5ck | 0 | NW | ..... | 0.16 | 4.1 | Fair | |
| Nashville, Tennessee | 29.56 | 750.8 | 30.10 | 764.5 | 45 | 7.2 | 68 | NW | 2 | 0.9 | ..... | 5cs | Haze | Calm | ..... | 0 | 0 | Fair. | |
| New Haven, Connecticut | 30.07 | 763.8 | 30.19 | 766.8 | 37 | 2.8 | 70 | S | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| New London, Connecticut | 30.18 | 766.6 | 30.23 | 767.8 | 34 | 1.1 | 70 | W | 3 | 1.3 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy. | |
| New Orleans, Louisiana | 29.99 | 761.7 | 30.05 | 763.3 | 62 | 16.7 | 49 | SE | 2 | 0.9 | ..... | ..... | 10s;sm' | ..... | SE | 0.31 | 7.9 | Cloudy | |
| Newport, Rhode Island | 30.17 | 766.3 | 30.22 | 767.6 | 33.5 | 0.9 | 67 | SW | 4 | 1.8 | ..... | 5ck | 5s | Calm | Calm | 0 | 0 | Cloudy. | |
| New York, New York | 29.99 | 761.7 | 30.18 | 766.6 | 38 | 3.3 | 63 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 30.18 | 766.6 | 30.24 | 768.1 | 44 | 6.7 | 76 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r —10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.22 | 691.4 | 29.86 | 758.4 | 39 | 3.9 | 59 | SW | 16 | 7.2 | ..... | 8cs | 2s | NW | W | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 30.21 | 767.3 | 30.26 | 768.6 | 37.0 | 2.8 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Dense fog | |
| Omaha, Nebraska | 29.05 | 737.9 | 30.22 | 767.6 | 28 | — 2.2 | 66 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.54 | 750.3 | 29.87 | 758.7 | 38 | 3.3 | 64 | E | 18 | 8.0 | ..... | ..... | 10s | ..... | NW | 0.01 | 0.3 | Cloudy | |
| Pembina, Dakota | 29.33 | 745.0 | 30.23 | 767.8 | 13 | —10.6 | 100 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap | Cloudy | |
| Philadelphia, Pa | 30.09 | 764.3 | 30.14 | 765.5 | 40 | 4.4 | 73 | SE | 2 | 0.9 | ..... | 10ck | Haze | W | Calm | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.87 | 733.3 | 30.71 | 780.0 | 48 | 8.9 | 49 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.73 | 450.3 | 29.94 | 760.5 | 4 | —15.6 | 48 | NW | 48 | 21.5 | ..... | 5k | 0 | NW | ..... | 0.48 | 12.2 | Fair | |
| Pioche, Nevada | 24.29 | 617.0 | 30.00 | 763.5 | 35 | 1.7 | 36 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.13 | 739.9 | 29.95 | 760.7 | 47 | 8.3 | 55 | SW | 12 | 5.4 | ..... | 1c | 0 | W | ..... | 0 | 0 | Clear | |
| Port Huron, Michigan | 29.13 | 739.9 | 29.80 | 756.9 | 38 | 3.3 | 72 | W | 20 | 8.9 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | |
| Portland, Maine | 30.09 | 764.3 | 30.14 | 765.5 | 32 | 0.0 | 69 | NW | 4 | 1.8 | ..... | ..... | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Portland, Oregon | 30.22 | 767.6 | 30.32 | 770.1 | 38.6 | 3.6 | 91 | N | 2 | 0.9 | ..... | 1c | 0 | ..... | ..... | 0 | 0 | Clear | |
| Prescott, Arizona | 24.88 | 631.9 | 30.24 | 768.1 | 32 | 0.0 | 89 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.07 | 738.4 | 29.88 | 758.9 | 57 | 13.9 | 87 | SE | 3 | 1.3 | ..... | 8k | 2s | S | SE | Inap. | Inap. | Cloudy | |
| Punta Rassa, Florida | 30.14 | 765.5 | 30.15 | 765.8 | 69 | 20.6 | 70 | SE | 7 | 3.1 | ..... | 5ck | 0 | SW | ..... | 0 | 0 | Fair | |
| Red Bluff, California | 29.60 | 751.9 | 30.17 | 766.3 | 49 | 9.4 | 64 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rio Grande City, Texas | 29.82 | 757.4 | 30.03 | 762.8 | 69 | 20.6 | 90 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Rochester, New York | 29.10 | 740.7 | 29.78 | 756.4 | 43 | 6.1 | 83 | SW | 12 | 5.4 | ..... | 5k | 0 | W | ..... | Inap. | Inap. | Fair | |
| Roseburg, Oregon | 29.70 | 754.4 | 30.20 | 769.4 | 37.5 | 3.1 | 95 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Sacramento, California | 30.05 | 763.3 | 30.14 | 765.5 | 52.5 | 11.4 | 83 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.55 | 750.6 | 30.13 | 765.3 | 47 | 8.3 | 62 | N | 10 | 4.5 | ..... | 3cs;ck | 2s | Calm;W | Calm | 0 | 0 | Fair | |
| St. Marks, Florida | 30.12 | 765.0 | 30.13 | 765.3 | 59 | 15.0 | 94 | SE | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Light rain | |
| St. Paul, Minnesota | 29.22 | 742.2 | 30.08 | 764.0 | 32 | 0.0 | 69 | W | 2 | 0.9 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Salt Lake City, Utah | 25.96 | 659.1 | 30.28 | 769.1 | 35 | 1.7 | 53 | Calm | 0 | 0 | ..... | 4c | 0 | Calm | ..... | 0 | 0 | Fair | |
| San Antonio, Texas | 29.36 | 745.7 | 29.94 | 760.5 | 64 | 17.8 | 83 | NE | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| San Diego, California | 30.10 | 764.5 | 30.18 | 766.6 | 46 | 7.8 | 92 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.22 | 742.2 | 29.89 | 759.2 | 44 | 6.7 | 60 | NW | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandy Hook, New Jersey | 30.12 | 765.0 | 30.15 | 765.8 | 39 | 3.9 | 82 | S | 16 | 7.2 | ..... | 5ck | 2s | W | W | 0 | 0 | Cloudy | |
| San Francisco, California | 30.06 | 763.5 | 30.12 | 765.0 | 53 | 11.7 | 90 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 28.38 | 693.8 | 29.92 | 760.0 | 35 | 1.7 | 53 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.07 | 763.8 | 30.16 | 766.1 | 56 | 13.3 | 81 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Shreveport, Louisiana | 29.80 | 756.9 | 30.02 | 762.5 | 60 | 15.6 | 94 | NW | 5 | 2.2 | ..... | ..... | 10n | ..... | SE | 0.03 | 0.8 | Light rain | |
| Silver City, New Mexico | 24.37 | 619.0 | 30.59 | 777.0 | 45 | 7.2 | 60 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.22 | 767.6 | 30.25 | 768.3 | 56 | 13.3 | 75 | SE | 11 | 4.9 | ..... | 1cs | 0 | W | ..... | 0 | 0 | Clear | |
| Springfield, Massachusetts | 30.04 | 763.0 | 30.17 | 766.3 | 38 | 3.6 | 61 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| Stockton, Texas | 27.05 | 687.1 | 30.05 | 763.3 | 43 | 6.1 | 92 | SW | 4 | 1.8 | ..... | ..... | 0 | ..... | ..... | 0.07 | 1.8 | Clear | |
| Thatcher's Island, Mass | 30.15 | 765.8 | 30.30 | 769.6 | 33 | 0.6 | 61 | W | 7 | 3.1 | ..... | 0 | 8s | ..... | W | 0 | 0 | Fair | |
| Toledo, Ohio, | 29.20 | 741.7 | 29.88 | 758.9 | 46 | 7.2 | 68 | W | 22 | 9.8 | ..... | 0 | 8ks | ..... | ..... | 0 | 0 | Cloudy | |
| Tucson, Arizona | 27.59 | 700.8 | 30.14 | 765.5 | 47 | 8.3 | 41 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 30.02 | 762.5 | 30.54 | 775.7 | 34.0 | 1.1 | 96 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Fair | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 32 | 0.0 | 100 | Calm | ..... | ..... | 0 | ..... | 10s | ..... | E | 0.07 | 1.8 | Cloudy | |
| Uvalde, Texas | 29.16 | 740.7 | 29.98 | 761.5 | 58 | 14.4 | 88 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Vicksburg, Mississippi | 29.82 | 757.4 | 30.08 | 764.0 | 60 | 15.6 | 77 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Virginia City, Montana | 24.42 | 620.3 | 29.90 | 759.4 | 34 | 1.1 | 52 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.76 | 755.9 | 30.14 | 765.5 | 48.4 | 9.1 | 90 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 29.99 | 761.7 | 30.10 | 764.5 | 42 | 5.6 | 74 | S | 9 | 4.0 | ..... | 5c | Haze | W | Calm | 0 | 0 | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 60 | 10.0 | 65 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.12 | 765.0 | 30.20 | 767.1 | 51 | 10.6 | 72 | E | 7 | 3.1 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.93 | 658.6 | 30.29 | 769.4 | 28 | — 2.2 | 66 | E | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass | 30.19 | 766.8 | 30.23 | 767.8 | 35 | 1.7 | 63 | SW | 5 | 2.2 | ..... | 8cs | 2s | SW | SW | 0 | 0 | Cloudy | |
| Yankton, Dakota | 28.93 | 734.8 | 30.32 | 770.1 | 19 | — 7.2 | 69 | NW | 2 | 0.9 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Yuma, Arizona | 29.82 | 757.4 | 29.98 | 761.5 | 59 | 15.0 | 48 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.52 | 724.4 | 29.93 | 760.2 | 52 | 11.1 | 60 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.06 | 763.5 | 30.11 | 764.8 | 71 | 21.7 | 75 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.25 | 641.3 | ..... | ..... | 65.0 | 18.3 | 82 | Calm | 0 | 0 | ..... | ..... | 10s;ks | ..... | ..... | 0.54 | 13.7 | ..... | Thomas Herran. |
| Navassa, W. I | 29.95 | 760.7 | 30.03 | 762.8 | 78.0 | 25.6 | ..... | E | 5.5 | 2.5 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Partly cld'y | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.01 | 762.2 | 30.01 | 762.2 | 82 | 27.8 | 83 | E | ..... | ..... | 2 | ..... | 8ks | ..... | ..... | 0.080 | 0.76 | Cloudy | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,383 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,036 (?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,289 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,500 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,676 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m., Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,895.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.46 in. The instrumental error of the barometer at Medellin is not known.

## UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.12 | 765.0 | 52 | 11.1 | 49 | 9.4 | 93 | SSE | 1 | 0.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 30.24 | 768.1 | 64 | 17.8 | 64 | 17.8 | 94 | SE | 5 | 2.2 | ..... | ..... | 10 | ..... | ..... | 1.66 | 42.2 | ..... | ..... | Threatening | |
| Navy Yard, Portsmouth, N.H | 30.17 | 766.3 | 64 | 17.8 | 31 | — 0.6 | 89 | SW | 3 | 1.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Naval Hospital, Yokohama, Japan.....*... | 29.69‡ | 754.1‡ | ..... | ..... | 52 | 11.1 | 79 | SW | ..... | ..... | 1 | ..... | 7s | ..... | SW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Adams, Panama ..... | 30.00 | 762.0 | 77 | 25.0 | 75 | 23.9 | 100 | NW | ..... | ..... | 1–2 | ..... | 8 | ..... | N;W | ..... | ..... | ..... | ..... | Fair..... | |
| Alaska..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Alliance, Genoa, Italy..... | 29.78‡ | 756.4‡ | ..... | ..... | 57 | 13.9 | 69 | SE | ..... | ..... | 3 | ..... | 3 | ..... | S;E | ..... | ..... | Light | S | Hazy..... | |
| Ashuelot, Hong-Kong, China. ..... | 29.86‡ | 758 4‡ | ..... | ..... | 73 | 22.8 | 95 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Foggy ..... | |
| Canonicus, New Orleans, La..... | 30.03 | 762.8 | 47 | 8.3 | 61 | 16.1 | 94 | SE | ..... | ..... | 1 | ..... | 10 | ..... | SE | ..... | ..... | ..... | ..... | Foggy ..... | |
| Colorado, New York, N. Y..... | 30.14 | 765.5 | 38 | 3.3 | 36 | 2.2 | 100 | ESE | 5 | 2.2 | ..... | ..... | 10 | ..... | W | 0 | 0 | ..... | ..... | Hazy..... | |
| Constitution Lisbon, Portugal..... | 30.10‡ | 764.5‡ | ..... | ..... | 62 | 16.7 | 94 | NNE | ..... | ..... | 2 | ..... | 8 | ..... | SE | ..... | ..... | ..... | ..... | Pleasant..... | |
| Despatch, N. 36° 52′, E. 20° 55′..... | 29.98‡ | 761.6‡ | ..... | ..... | 62 | 16.7 | 94 | W | ..... | ..... | 2 | ..... | 5 | ..... | W | ..... | ..... | Smooth | ..... | Fair..... | |
| Franklin, Norfolk, Va..... | 30.38 | 771.6 | 69 | 20.6 | 46 | 7.8 | 69 | SW | 7.2 | 3.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Gettysburg, Genoa, Italy ..... | 29.78‡ | 756.4‡ | ..... | ..... | 58 | 14.4 | 82 | SE | ..... | ..... | 4 | ..... | 2 | ..... | SE | 0 | 0 | ..... | ..... | Clear..... | |
| Hartford, Montevideo, Uruguay... | 30.15 | 765.8 | 71 | 21.7 | 69 | 20.6 | 80 | ESE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | ..... | Cloudy ..... | |
| Lackawana, N. 4° 22′, W. 80° —'...*... | 29.76‡ | 755.6‡ | ..... | ..... | 79 | 26.1 | 86 | SSW | ..... | ..... | 2 | ..... | 8 | ..... | SSW | 0 | 0 | Light | SW | Cloudy..... | |
| Michigan, Erie, Pa.....† | 29.89 | 759.2 | ..... | ..... | 41 | 5.0 | 91 | W | ..... | ..... | 4 | ..... | 8 | ..... | W | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Monocacy, Shanghai, China.....* | 30.20‡ | 767.1‡ | ..... | ..... | 43 | 6.1 | 83 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | NNW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongehela, Yokohama, Japan ....*... | 29.61‡ | 752.1‡ | ..... | ..... | 53 | 11.7 | 61 | SSE | ..... | ..... | 1 | ..... | 5 | ..... | S | 0 | 0 | ..... | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C..... | 30.15 | 765.8 | 59 | 15.0 | 58 | 14.4 | 88 | NE | 11 | 4.9 | ..... | ..... | 10 | ..... | S | 0.25 | 6.3 | ..... | ..... | Cloudy..... | |
| Onward, Callao, Peru.....†... | 30.04 | 763.0 | ..... | ..... | 67 | 19.4 | 95 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Palos, Tientsin, China..... | 30.22 | 767.6 | 34 | 1.1 | 36 | 2.2 | 80 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy ..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 45 | 7.2 | 84 | S | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Fair ..... | |
| Pensacola. Valparaiso, Chili..... | 29.97‡ | 761.2‡ | ..... | ..... | 63 | 17.2 | 83 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair ..... | |
| Powhatan. Porto Cabello, Venice ... | 29.98‡ | 761.6‡ | ..... | ..... | 79 | 26.1 | 82 | ENE | ..... | ..... | 1 | ..... | 10 | ..... | ENE | ..... | ..... | Long | N | Cloudy..... | |
| Quinnebaug, Port Mahon, Minorca Id | 30.11‡ | 764.8‡ | ..... | ..... | 59 | 15.0 | 59 | N | ..... | ..... | 2 | ..... | 2 | ..... | NW | ..... | ..... | Smooth | ..... | Clear ..... | |
| Ranger. N. 31° 48′ 24′, E. 128° 32′ 36″*. | 29.81‡ | 757.2‡ | ..... | ..... | 59 | 15.0 | 88 | NNW | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | Mod'ate | ..... | Raining..... | |
| Richmond, N. 32° 33′, E. 29° 58′..... | 30.02‡ | 762.5‡ | ..... | ..... | 65 | 18.3 | 53 | W | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair..... | |
| Rio Bravo, Brownsville, Texas..... | 30.00 | 762.0 | 68 | 20.0 | 66 | 18.9 | 100 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | SW | ..... | ..... | ..... | ..... | Fair ..... | |
| Santee, Annapolis, Md... ..... | 30.13‡ | 765.3‡ | ..... | ..... | 43 | 6.1 | 75 | S | ..... | ..... | 2 | ..... | 8 | ..... | W | 0 | 0 | ..... | ..... | Cloudy..... | |
| Saratoga, Hampton Roads, Va..... | 30.32 | 770.1 | ..... | ..... | 46 | 7.8 | 69 | S | ..... | ..... | 2 | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | D. clouds..... | |
| St. Louis, League Island, Pa ..... | 30.04 | 763.0 | 56 | 13.3 | 37 | 2.8 | 81 | Calm | 0 | 0 | ..... | ..... | 8 | ..... | WSW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Supply, N. 36° 21′, W. 72° 51′. ..... | 30.28‡ | 769.1‡ | ..... | ..... | 56 | 13.3 | 63 | ESE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Trenton Off "Island of Ischia," Italy.... | 29.89‡ | 759.2‡ | ..... | ..... | 62 | 16.7 | 66 | SSW | ..... | ..... | 2–3 | ..... | 5 | ..... | S;W | 0 | 0 | None | ..... | Fair ..... | |
| Tuscarora, Huatulco, Mexico..... | 29.95‡ | 760.7‡ | ..... | ..... | 78 | 25.6 | 78 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Long | S | Clear..... | |
| Wabash Boston, Mass..... | 30.21 | 767.3 | ..... | ..... | 29 | — 1.7 | 89 | W | 1 | 0.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Wyoming, Constantinople, Turkey | 29.73‡ | 755.1‡ | ..... | ..... | 55 | 12.8 | 93 | SW | ..... | ..... | 2–3 | ..... | 5 | ..... | SW | ..... | ..... | Smooth | SW | Fair..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | CHARACTER. | DIRECTION FROM— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | |
| S. S. Colima, N. 26° 28′, W. 114° 21′...† | | 30.05‡ | 763.3‡ | 59 | 15.0 | 88 | NW | | | 3–4 | | 10 | | ESE | 0 | Mod'ate | W | Misty | Capt. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Granada, Capt. Austin, N. 8° 25′, W. 84° 01′...† | | 30.12‡ | 765.0‡ | 80 | 26.7 | | Calm | | | 0 | | ks | | Calm | | Light | S | Squally | F. W. Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation, no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |
| **WHITE STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. | | | | | | | | | | | | | | | | | | | |
| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, Capt. L. Meyer, Hong-Kong, China...* | | 29.75‡ | 755.6‡ | 72 | 22.2 | 86 | Var. | | | 3 | | n | | E | | Smooth | NNE | Misty | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 32° 50′, E. 135° 00′...† | | 29.57‡ | 751.1‡ | 53 | 11.7 | | Var. | | | 5 | | hz | | Var. | | Heavy Confused | | Overcast | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:36 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |
| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 24° 17′, W. 79° 54′ | | 30.16‡ | 766.1‡ | 73.0 | 22.8 | 72 | ESE | | | 4 | | 8 | | W; E | | Mod'ate | E | Fine | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 5; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Lo'wr 0—10. | Upper. From— | Lower. From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Liverpool | | 30.45‡ | 773.4‡ | 52 | 11.1 | | NNW | | | 3 | | 4 | | W | 0 | | | Clear | Captain Sargent |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.**

Furnished by the cooperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

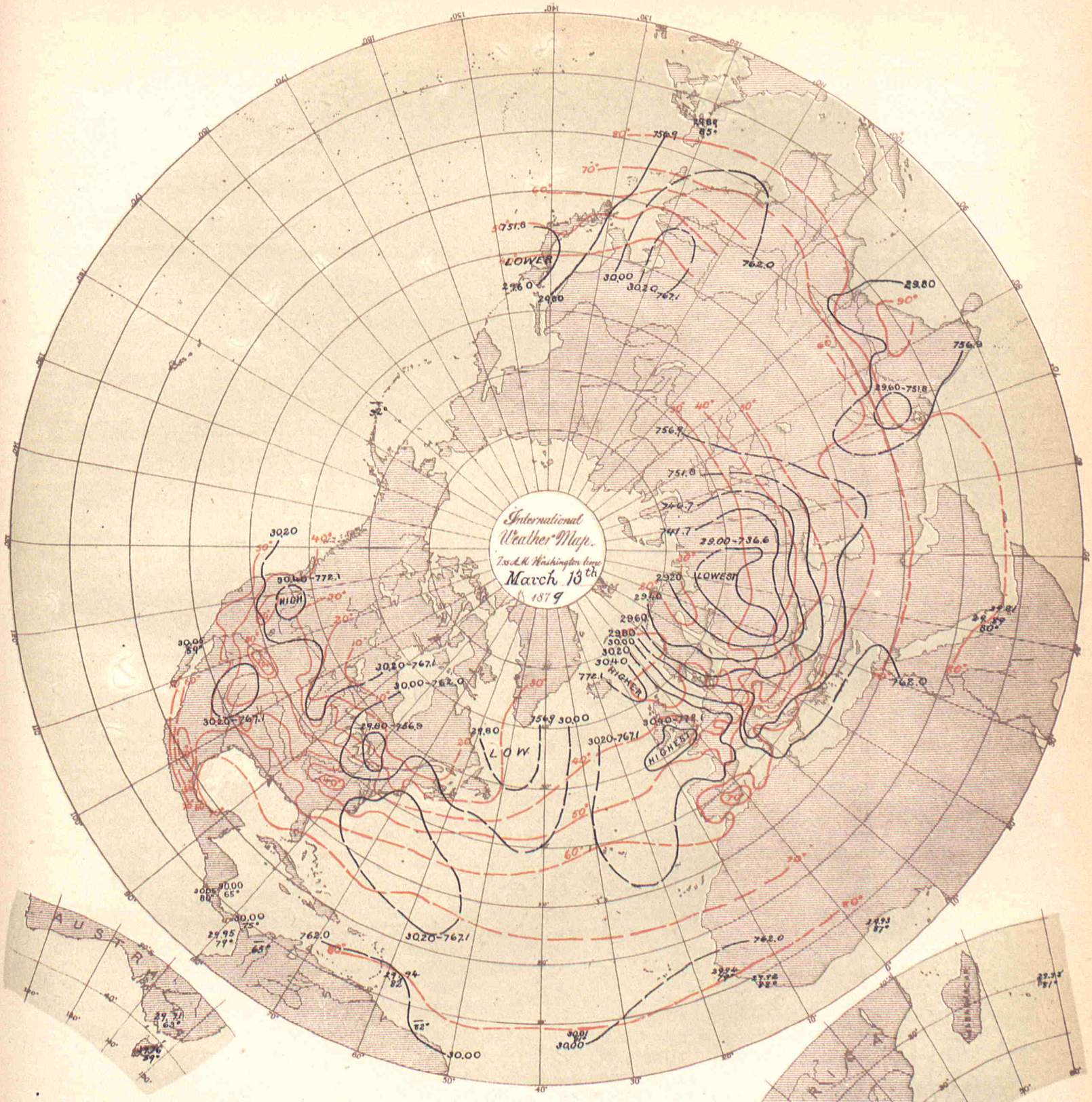
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 14, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSÉ mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:38 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:28 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | 30.10 | 764.6 | 61.7 | 16.5 | 77 | SW | | | 1 | | 5 | | | 0 | 0 | Cloudy | |
| Nemours | | | 30.01 | 762.2 | 67.5 | 19.7 | 62 | WNW | | | 1 | | 8 | | | 0 | 0 | Very cloudy | Kesxuche. |
| Algiers | | | 29.99 | 761.7 | 59.6 | 14.8 | 82 | NNE | | | 2 | | 0 | | | 0 | 0 | Clear | Touriliere. |
| La Calle | | | 30.03 | 762.8 | 61.3 | 16.3 | 76 | NNW | | | 3 | | 8 | | | 0 | 0 | Very cloudy | Foufrede. |
| Tunis | | | 29.98 | 761.5 | 65.1 | 18.4 | 47 | NNW | | | 4 | | 5 | | | 0 | 0 | Cloudy | Jacques. |
| Sfax | | | 30.09 | 764.2 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 30.03 | 762.8 | 64.8 | 18.2 | 19 | N | | | 1 | | 0 | | | 0 | 0 | Clear | Herbin. |
| Tebessa | | | 30.10 | 764.4 | 64.4 | 18.0 | 12 | W | | | 2 | | 2 | | | 0 | 0 | Fair | Watrin. |
| Geriville | | | 30.02 | 762.6 | 56.1 | 13.4 | 100 | S | | | 3 | | 0 | | | 0 | 0 | Clear | Brugniaux. |
| Laghouat | | | 30.06 | 763 4 | 58.8 | 13.2 | 51 | S | | | 3 | | 2 | | | 0 | 0 | Fair | Bertrand. |
| Biskra | | | 30.03 | 762.8 | 74.5 | 23.6 | 24 | WNW | | | 1 | | 2 | | | 0 | 0 | Fair | Chanvaux. |

Note—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.38 | 746.2 | 29.95 | 760.7 | 38.8 | 3.8 | 70 | SW | | | 4 | | 7 | | | 0.055 | 1.4 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.01 | 736.8 | 29.82 | 757.3 | 27.0 | — 2.8 | 94 | W | | | 4 | | 10 | | | 0.059 | 1.5 | | Dr. Wierzbiski |
| Eperies | 28.86 | 732.8 | 29.77 | 756.1 | 30.2 | — 1.0 | 47 | NW | | | 3 | | 6cs | | SE | 0.018 | 0.45 | | Julius Miklik. |
| Gratz | 28.71 | 729.3 | 30.02 | 762.6 | 32.0 | 0.0 | 37 | WNW | | | 4 | | 8 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.34 | 719.9 | 29.84 | 757.9 | 26.8 | — 1.8 | 56 | NW | | | 4 | | 10 | | | 0.008 | 0.2 | Snowing | Prof. A. Gottschling. |
| Kremsmünster | 28.65 | 727.7 | 30.07 | 763.8 | 27.0 | — 2.8 | 61 | WNW | | | 3 | | 5 | | | 0.236 | 6.0 | | Prof. C. Wagner. |
| Lemberg | 28.61 | 726.6 | 29.69 | 752.5 | 31.3 | — 0.4 | 90 | NW | | | 2 | | 8 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 29.81 | 757.1 | 29.93 | 760.1 | 46.0 | 7.8 | 88 | WSW | | | 1 | | 0 | | | 0 | 0 | | I. R. Hydrographic Office. |
| Szathmar | 29.35 | 745.5 | 29.84 | 757.8 | 32.2 | 0.1 | 98 | W | | | 5 | | 7 | | | 0.012 | 0.3 | | Julius Csics, S. J. |
| Szegedin | | | | | | | | | | | | | | | | | | | Karl Stancel. |
| Trieste | 29.84 | 757.9 | 29.94 | 760.5 | 49.4 | 8.0 | 37 | W | | | 1 | | 5 | | | 0.071 | 1.8 | | P. Busin. |
| Vienna | 29.24 | 742.8 | 30.00 | 762.0 | 26.2 | — 3.2 | 74 | NW | | | 4 | | 10 | | | | | Snowing | I. R. Central Met. Obs'y. |

Note—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | | | | | | | | | | | | | | | | | | | Royal Observatory |
| Furnes | | | | | | | | | | | | | | | | | | | M. E. de Cae. |
| Maeseyck | | | | | | | | | | | | | | | | | | | M. Pierrot. |

Note.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 1—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.04 | 763.0 | 30.14 | 765.5 | 32.0 | 0.0 | | WNW | 9 | 4.0 | | | 6 | | | 0.420 | 10.67 | D. clouds | W. Boswell. |
| Ardrossan | 30.14 | 765.5 | 30.15 | 765.8 | 35 | 1.7 | | NE | | | 1 | | 8 | | | | | Overcast | William McNeil. |
| Armagh, Observatory | | | 30.16 | 766.1 | 36.8 | 2.7 | | ESE | 3 | 1.3 | | | 10 | | | | | Snowing | S. Call. |
| Bidston, (Liverpool Obs.) | | | 30.13 | 765.3 | 33.8 | 1.0 | | ESE | 20 | 8.9 | | | 9 | | | | | Overcast | John Hartnup. |
| Bolton, (Sharples) | | | 30.13 | 765.3 | 32.7 | 0.4 | | SE | | | | | 10 | | | | | Snowing | Thomas Mackereth. |
| Bradford, Yorkshire | 29.76 | 755.9 | 30.15 | 765.8 | 33.5 | 1.0 | | W | | | 1 | | 5 | | | 0.08 | 2.0 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.93 | 760 2 | 29.96 | 761.0 | 81.5 | 27.5 | | NE | | | 2 | | 3 | | | | | D. clouds | Pvt. G. Surgener, A. H. C. |
| Cambridge, Observatory | | | 30.18 | 766.6 | 35.0 | 1.7 | | S | | | 1 | | 6 | | | | | Snowing | H. Todd. |
| Cardington | | | 30.16 | 766.1 | 35.6 | 2.0 | | SE | | | 1 | | 10 | | | | | Snow & fog | John McLaren. |
| Chatham, School M. E. | 30.08 | 764.0 | 30.21 | 767.3 | 36.7 | 2.6 | | N | | | 1 | | 10 | | | | | Snowing | Corpl. Daly, R. E. |
| Dartmoor | 28.65 | 727.7 | 30.18 | 766.6 | 40.0 | 4.4 | | NE | | | 4 | | 3 | | | | | Fine | Alexander Watt. |
| Donaghadee | 30.12 | 765.0 | 30.17 | 766.3 | 35 | 1.7 | | SE | | | 4 | | 10 | | | | | Raining | J. Mac Gowan. |
| Dover | 30.17 | 766.3 | 30.20 | 767.1 | 38 | 3.3 | | NE | | | 1 | | 7 | | | | | ¾ clouded | J. Costello. |
| Falmouth, Observatory | 30.00 | 762.0 | 30.24 | 768.1 | 46.7 | 8.2 | | WSW | | | 1 | | 2 | | | | | D. clouds | The Staff. |
| Fort Napier, (Natal) | 27.57 | 700.3 | 29.89 | 759.2 | 92.0 | 33.3 | | E | | | 2 | | 0 | | | | | Blue sky | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.70 | 754.4 | 29.93 | 760.2 | 87 | 30.6 | | W | | | 1 | | 3 | | | | | D. clouds | |
| Galway, Queen's College | | | 30.07 | 763.8 | 48 | 8.9 | | SW | | | 2 | | 10 | | | | | Overcast | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.91 | 759.7 | 29.96 | 761.0 | 55.6 | 13.1 | | W | | | 3 | | 8 | | | | | Snowing | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.94 | 760.5 | 30.14 | 765.5 | 30.2 | — 1.0 | | NNE | | | 3 | | | | | | | Overcast | D. G. Maclean. |
| Great Yarmouth | 30.19 | 766.8 | 30.20 | 767.1 | 35 | 1.7 | | WSW | | | 2 | | 5 | | | | | D. clouds | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.02 | 762.5 | 30.20 | 767.1 | 36.6 | 2.6 | | SW | | | 1 | | 10 | | | | | Snowing | The Staff, for G. B. Airy. |
| Guernsey | 30.02 | 762.5 | 30.25 | 768.3 | 42 | 5.6 | | SSW | | | 1 | | 7 | | | | | Blue sky | Dr. S. E. Hoskins, F.R.S. |
| Helston | 30.19 | 766.8 | 30.31 | 769.9 | 49 | 9.4 | | SW | | | 2 | | 2c | | | 0 | 0 | Fine | M. P. Moyle. |
| Holyhead | 30.04 | 763.0 | 30.09 | 764.3 | 43 | 6.1 | | N | | | 3 | | 10 | | | | | Misty | John Tilston. |
| Jersey | 29.99 | 761.7 | 30.29 | 769.4 | 41.0 | 5.0 | | WSW | | | 1 | | 7 | | | | | Gloomy | J. Fisher. |
| Kew, Observatory | 30.16 | 766.1 | 30.20 | 767.1 | 36.4 | 2.4 | | S | 9 | 4.0 | | | 10 | | | | | Snowing | The Meteorological Of. |
| Leicester, Museum | 29.90 | 759.4 | 30.17 | 766.3 | 33.5 | 1.0 | | SE | | | 1 | | 10 | | | 0.03 | 0.8 | Snowing | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.86 | 758.4 | 29.93 | 760.2 | 60 | 15.6 | | NW | | | 2 | | 4k | | | | | D. clouds | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 30.03 | 762.8 | 30.13 | 765.8 | 32 | 0.0 | | Calm | | | 0 | | 2 | | | | | ½ clouded | W. D. Penny. |
| Nassau, (Bahamas) | | | 30.04 | 763.0 | 76.5 | 24.7 | | SE | | | 1 | | 8 | | | | | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.99 | 761.7 | 30.19 | 766.8 | 33.6 | 0.9 | | SE | | | 1 | | 10n;d | | ESE | 0.079 | 2.01 | Snowing | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.61 | 752.1 | 30.16 | 766.1 | 32.6 | 0.3 | | E | | | 1 | | 10 | | | | | Snowing | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | | | 30.17 | 766.3 | 34 | 1.1 | | S | | | 1 | | 10 | | | | | Rain & snow | H. E. Bellamy. |
| Plymouth | 30.15 | 765.8 | 30.22 | 767.6 | 44.8 | 7.1 | | SW | | | 2 | | 10 | | | | | Overcast | John Merrifield. |
| Roche's Point | 30.12 | 765.0 | 30.17 | 766.3 | 51 | 10.6 | | WSW | | | 3 | | 10 | | | | | Overcast | W. Kennedy. |
| Saint Ann's Head | 29.98 | 761.5 | 30.15 | 765.8 | 45 | 7.2 | | W | | | 5 | | 10 | | | | | Overcast | John C. Walker. |
| Sandwick Manse, (Orkneys | | | 30.08 | 764.0 | 32 | 0.0 | | NW | 15 | 6.7 | | | 7 | | | | | Snowing | Dr. Hoskins. |
| Scutari, Cemetery, (Turkey | | | 29.84 | 757.9 | 37.2 | 2.9 | | NE | | | 2 | | 10 | | | | | Raining | W. H. Lyne. |
| Sheffield | 29.90 | 759.4 | 30.19 | 766.8 | 33.5 | 1.0 | | ESE | | | 1 | | 10 | | | 0.07 | 1.8 | Overcast | W. F. Cooper. |
| Silloth Rectory | 30.14 | 765.5 | 30.16 | 766.1 | 39.5 | 4.2 | 68 | E | | | 3 | | 5 | | | 0.104 | 2.64 | D. clouds | Francis Redford, A. M |
| Stonyhurst, Observatory | 29.74 | 755.4 | 30.15 | 765.8 | 35.2 | 1.8 | | SE | | | 1 | | 10 | | | | | Misty | Rev. S. J. Perry. |
| Stratfield Turgiss | 29.99 | 761.7 | 30.21 | 767.3 | 37.7 | 3.2 | | SW | | | 1 | | 10 | | | | | Overcast | C.H. Griffith, F.M.S. |
| Thurso | 30.06 | 763.5 | 30.12 | 765.0 | 31 | — 0.6 | | WNW | | | 2 | | 10 | | | | | Snowing | John Trotter. |
| Truro, Royal Institution | 30.14 | 765.5 | 30.19 | 766.8 | 53 | 11.7 | | SW | | | 4 | | 6 | | | | | D. clouds | W. Newcombe. |
| Valencia, Observatory | 30.14 | 765.5 | 30.17 | 766.3 | 49 8 | 9.9 | | SSW | 24 | 10.7 | | | 10 | | | | | D. clouds | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.98 | 761.5 | 30.01 | 762.2 | 79.9 | 26.6 | 52 | S | 17 | 7.6 | | 0 | 0 | | | 0 | 0 | Fine | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | | | 29.32 | 744.7 | 62.0 | 16.5 | 94 | SW | | | 2 | | 10kn | | | 1.55 | 39.4 | Rainy | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | | | 30.18 | 766.6 | 32.8 | 0.4 | | W | | | 2 | | 0 | | | 0.42 | 10.7 | Hazy | Andrew Gibb. |
| Mauritius, Observatory | 29.80 | 756.9 | 29.99 | 761.8 | 81.2 | 27.3 | 63 | ESE | 19.0 | 8.5 | | 0 | 2 | | ESE | 0.02 | 0.5 | Squally | C. Meldrum. |
| Melbourne, Observatory | 29.62 | 752.3 | 29.71 | 754.6 | 61.3 | 16.3 | 76 | W | 15 | 6.7 | | | 10 | | | 0.04 | 1.0 | Dull | R. L. J. Ellery. |
| Monach L't-house, (Hebrides | | | 30.08 | 764.0 | 34 | 1.1 | | SE | | | 4 | 10 | 5 | SE | | 0 | 0 | | J. Youngclause. |
| North Unst, (Shetland Is.) | | | 29.94 | 760.5 | 28 | — 2.2 | | N | | | 6 | | 5 | | | | | Snowing | Robert Burnet. |

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series and 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day,) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day,) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 1—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 35° 54′, E. 14° 30′ | | | 29.93‡ | 760.2‡ | 61.1 | 16.2 | | NNW | | | 3 | | 4 | | | | | D. clouds | Capt. W. J. L. Wharton. |
| Brig Alliance | | | | | | | | | | | | | | | | | | | Capt. W. Scott. |
| S. S. Amanda, N. 25° 21′, E. 33° 11′ | | | 30.04‡ | 763.0‡ | 70 | 21.1 | | NW | | | 5 | | 1 | | | | | Blue sky | Capt. B. Boyes. |
| Barque Belle Isle, N. 29° 24′, W. 79° 15′ | | | 29.94‡ | 760.5‡ | 73 | 22.8 | | SW | | | 6 | | 10 | | | 5 | SW | Showery | Capt. A. J. Brown. |
| Ship British Commodore, N. 39° 10′, W. 55° 00′ | | | 30.47 | 773.9 | | | | E | | | 2 | | 2 | | | 3 | N | Blue sky | Capt. J. W. Thorne. |
| —— City of Agra, N. 9° 19′, W. 37° 58′ | | | 30.01‡ | 762.2‡ | 80.5 | 26.9 | | ENE | | | 5 | | 4 | | | | | D. clouds | Capt. Thos. Young. |
| Barque Commewyne, N. 27° 56′ W. 60° 28′ | | | 30.28‡ | 769.1‡ | 71.5 | 21.9 | | E | | | 4 | | 3 | | | | | D. clouds | Capt. A. Buchan. |
| Barque Fedalina, Off Start Point, Eng | | | 30.24 | 768.1 | 50 | 10.0 | | SW | | | 3 | | 5 | | | | | D. clouds | Capt. H. L. Fox. |
| Barque Mertole, N. 49° 41′, W. 9° 23′ | | | 30.22‡ | 767.6‡ | 48.8 | 9.3 | | SE | | | 2 | | 1 | | | | | Blue sky | Capt. E. W. Turner. |
| S. S. Nizam | | | | | | | | | | | | | | | | | | | Capt. Barlow. |
| S. S. Strathleven, N. 16° 26′, E. 41° 12′ | | | 29.82‡ | 757.4‡ | 79 | 26.1 | | NNW | | | 3 | | 10 | | | | | Overcast | Capt. C. W. Pearson. |
| S. S. Wyberton | | | | | | | | | | | | | | | | | | | Capt. W. R. McMontry. |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the cooperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upper. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.28 | 667.5 | 30.00 | 762.0 | 64.4 | 18.0 | 95 | Calm | ..... | ..... | 0 | 2cs | ..... | ..... | ..... | Inap. | Inap. | ..... | Federico Maison |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.65 | 753.1 | 29.70 | 754.3 | 34.5 | 1.4 | 56 | NW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 29.85 | 758.1 | 29.87 | 758.6 | 34.0 | 1.1 | 87 | WNW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.66 | 753.4 | 29.71 | 754.5 | 34.7 | 1.5 | 91 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Faröe) | 30.07 | 763.8 | 30.11 | 764.7 | 24.6 | — 4.1 | 84 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Vestervig | 29.60 | 751.7 | 29.76 | 756.0 | 33.1 | 0.6 | 85 | NW | ..... | ..... | 7 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.73 | 755.1 | 30.28 | 769.1 | 39.6 | 4.2 | 93 | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Collignon, Director. |
| Amiens, Normal School | 30.15 | 765.8 | 30.26 | 768.7 | 45.3 | 7.4 | 83 | N | ..... | ..... | 3 | ..... | 8 | ..... | E | 0 | 0 | Very cloudy | Bonvallet, Director. |
| Avignon, Normal School | 29.91 | 759.6 | 29.98 | 761.6 | 52.9 | 11.6 | 36 | N | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | M. Giraud, Director. |
| Bar-sur-Seine | 29.67 | 753.5 | 30.24 | 768.2 | 40.8 | 4.9 | 54 | NE | ..... | ..... | 1 | ..... | 8cn | ..... | ..... | 0 | 0 | Very cloudy | V. Saillard, Director. |
| Beauvais, Normal School | 29.95 | 760.7 | 30.24 | 768.2 | 45.1 | 7.3 | 64 | NNW | ..... | ..... | 1 | ..... | 5 | ..... | NNW | 0 | 0 | Cloudy | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.34 | 745.1 | 30.27 | 768.8 | 39.7 | 4.3 | 48 | NE | ..... | ..... | 2 | ..... | 5 | ..... | N | 0 | 0 | Cloudy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.35 | 745.4 | 30.26 | 768.7 | 42.4 | 5.8 | 56 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Marlot, Director. |
| Bourges, Normal School | 29.72 | 754.8 | 30.29 | 769.4 | 41.4 | 5.2 | 100 | NE | ..... | ..... | 8 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Waquet, Director. |
| Brest, Naval Observatory | 29.94 | 760.6 | 30.19 | 766.8 | 53.6 | 12.0 | 61 | SSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | M. de Rermaree, Director |
| Carcassonne, Normal School | 29.65 | 753.0 | 30.06 | 763.5 | 59.4 | 15.2 | 29 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | September, Director. |
| Caen, Normal School | 30.22 | 767.6 | 30.30 | 769.5 | 40.2 | 7.9 | 44 | NNE | ..... | ..... | 1 | ..... | 8 | ..... | NW | 0 | 0 | Very cloudy | M. Lair, Director. |
| Chartres, Normal School | 29.57 | 751.1 | 30.15 | 765.9 | 44.6 | 7 | 79 | SW | ..... | ..... | 1 | ..... | 10 | ..... | NE | 0 | 0 | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.98 | 761.8 | 30.32 | 770.1 | 37.6 | 3.1 | 76 | E | ..... | ..... | 3 | ..... | 8 | E | E | 0 | 0 | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.80 | 731.6 | 30.20 | 767.0 | 44.2 | 6.8 | 83 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0.051 | 1.3 | ..... | Alluard, Director. |
| Commercy, Normal School | 29.37 | 746.0 | 30.28 | 769.1 | 32.9 | 0.5 | 92 | NE | ..... | ..... | 1 | ..... | 5kn | ..... | NE | 0 | 0 | Cloudy | Dr. Coulet, Director. |
| Commune de Grésque* | 28 80 | 731.4 | 29.94 | 760.4 | 54.1 | 12.3 | 63 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Kina, Director. |
| Grenoble, Normal School | 29.34 | 745.3 | 30.13 | 765.2 | 47.8 | 8.8 | 80 | NW | ..... | ..... | 3 | ..... | 1 | N | ..... | 0 | 0 | Slightly cl'dy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 30.01 | 762.2 | 30.23 | 767.8 | 47.1 | 8.4 | 50 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Mouillot, Director |
| Le Mans, Normal School | 29.90 | 760.9 | 30.28 | 769.1 | 41.9 | 5.5 | 49 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.32 | 744.6 | 30.26 | 768.7 | 40.8 | 4.9 | 41 | NE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Baudry, Director. |
| Lorient, Naval Observatory | 30.17 | 766.3 | 30.27 | 768.8 | 44.6 | 7.0 | 69 | SSE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galsin, Director |
| Mirecourt, Normal School | 29.18 | 741.1 | 30.28 | 769.2 | 30.2 | — 1 | 88 | NNW | ..... | ..... | 1 | ..... | n | ..... | SSE | 0 | 0 | ..... | M. Barbier, Director. |
| Nîmes, Normal School | 29.82 | 757.4 | 30.02 | 762.6 | 55.4 | 13 | 26 | NW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Boyer, Director. |
| Privas, Normal School | 28.99 | 736.4 | 30.08 | 764.1 | 46.4 | 8 | 34 | N | ..... | ..... | 4 | ..... | ..... | N | N | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 25 12 | 638.1 | ..... | ..... | 21.2 | — 6.0 | 95 | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0.205 | 5.2 | Clear | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.17 | 766.2 | 30.20 | 767.0 | 49.8 | 9.6 | 40 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Lt. Decante, Director. |
| Rouen, Normal School | 30.15 | 765.7 | 30.23 | 767.9 | 45.0 | 7.2 | 54 | WNW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0 | 0 | Cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 30.21 | 767.4 | 30.24 | 768.2 | 46.9 | 8.3 | 39 | SSW | ..... | ..... | 2 | ..... | 1 | SW | SW | 0 | 0 | Clear | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 30.07 | 763.7 | 30.23 | 767.9 | 46.6 | 8.1 | 50 | NW | ..... | ..... | 2 | ..... | ..... | ..... | NW | 0 | 0 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.94 | 735.4 | 30.04 | 762.9 | 53.6 | 12 | 54 | SW | ..... | ..... | 2 | ..... | 2 | SW | W | 0 | 0 | Slightly cl'dy | T. Huguet, Director. |
| Versailles Observatory | 29.78 | 756.2 | 30.28 | 767.7 | 43.9 | 6.6 | ..... | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.47 | 748.6 | 30.21 | 767.2 | 44.6 | 7 | 86 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 30.00 | 761.9 | 30.02 | 762.6 | 77.0 | 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 29.58 | 751.2 | 30.21 | 767.4 | 44.4 | 6.9 | 88 | NNE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 24.78 | 629.5 | 30.10 | 764.5 | 48.7 | 6.6 | 60 | E | 15.0 | 6.7 | ..... | ..... | 2 | ..... | SE | 0 | 0 | ..... | A. Cave. |
| Nice | ..... | ..... | 29.91 | 759.6 | 59.9 | 15.5 | 37 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.96 | 760.9 | ..... | ..... | 44.2 | 6.8 | 44 | NNW | ..... | ..... | 3 | ..... | 8 | ..... | NNW | 0 | 0 | ..... | Marié Davy, Director. |
| Perpignan | 29 94 | 760.5 | 30.05 | 763.2 | 57.9 | 14.4 | 19 | NE | 7.4 | 3.3 | ..... | ..... | 1 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.46 | 570.3 | ..... | ..... | 28.2 | — 2.1 | ..... | N | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Fair | Gen'l de Nansouty. |
| Toulouse, Observatory | 29.41 | 747.1 | 30.14 | 765.5 | 48.2 | 9.0 | 65 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | M. Mercadier Juller. |
| Tours | 30.04 | 763.0 | 30.24 | 768.0 | 43.5 | 6.4 | 51 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.30 | 769.7 | 30.33 | 770.4 | 39.9 | 4.4 | 68 | SE | 5.4 | 2.4 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens, S. J. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and in the official series the amount in general terms, except Clermont-Ferrand and Grenasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt apparently gives cloud direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grésque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-10 | Clouds. Amount. Up'er 0-10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.20 | 741.8 | 30.05 | 763.3 | 31.5 | — 0.3 | 67 | W | | | 6 | | 5 | W | | 0.098 | 2.5 | Snowing | Prof. Dr. Hoh. |
| Berlin | 29.57 | 751.0 | 29.74 | 755.5 | 35.2 | 1.8 | 64 | NW | | | 5 | | 5 | | | Inap. | Inap. | Light snow | Prof. Arndt. |
| Breslau | 29.84 | 745.3 | 29.87 | 758.7 | 27.5 | — 2.5 | 70 | NW | | | 3 | | 4 | | | | | Snowy | Royal University Obs'y |
| Carlsruhe | 29.76 | 755.8 | 30.21 | 767.2 | 36.0 | 2.2 | 67 | NW | | | 2 | | 5 | NW | | 0.012 | 0.3 | | Albert Sens. |
| Cassel | 29.45 | 748.0 | 30.06 | 763.4 | 33.4 | 0.8 | 79 | WNW | | | 7 | | 4 | WNW | | 0.017 | 0.42 | Snowing | Dr. H. Möhl. |
| Crefeld | 30.00 | 762.0 | 30.16 | 766.1 | 35.2 | 1.8 | 48 | N | | | 4 | | 7k | | | 0.12 | 3. | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.64 | 752.8 | 30.01 | 762.2 | 36 3 | 2.4 | | NW | | | 3 | | 6 | | | 0.024 | 0.6 | | Physical Society. |
| Friedrichshafen | 28.71 | 729.3 | 30.11 | 764.8 | 27.7 | — 2.4 | 87 | NNW | | | 7 | | 10 | NNW | | | | Snowing | M. Wilhelm. |
| Hamburg | 29.88 | 759.0 | 29.96 | 760.9 | 33.4 | 0 8 | 94 | NW | | | 5 | | 6k | | | 0.028 | 0.7 | Squally | Captain F. Hegemann. |
| Kiel | 29.87 | 758.8 | 29.89 | 759.2 | 34.0 | 1.1 | 63 | WNW | | | 2 | | 4 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.45 | 747.9 | 29.53 | 750.1 | 28.4 | — 2.0 | 75 | W | | | 6 | | 4 | | | 0.075 | 1.9 | Snowing | Prof. E. Luther. |
| Köslin | | | 29.67 | 753.7 | 31.5 | — 0.3 | | N | | | 4 | | 3 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.69 | 751.9 | 30.04 | 763.1 | 31.3 | — 0.4 | 54 | WNW | | | 4 | | 6 | NW | | | | Snowy | Prof. Bruhns, Privy Counsellor. |
| Memel, Naval School | 29.39 | 746.4 | 29.43 | 747.5 | 32 0 | 0.0 | 56 | NW | | | 7 | | 9s | | | | | | Skalweit. |
| Neufahrwasser | 29.60 | 751.7 | 29.61 | 752.1 | 30.7 | — 0.7 | 71 | WNW | | | 6 | | 10 | | | | | Snowing | A. Lothes. |
| Posen | 29.57 | 751.0 | 29.87 | 758.7 | 29.5 | — 1.4 | 83 | NW | | | 7 | | 1 | | | 0.063 | 1.6 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.68 | 753.9 | 30.26 | 768.6 | 35.6 | 2.0 | 45 | NNE | | | 2 | | 5 | NW | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 29.21 | 742.0 | 30.14 | 765.6 | 31.1 | — 0.( | 50 | NW | | | 1 | | 2 | W | | 0.091 | 2.3 | Snowing | Prof. Schoder. |
| Treves, (Trier) | | | | | | | | | | | | | | | | | | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.56 | 725.8 | 30.18 | 766.5 | 26.4 | — 3.1 | 82 | NW | 20 | 9 | | | 5k | | NW | 0.146 | 3.7 | | Dr. Van Bebber. |
| Wustrow, Naval School | 29.79 | 756.7 | 29.82 | 757.3 | 32.9 | 0.5 | 94 | NW | | | 5 | | 2k | | | 0.012 | 0.3 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.39 | 746.5 | 29.78 | 756.4 | 66.0 | 18.9 | | SW | | | 1.0 | | | | | | | ½ clouded | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.78 | 756.3 | 29.83 | 757.6 | 75.6 | 24.2 | 69 | N | 11 | 4.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.29 | 743.9 | 29.76 | 755.9 | 82.2 | 27.9 | 36 | W | 16.5 | 7.4 | | | 1 | W | | 0 | 0 | D. clouds | |
| Bombay | 29.82 | 757.5 | 29.86 | 758.5 | 80.8 | 26.8 | 78 | WNW | 9 | 4.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.03 | 737.4 | 29.80 | 756.8 | 66.6 | 19.2 | 64 | N | 2.1 | 0.9 | | | 8 | | W | 0 | 0 | Cloudy | |
| Belgaum | 27.30 | 693.5 | 29.80 | 756.8 | 85.2 | 29.6 | 53 | W | 15.0 | 6.7 | | | 1 | | | 0 | 0 | | |
| Roorkee | 28.94 | 735.1 | 29.87 | 758.6 | 64.5 | 18.2 | 84 | SE | 3.6 | 1.6 | | | 7 | | | 0.51 | 13.0 | | |
| Agra | 29.25 | 742.9 | 29.82 | 757.3 | 76.7 | 24.8 | 57 | NE | | | | | | | | 0 | 0 | | |
| Nagpur | 28.72 | 729.4 | 29.74 | 755.3 | 92.1 | 33.4 | 18 | W | 3.4 | 1.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.41 | 747.1 | 29.79 | 756.7 | 76.3 | 24.6 | 53 | NE | 2.7 | 1.2 | | | 10 | | | 0 | 0 | Overcast | |
| Allahabad | 29.43 | 747.6 | 29.74 | 755.4 | 85.9 | 29.9 | 36 | NNE | 2.1 | 0.9 | | | 10 | | | 0.02 | 0.5 | Overcast | |
| Patna | 29.57 | 751.1 | 29.75 | 755.7 | 83.6 | 28.7 | 43 | W | 2.1 | 0.9 | | | 8 | W | W | 0 | 0 | D. clouds | |
| Hazaribagh | 27.85 | 707.5 | 29.85 | 758.3 | 84.6 | 29.2 | 24 | SSW | 8.7 | 3.9 | | | 5 | | W | | | Showery | |
| Cuttack | 29.72 | 754.8 | 29.80 | 756.8 | 89.1 | 31.7 | 46 | S | 3.5 | 1.6 | | | 7 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.77 | 756.2 | 29.79 | 756.7 | 80.3 | 26.8 | 54 | SSE | 7.0 | 3.1 | | | 5 | | W | 0 | 0 | D. clouds | |
| Goalpara | 29.33 | 744.9 | 29.72 | 754.8 | 82.3 | 27.9 | 32 | WNW | 3.1 | 1.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.68 | 753.8 | 29.77 | 756.1 | 80.9 | 27.2 | 82 | Calm | 4.9 | 2.2 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.44 | 747.8 | 29.78 | 756.4 | 73.8 | 23.2 | 79 | ENE | 4.3 | 1.9 | | | 10 | W | W | 0.18 | 4.6 | D. clouds | |
| Jubbulpore | 28.39 | 721.0 | 29.72 | 755.0 | 89.7 | 32.1 | 17 | W | 5.6 | 2.5 | | | 7 | E | | 0 | 0 | D. clouds | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Reduced to sea-level. Inches. | Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.49 | 749.1 | 29.91 | 759.7 | 46.4 | 8.0 | 42 | SW | 4.3 | 1.9 | | | 9 | | | 0 | 0 | | Prof. Giovanni Clodig. |
| Milan | 29.38 | 746.2 | 29.90 | 759.5 | 52.3 | 11.3 | 56 | N | | | 6 | | 0 | | | 0 | 0 | | Prof. Schiaparelli. |
| Padua | 29.80 | 756.8 | 29.91 | 759.6 | 47.1 | 8.4 | 43 | SSW | 8.1 | 3.6 | | | 5 | SW | | 0 | 0 | | Prof. Dott. Lorenzoni |
| Moncalieri | 29.01 | 736.9 | 29.93 | 760.2 | 52.0 | 11.1 | 25 | S | 7.4 | 3.3 | | | 0 | | | 0 | 0 | | Prof. P. F. Denza. |
| Genoa | 29.68 | 753.9 | 29.87 | 758.8 | 57.2 | 14.0 | 10 | NE | 6.3 | 2.8 | | | 0 | | | 0 | 0 | | Prof. G. M. Garibaldi. |
| Mondovi | 27.95 | 709.9 | 29.88 | 759.0 | 48.6 | 9.2 | 21 | SE | | | 2 | | 0 | | | 0 | 0 | | Prof. D. C. Bruno. |
| Pesaro | 29.88 | 758.9 | 29.93 | 760.1 | 48.7 | 9.3 | 38 | NE | 13.0 | 5.8 | | | 0 | | | 0 | 0 | | Prof. Luigi Guidi. |
| Florence | 29.62 | 752.3 | 29.88 | 758.9 | 56.3 | 13.5 | 28 | NE | | | 4 | | 0 | | | 0 | 0 | | Cav. F. Meucci |
| Leghorn | 29.77 | 756.1 | 29.85 | 758.3 | 57.2 | 14.0 | 32 | W | | | 2 | | 1 | | | 0 | 0 | | Prof. P. Monte. |
| Rome | 29.64 | 752.9 | 29.82 | 757.4 | 60.1 | 15.6 | 70 | N | 1.8 | 0.8 | | | 2 | | | 0 | 0 | | Prof. P. S. Ferrari. |
| Lecce | 29.59 | 751.6 | 29.85 | 758.1 | 48.9 | 9.4 | 74 | NE | 15.4 | 6.9 | | | 8 | NE | | 0.024 | 0.6 | | Prof. C. De Giorgi. |
| Cosenza | 28.95 | 735.4 | 29.85 | 758.2 | 57.0 | 13.9 | 77 | SW | 0 | 0 | | | 10 | | | 0.130 | 3.3 | | Prof. D. Conti. |
| Cagliari | 29.68 | 753.8 | 29.87 | 758.7 | 56.5 | 13.6 | 50 | W | | | 4 | | 9 | NW | | 0 | 0 | | Prof. A. Pacinotti. |
| Palermo | 29.62 | 752.3 | 29.87 | 758.8 | 61.9 | 16.6 | 46 | WSW | 11.2 | 5.0 | | | 9 | WSW | | 0 | 0 | | Prof. G. Cacciatore. |
| Syracuse | 29.74 | 755.4 | 29.81 | 757.2 | 62.6 | 17.0 | 53 | SE | 6.8 | 2.8 | | | 7 | W | | 0 | 0 | | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.31 | 744.4 | 29.86 | 758.5 | 54.9 | 12.7 | 66 | NE | 0.7 | 0.3 | | | 10 | | | 0 | 0 | | Prof. F. Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 558 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.03 | 762.7 | 30.05 | 763.3 | 41.3 | 5.2 | 61 | SW | 5.9 | 2.6 | | | 4ck;s | | NNW | 0 | 0 | Fair | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.97 | 761.2 | 30.18 | 766.6 | 43.2 | 6.2 | 53 | WNW | 1.6 | 0.7 | | 0 | 0 | | | 0 | 0 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.64 | 752.8 | 29.71 | 754.6 | 39.9 | 4.4 | 51 | N | 12.1 | 5.4 | | | 1ck | | | 0 | 0 | Fair | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | | | | | | | | | | | | | | | | | | | P. Ceballos. |
| Guadalajara | 26.08 | 637.0 | 30.17 | 766.3 | 44.6 | 7.0 | 54 | NW | | | 1 | 0 | 0 | | | 0 | 0 | Clear | Prof. L. Perez. |
| Leon | 24.43 | 620.7 | 30.05 | 763.3 | 55.9 | 13.3 | 68 | NW | | | 1 | 0 | 0 | | | 0 | 0 | Foggy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.08 | 586.3 | 30.17 | 766.2 | 49.6 | 9.8 | 72 | Calm | 0 | 0 | | 0 | 2s | | | 0 | 0 | | The Staff. |
| Pabellon, (Aguascalientes) | | | | | 48.7 | 9.3 | 69 | Calm | | | 0 | 0 | 0 | | | 0 | 0 | Clear | M. V. de Leon, M. E. |
| Tlacotalpam | 29.99 | 761.8 | 30.00 | 762.0 | 74.3 | 23.5 | 90 | SW | | | 1 | 9 | 5 | NE | SE | 0 | 0 | Threatening | M. M. Chazaro. |
| San Luis Potosi | 24.21 | 614.3 | 30.19 | 766.7 | 55.0 | 12.8 | 22 | ESE | | | 1 | 10 | 0 | SE | | 0 | 0 | Covered | G. Barroeta, M. D. |
| Vera-Cruz | | | | | | | | | | | | | | | | | | | Prof. J. Rossell. |
| Zacatecas | | | | | | | | | | | | | | | | | | | |
| Puebla, (Catholic Institute) | 23.43 | 595.2 | 30.20 | 767.0 | 49.3 | 9.6 | 6 | Calm | 0 | 0 | | | 4k | | WSW | 0.00 | 0.01 | Light clouds | Prof. P. Spina. |
| Durango | | | | | | | | | | | | | | | | | | | M. V. de Leon, C. E. |
| Colima | 28.41 | 721.5 | 30.07 | 764.1 | 72.3 | 22.4 | 65 | NE | | | 2 | 0 | 0 | | | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | | | | | | | | | | | | | | | | | | | Antonio Guerra y Guerra. |

NOTE.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,893 m., or 6,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,201m., or 7,220.8 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.24 | 768.0 | 30.24 | 768.0 | 37.6 | 3.1 | | W | | | | | | | | 0.071 | 1.8 | | |
| Groningen | 30.04 | 763.1 | 30.10 | 764.4 | 33.1 | 0.6 | | NNW | | | 3 | | | | | 0.039 | 1.5 | | |
| Helder | 30.15 | 765.7 | 30.15 | 765.7 | 33.3 | 0.7 | | WNW | | | 4 | | | | | 0.079 | 2.0 | | |
| Hellevoetsluis | 30.20 | 767.1 | 30.20 | 767.1 | 38.7 | 3.7 | 85 | WNW | | | 2 | | | | | | | | |
| Utrecht | 30.16 | 765.7 | 30.19 | 766.9 | 40.1 | 4.5 | 43 | W | | | 2 | | 5 | | | 0.012 | 0.3 | Cloudy | H. v. d. Brink. |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.78 | 756.5 | 29.84 | 757.9 | 28.8 | — 1.8 | 80 | N | 22.6 | 10.1 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.50 | 749.4 | 29.54 | 750.4 | 27.3 | — 2.6 | 58 | ESE | 9 | 4 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.43 | 747.4 | 29.58 | 751.2 | 33.4 | 0.8 | 61 | NNW | 9 | 4 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.68 | 753.8 | 29.72 | 754.9 | 27.1 | — 2.7 | 57 | NE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.04 | 763.1 | 30.24 | 768.0 | 58.6 | 14.8 | 80 | WSW | 6.3 | 2.8 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.98 | 736.1 | 30.02 | 762.4 | 56.7 | 13.7 | 71 | SSW | 3.1 | 1.4 | ..... | ..... | 9 | SSW | ..... | 0.067 | 1.7 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.03 | 762.7 | 30.11 | 764.9 | 64.4 | 18.0 | 66 | SE | 6.3 | 2.8 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.65 | 753.1 | 30.01 | 762.3 | 56.7 | 13.7 | 71 | ENE | 8.7 | 3.9 | ..... | ..... | 10 | ..... | ..... | 0.051 | 1.3 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.15 | 765.9 | 30.23 | 767.7 | 62.2 | 16.8 | 68 | NNE | 16.1 | 7.2 | ..... | ..... | 5 | ..... | ..... | 0.228 | 5.8 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| Bartaolomew Dias | ..... | ..... | ..... | A. G. da Silva Costa Com'd.t. |
| D. Fernando | ..... | ..... | ..... | A.M.de Sande,Com'd't. |
| India | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | ..... | ..... | ..... | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | J.T.d'Olivera, Com'd't. |
| Rio Lima, Capt. S. C. da SilvaCosta, N. 11° 42′. W. 16° 09′ | ..... | ..... | ..... | A. Ferriera, 2d Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | ..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo. Macao, China | ..... | ..... | ..... | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeirá gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.23 | 742.5 | 29.67 | 753.7 | 29.3 | — 1.5 | 64 | W | 16 | 7 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 28.95 | 735.2 | 29.38 | 746.2 | 27.9 | — 2.3 | 7 | NW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light snow. | Astronomical Obs. |
| Dorpat | 29.04 | 737.6 | 29.29 | 744.0 | 19.6 | — 6.9 | 84 | WNW | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light snow. | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.21 | 742.0 | 29.23 | 742.4 | 19.8 | — 6.8 | 84 | N | 4 | 2 | ..... | ..... | 7ks;n | ..... | ..... | ..... | ..... | Light clouds | Central Physical Obs. |
| Kieff | 28.76 | 730.6 | 29.42 | 747.3 | 26.6 | — 3.0 | 76 | WNW | 22 | 10 | ..... | ..... | 3k;ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.63 | 752.5 | 29.70 | 754.3 | 36.3 | 2.4 | 33 | NW | 45 | 20 | ..... | ..... | 5kn | ..... | ..... | ..... | ..... | ..... | Kurdukof. |
| Kerch | 29.76 | 756.0 | 29.78 | 756.5 | 35.6 | 2.0 | 54 | NW | 11 | 5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 28.58 | 725.9 | 29.14 | 740.2 | 26.8 | — 2.9 | 72 | WNW | 7 | 3 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.13 | 740.0 | 29.34 | 745.3 | 34.2 | 1.2 | 70 | WSW | 31 | 14 | ..... | ..... | 6 | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 29.24 | 742.6 | 29.26 | 743.1 | 15.8 | — 9.0 | 85 | N | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.37 | 720.6 | 29.77 | 756.1 | 57.4 | 14.1 | 37 | W | 4 | 2 | ..... | ..... | 7k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 29.66 | 753.4 | 29.58 | 751.3 | 48.4 | 9.1 | 67 | SSW | 18 | 8 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 28.54 | 725.0 | 29.02 | 737.2 | 29.1 | — 1.6 | 89 | W | 27 | 12 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Cand. Fatjanow. |
| Kasan | 28.71 | 729.3 | 28.99 | 736.3 | 26.2 | — 3.2 | 88 | E | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 28.48 | 723.4 | 29.47 | 748.5 | 28.6 | — 1.9 | 70 | SW | 11 | 5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.54 | 750.3 | 29.77 | 756.1 | 64.6 | 18.1 | 13 | S | 13 | 6 | ..... | ..... | 1c | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.31 | 719.2 | 29.99 | 761.8 | 62.2 | 16.8 | 36 | Calm | 0 | 0 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.37 | 746.0 | 29.88 | 758.9 | 38.7 | 3.7 | 64 | SSW | 4 | 2 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeneseisk | 29.81 | 757.2 | 30.11 | 764.9 | 30.0 | — 1.1 | 73 | SW | 4 | 2 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 30.10 | 764.4 | 30.24 | 768.0 | 32.4 | 0.2 | 65 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observato ry. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455 ? m., or 1,492.7 ? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165.2 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.91 | 759.7 | 30.02 | 762.4 | 55.4 | 13 | 68 | SE | 3.9 | 1.75 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Misty. | Antonio Rave, Director. |
| Bilboa, Met. Obs'y | 30.03 | 762.8 | 30.09 | 764.3 | 55.4 | 13.0 | 76 | N | 1.2 | 0.53 | ..... | 2 | 7 | E | ..... | 0.028 | 0.7 | Almost cov'd | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.02 | 686.4 | ..... | ..... | 50.4 | 10.2 | 68 | E | 13.2 | 5.91 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Light clouds | Domingo Martin y Perez. |
| Madrid, Royal Osservatory | 27.74 | 704.5 | ..... | ..... | 63.0 | 17.2 | 39 | S | 5.4 | 2.42 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |
| Murcia, Met. Obs'y | 29.85 | 758.2 | 30.00 | 762.0 | 65.1 | 18.4 | 70 | NNE | 3.9 | 1.75 | ..... | 3 | 2 | E | ..... | 0 | 0 | Light clouds | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.04 | 737.6 | 29.93 | 760.1 | 61.2 | 16.2 | 56 | W | 3.1 | 1.4 | ..... | 3 | 0 | ..... | ..... | 0 | 0 | Light clouds | R. Gil Villaneuva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.96 | 760.9 | 30.02 | 762.6 | 70.6 | 21.4 | 88 | SE | 3.1 | 1.4 | ..... | 1c | 0 | WNW | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.86 | 758.6 | 29.91 | 759.9 | 85.0 | 29.0 | 77 | NNE | 2.9 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.93 | 760.3 | 30.03 | 762.9 | 54.9 | 12.7 | 86 | SSE | 4.0 | 1.8 | ..... | 0 | 10 | ..... | SSW | 0.248 | 6.3 | Raining | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I | 29.97 | 761.3 | 29.06 | 763.6 | 77.0 | 25.0 | 89 | SE | 3.2 | 1.43 | ..... | 2k | 2k | E | E | 0.295 | 7.50 | Cloudy | Leonardo deTejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid, 655.5 m, or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instru'm'tal error and temperature. Inches. | Barometer. Corrected for instru'm'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.48 | 748.8 | 29.52 | 749.8 | 21.9 | — 5.6 | ..... | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | |
| Umea | 29.43 | 747.5 | 29.48 | 748.8 | 22.6 | — 5.2 | 96 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.075 | 1.9 | ..... | |
| Hernosand | 29.42 | 747.2 | 29.47 | 748.5 | 24.4 | — 4.2 | 81 | N | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.28 | 743.7 | 29.46 | 748.2 | 27.3 | — 2.6 | 83 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.004 | 0.1 | ..... | |
| Wisby | 29.38 | 746.2 | 29.44 | 747.7 | 27.3 | — 2.6 | 79 | N | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0.024 | 0.6 | Snowing..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.39 | 746.4 | 29.46 | 748.3 | 25.3 | — 3.7 | 80 | NNW | 5.8 | 2.6 | ..... | ..... | 10 | ..... | NNW | 0.006 | 0.16 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.73 | 729.7 | 30.20 | 767.0 | 40.1 | 4.4 | 89 | NNE | ..... | ..... | 6 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy ..... | The Observatory. |
| Zurich | 28.52 | 724.3 | 30.22 | 767.5 | 36.0 | 2.2 | 52 | NW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0 | 0 | Fair ..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +5.0 mm.; Thermometer, —3.0 ent.; Relative Humidity, +28 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.87 | 758.6 | 36.5 | 2.5 | 92 | N | 15 | 6.5 | ..... | 10 | ..... | N | Inap. | Inap. | ..... | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.32 | 770.2 | 61.9 | 16.6 | ..... | SE | ..... | ..... | 0 | 0 | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.87 | 758.8 | 51.5 | 10.7 | ..... | NW | ..... | ..... | 2 | 10 | ..... | ..... | 0 | 0 | Covered.. ... | A. Bertrand. | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y .... | 29.91 | 759.7 | 30.03 | 762.7 | 66.0 | 18.9 | 64 | SW | ..... | ..... | 3 | 3ks | ..... | SW | 0.05 | 1.3 | D. Clouds ... | Prof. C.V. A. Van Dyck. | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.12 | 765.0 | 30.19 | 766.8 | ..... | ..... | ..... | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.59 | 751.6 | 29.90 | 759.4 | 28 | — 2.2 | ..... | Calm | 0 | 0 | ..... | ..... | 10s | ..... | NW | 0.10 | 2.5 | Cloudy..... | W. R. Bigg. |
| *Chatham, N B | 30.07 | 763.8 | 30.13 | 765 3 | 26 | — 3.3 | 91 | NE | 5 | 2.2 | ..... | ..... | 10s | ..... | NE | 0.04 | 1.0 | Cloudy..... | G. A. Blair. |
| Charlottetown, P. E. Island | 30.03 | 762.8 | 30.07 | 763.8 | 31 | — 0.6 | 100 | E | 2 | 0.9 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light snow.. | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.66 | 753.4 | 29.86 | 758.4 | 26.4 | — 3.1 | 91 | E | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0.13 | 3.3 | Overcast ..... | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | 30.02 | 762.5 | 30.07 | 763 8 | 42.1 | 5.6 | 100 | Calm | ..... | ..... | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Cloudy . . | W. H. Bevis. |
| *Father Point, Quebec | 30.06 | 763.5 | 30.08 | 764.0 | 18 | — 7.8 | 80 | E | 8 | 3.6 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear. .. .... | J. McWilliams. |
| Fredericton, N. B | 30.05 | 763.3 | 30.11 | 764.8 | 32.9 | 0.5 | 89 | NW | 2 | 0.9 | ..... | ..... | 10s | ..... | ..... | 0.17 | 4.3 | Overcast..... | Prof. Harrison. |
| *Fort Garry Manitoba | 29.21 | 741.9 | 30.17 | 766.3 | —18 | —27.8 | 100 | W | 5 | 2.2 | ..... | 0 | 2ks | ..... | W | 0 | 0 | Fair..... | James Stewart. |
| Granton, Ontario | 28.59 | 726.2 | 29.73 | 755.1 | 29 | — 1.7 | ..... | SE | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0 | 0 | Overcast..... | James Grant. |
| *Halifax, N. S | 29.91 | 759.7 | 30.05 | 763.3 | 37 | 2.8 | 95 | SW | 3 | 1.3 | ..... | ..... | 10n | ..... | SW | Inap. | Inap. | Cloudy ..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.42 | 747.2 | 29.82 | 757.4 | 28.9 | — 1.7 | 93 | Calm | ..... | ..... | 0 | 8cs | 0 | Calm | ..... | 0 | 0 | Cloudy..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.50 | 749.3 | 29.85 | 758.2 | 30 | — 1.1 | 82 | E | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.11 | 764 8 | 30.15 | 766.8 | 30.7 | — 0.7 | 98 | SSW | 3 | 1.3 | ..... | ..... | 10n | ..... | ..... | 0.10 | 2.5 | Snowing..... | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 29.71 | 754.6 | 29.92 | 760.0 | 27 | — 2.8 | 85 | E | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0.25 | 6.3 | Hazy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.00 | 736.6 | 29.72 | 754.9 | 28 | — 2.2 | 82 | SE | 17 | 7.6 | ..... | ..... | 10n | ..... | SW | 0.05 | 1.3 | Cloudy..... | Rev. R. Mosley. |
| Peterboro, Ontario | 29.02 | 737.1 | 29.80 | 756.9 | 30.2 | — 1.0 | 58 | SW | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast.... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.04 | 737.6 | 29.79 | 755.9 | 28 | — 2.2 | 94 | N | 1 | 0.4 | ..... | 5c | 0 | SW | ..... | 0 | 0 | Fair ..... | H. Morgan. |
| Port Hastings, N. S | 30.06 | 763.5 | 30.11 | 764.8 | 31.5 | — 0.3 | ..... | N | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | 0.10 | 2.5 | Snowing..... | Peter Grant. |
| Port Stanley, Ontario | 29.10 | 739.1 | 29.77 | 756.1 | 30 | — 1.1 | 87 | E | 9 | 4.0 | ..... | 10ks | ..... | W | 0 | 0 | Cloudy..... | M. Payne. |
| *Quebec, Observ... | 29.09 | 754.1 | 30.03 | 762.8 | 24 | — 4.4 | 87 | NE | ..... | ..... | 8 | 5cs | 2ks | NE | NE | 0.15 | 3.8 | Fair ..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.32 | 744.7 | 29.80 | 756.9 | 24 | — 4.4 | 81 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0.15 | 3.8 | Cloudy..... | W. H. McIntyre. |
| St. Andrews, N. B | 30.02 | 762.5 | 30.07 | 763.8 | 33 | 0.6 | 84 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear..... | Dr. Gove. |
| St. John, N. B | 29.84 | 757.9 | 30.01 | 762.2 | 35 | 1.7 | 80 | N | 7 | 3.1 | ..... | 0 | 7ks | ..... | ..... | 0.11 | 4.9 | Cloudy..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 28.94 | 735.1 | 29.68 | 753.9 | 31 | — 0.6 | 90 | S | 22 | 9.8 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Light snow.. | K. Stewart. |
| Stayner, Ontario | 28.90 | 734.0 | 29.71 | 754.6 | 29 | — 1.7 | 84 | SE | 14 | 6.3 | ..... | ..... | 10n | ..... | SE | 0 | 0 | Cloudy ..... | R. J. Cole. |
| Stratford, Ontario | 28.40 | 721.3 | 29.73 | 755.1 | 27.3 | — 2.6 | 92 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Overcast..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.13 | 765.8 | 30.17 | 766.3 | 29 | — 1.7 | 93 | SE | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0.05 | 1.3 | Light snow.. | T. C. Hill. |
| *Toronto, Ontario | 29.40 | 746.7 | 29.80 | 756.9 | 32 | 0.0 | 74 | E | 11 | 4.9 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy..... | Magnetic Observatory. |
| Windsor, N. S | 29.96 | 761.0 | 30.06 | 763.5 | 36.5 | 2.5 | 95 | W | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast..... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 28.0 | — 2.2 | 88 | SW | ..... | ..... | ..... | 2c | 5s | ..... | ..... | 0 | 0 | Fine..... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters, Stratford, 1,182 ft., or 360.3 meters.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.72 | 754.9 | 29.95 | 760.7 | 34 | 1.1 | 84 | NW | 1 | 0.4 | ..... | 8cs | Haze | SW | ..... | Inap. | Inap. | Fair | |
| Alpena, Michigan | 28.99 | 736.3 | 29.65 | 753.1 | 28 | — 2.2 | 88 | W | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.3 | Light snow | |
| Atlanta, Georgia | 28.74 | 730.0 | 29.87 | 758.7 | 55 | 12.8 | 80 | SE | 7 | 3.1 | ..... | 0 | Fog | ..... | Calm | 0.02 | 0.5 | Foggy | |
| Atlantic City, New Jersey | 29.90 | 759.4 | 29.91 | 759.7 | 41 | 5.0 | 91 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Augusta, Georgia | 29.74 | 755.4 | 29.91 | 759.7 | 67 | 13.9 | 94 | NW | 3 | 1.3 | ..... | ..... | 10n | ..... | NW | 1.01 | 25.7 | Light rain | |
| Baltimore, Maryland | 29.82 | 757.4 | 29.86 | 758.4 | 49 | 9.4 | 85 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Barnegat, New Jersey | 29.89 | 759.2 | 29.91 | 759.7 | 41 | 5.0 | 91 | S | 5 | 2.2 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Bismarck, Dakota | 28.24 | 717.3 | 30.10 | 764.5 | — 3 | —19.4 | 100 | NW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Boerne, Texas | 28.63 | 727.2 | 29.97 | 761.2 | 49 | 9.4 | 93 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boise City, Idaho | 27.24 | 691.9 | 30.20 | 767.1 | 37 | 2.8 | 81 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boston, Massachusetts | 29.58 | 758.9 | 30.03 | 762.8 | 37.5 | 3.1 | 86 | Calm | 0 | 0 | ..... | ..... | 10s;hz | ..... | Calm | Inap. | Inap. | Cloudy | |
| Brackettville, Texas | 28.96 | 735.6 | 29.99 | 761.7 | 59 | 15.0 | 82 | E | 4 | 1.8 | ..... | Haze | Haze | Calm | Calm | 0.11 | 2.8 | Hazy | |
| Breckenridge, Minnesota | 29 13 | 739.9 | 30.26 | 768.6 | — 3 | —19.4 | 80 | W | 10 | 4.5 | ..... | 0 | 2s | ..... | Calm | Inap. | Inap. | Clear | |
| Brownsville, Texas | 30.05 | 763.3 | 30.10 | 764.5 | 60 | 15.6 | 94 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.14 | 3.6 | Clear | |
| Buffalo, New York | 29.01 | 736 8 | 29.72 | 754.9 | 31 | — 0.6 | 79 | NE | 5 | 2.2 | ..... | 7cs | Haze | SW | Calm | 0 | 0 | Fair | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 53 | 11.7 | 21 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.65 | 753.1 | 29.95 | 760.7 | 28 | — 2.2 | 81 | Calm | 0 | 0 | ..... | Haze | Haze | Calm | Calm | Inap. | Inap. | Hazy | |
| Cairo, Illinois | 29.76 | 755.9 | 30.16 | 766.1 | 36 | 2.2 | 80 | NW | 26 | 11.6 | ..... | 0 | 2ks | ..... | NW | 0.03 | 0.8 | Fair | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.21 | 640.3 | 30.01 | 762.2 | 52 | 11.1 | 54 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 35 | 1.7 | 53 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp o, California | 27.42 | 696.5 | 29.99 | 761.7 | 33 | 0.6 | 69 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 29.87 | 758.7 | 29.88 | 758.9 | 51 | 10.3 | 100 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | SW | 0.10 | 2.5 | Cloudy | |
| Cape Henry, Virginia | 29.85 | 758.2 | 29.87 | 758.7 | 50 | 10.0 | 93 | SE | 10 | 4.5 | ..... | ..... | 10n | ..... | S | 0.04 | 1.0 | Light rain | |
| Cape Lookout, N. Carolina | 29.85 | 758.2 | 29.87 | 758.7 | 54 | 12.2 | 93 | S | 11 | 4.9 | ..... | ..... | 10ks | ..... | S | 0.05 | 1.3 | Cloudy | |
| Cape May, New Jersey | 29.85 | 758.2 | 29.88 | 758.9 | 45 | 7.2 | 84 | S | 15 | 6.7 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Castroville, Texas | 29.30 | 744.2 | 30.01 | 762.2 | 55 | 12.8 | 81 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 29.84 | 757.9 | 29.89 | 759 2 | 60 | 15.6 | 94 | W | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.11 | 2.8 | Light rain | |
| Cheyenne, Wyoming | 24.00 | 609.6 | 29.94 | 760.5 | 15 | — 9.4 | 82 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.28 | 743.7 | 30.02 | 762.5 | 20 | — 6.7 | 70 | W | 12 | 5.4 | ..... | 0 | 5s | ..... | W | 0.15 | 3.8 | Fair | |
| Cincinnati, Ohio | 29.24 | 742.7 | 29.89 | 759.2 | 44 | 6.7 | 68 | W | 4 | 1.8 | ..... | 5k | 4s | W | W | 0 | 0 | Cloudy | |
| Cleveland, Ohio | 29.02 | 737.1 | 29.76 | 755.9 | 35 | 1.7 | 70 | SE | 9 | 4.0 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Coleman City, Texas | 28.40 | 721.3 | 30.17 | 766.3 | 33 | 0.6 | 79 | NW | 22 | 9.8 | ..... | 0 | 2s | ..... | N | 0 | 0 | Fair | |
| Columbus, Ohio | 28 96 | 735.6 | 29.80 | 756.9 | 40 | 4.4 | 65 | W | 3 | 1.3 | ..... | 10cs | Sm'e | Calm | Calm | 0 | 0 | Cloudy | |
| Concho, Texas | 28.19 | 716.0 | 29.91 | 759.7 | 44 | 6.7 | 67 | N | 2 | 0.9 | ..... | 5k | 0 | N | ..... | 0 | 0 | Fair | |
| Corsicana, Texas | 29.63 | 752.6 | 30.11 | 764.8 | 50 | 10.0 | 86 | NW | 12 | 5.4 | ..... | 5c | 0 | N | ..... | 0 02 | 0.5 | Fair | |
| Davenport, Iowa | 29.56 | 750.8 | 30.27 | 768.8 | 8 | —13.3 | 78 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Deadwood, Dakota | 25.33 | 643.4 | ..... | ..... | 18 | — 7.8 | 84 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Clear | |
| Decatur, Texas | 29.06 | 738.1 | 30.29 | 769.4 | 33 | 0.6 | 92 | N | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.41 | 747.0 | 30.24 | 768.1 | 35 | 1.7 | 70 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Denver, Colorado | 24.79 | 629.6 | 30.01 | 762.2 | 22 | — 5.6 | 86 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Des Moines, Iowa | 29.42 | 747.2 | 30.42 | 772.6 | 2 | —18.9 | 72 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Detroit, Michigan | 29.04 | 737.6 | 29.71 | 754.6 | 32 | 0.0 | 100 | W | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | 0.04 | 1.0 | Heavy snow | |
| Dodge City, Kansas | 27.73 | 704.3 | 30.26 | 768.6 | 13 | —10.6 | 81 | Calm | 0 | 0 | ..... | 2cs | 2s | Calm | Calm | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.48 | 748.8 | 30.25 | 768.3 | 8 | —13.3 | 55 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Duluth, Minnesota | 29.40 | 746.7 | 30.17 | 766.3 | — 5 | —20.6 | 63 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| Eagle Pass, Texas | 29.29 | 744.0 | 30.03 | 762.8 | 57 | 13.9 | 75 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 30.01 | 762.2 | 30.08 | 764.0 | 35 | 1.7 | 80 | NW | 3 | 1.3 | ..... | 5c | Haze | W | Calm | 0.06 | 1.5 | Fair | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 60 | 15.6 | 88 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Foggy | |
| El Paso, Texas | 26.31 | 668.3 | ..... | ..... | 39 | 3.9 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.01 | 736.8 | 29.73 | 755.1 | 38 | 3.3 | 81 | S | 7 | 3.1 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Escanaba, Michigan | 29.25 | 742.9 | 29.96 | 761.0 | 10 | —12.2 | 58 | NW | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0.13 | 3.3 | Clear | |
| Florence, Arizona | 28.49 | 723.6 | 30.09 | 764.3 | 45 | 7.2 | 46 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 28.10 | 713.7 | ..... | ..... | — 5 | —20.6 | 63 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Fort Craig, New Mexico | 25.59 | 650.0 | 29.66 | 753.4 | 30 | — 1.1 | 48 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.27 | 641.8 | 30.23 | 767.8 | 38 | 3.3 | 63 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Fort Gibson, Indian Ter | 29.74 | 755.4 | 30.31 | 769.9 | 30 | — 1.1 | 78 | N | 16 | 7.2 | ..... | ..... | 10ks | ..... | N | 0 | 0 | Cloudy | |
| Fort Griffin, Texas | 28.90 | 734.0 | 30.25 | 768.3 | 31 | — 0.6 | 79 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.62 | 701.5 | ..... | ..... | 2 | —16.7 | 72 | NW | 2 | 0.9 | ..... | 2c | 0 | Calm | ..... | 0.02 | 0.5 | Clear | |
| Fort McKavett, Texas | 27.83 | 706.9 | 29.79 | 756.7 | 45 | 7.2 | 68 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 29.04 | 737.6 | 30.24 | 768.1 | 25 | — 3.9 | 75 | N | 36 | 16.1 | ..... | 5ck | 0 | Calm | ..... | 0.10 | 2.5 | Fair | |
| Fort Stevenson, Dakota | 28.32 | 719.8 | ..... | ..... | — 9 | —22.8 | 78 | W | 4 | 1.8 | ..... | 1ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fredericksburg, Texas | 28.37 | 720.6 | 29.90 | 759.4 | 65 | 18.3 | 63 | NE | 2 | 0.9 | ..... | 0 | 2ks | ..... | Calm | 0 | 0 | Fair | |
| Galveston, Texas | 30.04 | 763.0 | 30.08 | 764.0 | 62 | 16.7 | 68 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.17 | 4.3 | Clear | |
| Graham, Texas | 29.17 | 740.9 | 30.30 | 769.6 | 31 | — 0.6 | 79 | N | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Grand Haven, Michigan | 29.20 | 741.7 | 29.87 | 758.7 | 26 | — 3.3 | 88 | NW | 28 | 12.5 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light snow | |
| Indianapolis, Indiana | 29.16 | 740.7 | 29.97 | 761.2 | 31 | —0.6 | 79 | NW | 12 | 5.4 | ..... | ..... | 10n | ..... | NW | Inap. | Inap. | Light snow | |
| Indianola, Texas | 30.07 | 763.8 | 30.10 | 764.5 | 65 | 18.3 | 89 | N | 7 | 3.1 | ..... | 1c | 0 | Calm | ..... | 0.04 | 1.0 | Clear | |
| Jacksboro, Texas | 29.03 | 737.3 | 30.24 | 768.1 | 30 | — 1.1 | 78 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.85 | 758.2 | 29.87 | 758.7 | 65 | 18.3 | 89 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0.38 | 9.7 | Cloudy | |
| Keokuk, Iowa | 29.62 | 752.3 | 30.31 | 769.9 | 10 | —12.2 | 79 | NW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0.12 | 3.0 | Clear | |
| Key West, Florida | 29.98 | 761.5 | 30.01 | 762.2 | 73 | 22.8 | 81 | S | 5 | 2.2 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Kittyhawk North Carolina | 29.83 | 757.7 | 29.85 | 758.2 | 48 | 8.9 | 93 | S | 5 | 2.2 | ..... | ..... | 10n | ..... | S | 0.04 | 1.0 | Light rain | |
| Knoxville, Tennessee | 28.88 | 733.5 | 29.88 | 758.9 | 53 | 11.7 | 90 | W | 5 | 2.2 | ..... | Haze | Haze | ..... | ..... | 0.01 | 0.3 | Smoky | |
| La Crosse, Wisconsin | 29.43 | 747.5 | 30.26 | 768.6 | 4 | —15.6 | 73 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| La Mesilla, New Mexico | 26.15 | 664.2 | 30.30 | 769.6 | 37 | 2.8 | 45 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.64 | 752.8 | 29.98 | 761.5 | 61 | 16.1 | 71 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.52 | 749.8 | 30.46 | 773.7 | 9 | —12.8 | 78 | N | 13 | 5.8 | ..... | 4cs | 0 | W | ..... | 0.01 | 0.3 | Fair | |
| Los Angeles, California | 29.63 | 752.6 | 29.97 | 761.2 | 52.0 | 11.1 | 93 | E | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0.03 | 0.8 | Foggy | |
| Louisville, Kentucky | 29.40 | 746.7 | 29.97 | 761.2 | 41 | 5.0 | 65 | NW | 20 | 8.9 | ..... | ..... | 10c;sm' | ..... | NW | 0 | 0 | Cloudy | |
| Lynchburg, Virginia | 29.15 | 740.4 | 29.82 | 757.4 | 55 | 12.8 | 79 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Madison, Wisconsin | 29.06 | 738.1 | 30.15 | 765.8 | 6 | —14.4 | 76 | NW | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear | |
| Marquette, Michigan | 29.18 | 741.2 | 29.94 | 760.5 | 10 | —12.2 | 58 | NW | 12 | 5.4 | ..... | 0 | 5s | ..... | Calm | 0.10 | 2.5 | Fair | |
| Mason, Texas | 28.47 | 722.6 | 30.25 | 768.3 | 47 | 8.3 | 92 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.74 | 755.4 | 30.07 | 763.8 | 47 | 8.3 | 71 | NW | 12 | 5.4 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.23 | 742.4 | 30.02 | 762.5 | 11 | —11.7 | 80 | NW | 30 | 13.4 | ..... | 0 | 2s | ..... | Calm | 0.03 | 0.8 | Fair | |
| Mobile, Alabama | 29.96 | 761.0 | 30.01 | 762.2 | 55 | 12.8 | 93 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.71 | 18.0 | Clear | |
| Montgomery, Alabama | 29.74 | 755.4 | 29.98 | 761.5 | 55 | 12.8 | 93 | NE | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0.64 | 16.3 | Foggy | |
| Morgantown, West Virginia | 28.69 | 728.7 | 29.73 | 755.1 | 50 | 10.0 | 72 | S | 6 | 2.7 | ..... | 0 | 5ks | ..... | S | 0.02 | 0.5 | Fair | |
| Mt. Washington, N. H. | 23.61 | 599.7 | 29.97 | 761.2 | 16 | — 8.9 | 53 | W | 33 | 14.8 | ..... | ..... | 10s | ..... | W | 0.05 | 1.3 | Cloudy | |
| Nashville, Tennessee | 29.43 | 747.5 | 29.97 | 761.2 | 46 | 7.8 | 77 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 29.85 | 758.2 | 29.97 | 761.2 | 38 | 3.3 | 72 | NE | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| New London, Connecticut | 29.96 | 761.0 | 30.02 | 762.5 | 39 | 3.9 | 91 | NE | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| New Orleans, Louisiana | 29.95 | 760.7 | 30.01 | 762.2 | 58 | 14.4 | 88 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.64 | 16.3 | Clear | |
| Newport, Rhode Island | 29.96 | 761.0 | 30.01 | 762.2 | 39 | 3.9 | 91 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| New York, New York | 29.76 | 755 9 | 29.94 | 760.5 | 40 | 4.4 | 82 | E | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 29.81 | 757.2 | 29.86 | 758.4 | 54 | 12.2 | 93 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.14 | 3.6 | Light rain | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.28 | 692.9 | 30.06 | 763.5 | 16 | — 8.9 | 66 | SW | 12 | 5.4 | ..... | 5c | 5s | W | Calm | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 30.03 | 762.8 | 30.07 | 763.8 | 42.0 | 5.6 | 91 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 29.20 | 741.7 | 30.44 | 773.2 | 4 | —15.6 | 74 | NW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0.14 | 3.6 | Clear | |
| Oswego, New York | 29.52 | 749 8 | 29.84 | 757.9 | 38 | 3.3 | 63 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Pembina, Dakota | 29.18 | 741.2 | 30.13 | 765.3 | —13 | —25.0 | 100 | W | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Philadelphia, Pa | 29.84 | 757.9 | 29 89 | 759.2 | 42 | 5.6 | 91 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.80 | 731 5 | 30.03 | 778.0 | 48 | 8.9 | 40 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.05 | 448.6 | 29.86 | 758.4 | 6 | —14.4 | 28 | NW | 54 | 24.1 | ..... | 1c | 5s | W | Calm | Inap. | Inap. | Fair | |
| Ploche, Nevada | 24.12 | 612.6 | 29.89 | 759.2 | 36 | 2.2 | 21 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 28.94 | 735.1 | 29.75 | 755.6 | 41 | 5.0 | 74 | E | 2 | 0.9 | ..... | 5k | Sm'e | W | Calm | 0 | 0 | Fair | |
| Port Huron, Michigan | 29.02 | 737.1 | 29.70 | 754.4 | 31 | — 0.6 | 100 | SW | 9 | 4.0 | ..... | ..... | 10n | ..... | Calm | Inap | Inap. | Light snow. | |
| Portland, Maine | 30.02 | 762.5 | 30.07 | 763.8 | 37 | 2.8 | 81 | Calm | 0 | 0 | ..... | ..... | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Portland, Oregon | 30.10 | 764.5 | 30.20 | 767.1 | 39.0 | 3.9 | 91 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Prescott, Arizona | 24.80 | 629.9 | 30.16 | 766.1 | 29 | — 1.7 | 56 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Punta Rassa, Florida | 29.97 | 761.2 | 29.99 | 761.7 | 71 | 21.7 | 85 | S | 16 | 7.2 | ..... | ..... | 10n | ..... | SW | Inap | Inap. | Light rain | |
| Red Bluff, California | 29.66 | 753.4 | 30.02 | 762.5 | 51 | 10.6 | 65 | NW | 8 | 3.6 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Rio Grande City, Texas | 29.92 | 760.0 | 30.14 | 765.5 | 56 | 13.3 | 94 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Rochester, New York | 29.16 | 740.7 | 29.79 | 756.7 | 32 | 0.0 | 84 | SE | 7 | 3.1 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Roseburg, Oregon | 29.62 | 752.3 | 30.21 | 767.3 | 39.8 | 4.3 | 96 | Calm | 0 | 0 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Sacramento, California | 29.90 | 759.4 | 29.99 | 761.7 | 54 | 12.2 | 93 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.63 | 752.6 | 30.25 | 768.3 | 22 | — 5.6 | 58 | NW | 22 | 9.8 | ..... | 0 | 1s | ..... | Calm | Inap. | Inap. | Clear | |
| St. Marks, Florida | 29.87 | 758.7 | 29.88 | 758.9 | 62 | 16.7 | 94 | W | 5 | 2.2 | ..... | 0 | 5s | ..... | W | 0 06 | 1.5 | Fair | |
| St. Paul, Minnesota | 29.30 | 744.2 | 30.22 | 767.6 | 5 | —15.0 | 62 | W | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Salt Lake City, Utah | 25.72 | 653.3 | 30.05 | 763.3 | 36 | 2.2 | 45 | SE | 4 | 1.8 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.40 | 746.7 | 29.99 | 761.7 | 59 | 15.0 | 82 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.92 | 760.0 | 30.00 | 762.0 | 51 | 10.6 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Sandusky, Ohio | 29.08 | 738 6 | 29.75 | 755.6 | 39 | 3.9 | 73 | SW | 13 | 5.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandy Hook, New Jersey | 29.89 | 759.2 | 29.92 | 760.0 | 40 | 4.4 | 91 | E | 7 | 3.1 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| San Francisco, California | 29.93 | 760.2 | 30.00 | 762.0 | 56 | 13.3 | 75 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 23.32 | 592.3 | 29.80 | 756.4 | 35 | 1.7 | 58 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.79 | 756.7 | 29.88 | 758.9 | 61 | 16.1 | 94 | NW | 1 | 0 4 | ..... | ..... | 10n | ..... | Calm | 0.15 | 3.8 | Light rain | |
| Shreveport, Louisiana | 29.85 | 758.2 | 30.07 | 763.8 | 53 | 11.7 | 100 | Calm | 0 | 0 | ..... | 4k | Fog | S | Calm | 0.01 | 0.3 | Fair | |
| Silver City, New Mexico | 24.36 | 618.7 | 30.66 | 778.8 | 38 | 3.3 | 30 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 29.80 | 756.4 | 29.89 | 759.2 | 59 | 15.0 | 94 | SW | 22 | 9.8 | ..... | ..... | 10n | ..... | SW | 0.11 | 2.8 | Heavy rain | |
| Springfield, Massachusetts | 29.85 | 758.2 | 29.99 | 761.7 | 36 | 2.2 | 80 | NE | 2 | 0.9 | ..... | ..... | 10ks | ..... | W | Inap. | Inap. | Cloudy | |
| Stockton, Texas | 27.04 | 686.8 | 30.04 | 763.0 | 44 | 6.7 | 68 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.01 | 762.2 | 30.00 | 762.0 | 37 | 2.8 | 93 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Toledo, Ohio, | 29.09 | 738.9 | 29.78 | 756.4 | 36 | 2.2 | 80 | NW | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Heavy snow | |
| Tucson, Arizona | 27.54 | 699.5 | 30.09 | 764.3 | 49 | 9.4 | 60 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.78 | 756.4 | 30.30 | 769.6 | 36.0 | 2.2 | 90 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 28 | — 2.2 | 88 | Calm | ..... | ..... | 0 | 2cs | 2s | Calm | N | 0.34 | 8.6 | Fair | |
| Uvalde, Texas | 29.18 | 741.2 | 30.00 | 762.0 | 55 | 12.8 | 74 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.16 | 4.1 | Clear | |
| Vicksburg, Mississippi | 29.80 | 756.9 | 30.06 | 763.5 | 52 | 11.1 | 93 | NW | 1 | 0.4 | ..... | 0 | Fog | ..... | ..... | 0.23 | 5.8 | Clear | |
| Virginia City, Montana | 24.24 | 615.7 | 29.72 | 754.9 | 28 | — 2.2 | 77 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.62 | 752.3 | 30.00 | 762.0 | 51.3 | 10.7 | 89 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 29.73 | 755 1 | 29.84 | 757.9 | 52 | 11.1 | 73 | Calm | 0 | 0 | ..... | ..... | 10s;sme | ..... | Calm | Inap. | Inap. | Cloudy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 46 | 7.8 | 47 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 29.78 | 756.9 | 29.81 | 757.9 | 62 | 16.7 | 94 | SW | 14 | 6.3 | ..... | ..... | 10n | ..... | SW | 0.03 | 0.8 | Heavy rain | |
| Winnemucca, Nevada | 25.73 | 653.5 | 30.09 | 764.3 | 28 | — 2.2 | 66 | NE | 4 | 1.8 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Wood's Holl, Mass | 30.00 | 762.0 | 30.04 | 763.0 | 41 | 5.0 | 82 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Yankton, Dakota | 29.04 | 737.6 | 30.52 | 775.2 | — 2 | —18.9 | 83 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear | |
| Yuma, Arizona | 29.76 | 755.6 | 29.91 | 759.7 | 61 | 16.1 | 40 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.63 | 727.2 | 30.13 | 765.3 | 27 | — 2.8 | 88 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 29.97 | 761.2 | 30.02 | 762.5 | 73 | 22.8 | 81 | Calm | 0 | 0 | ..... | 8c | 0 | SW | ..... | 0 | 0 | Foggy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.27 | 641.8 | ..... | ..... | 65.5 | 18.6 | 85 | Calm | 0 | 0 | ..... | 1k | 2s | ..... | ..... | 0.46 | 11.7 | ..... | Thomas Herran. |
| Navassa, W. I | 29.98 | 761.5 | 30.06 | 763.5 | 78 | 25.6 | ..... | NE | 5.2 | 2.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.02 | 762.5 | 30.02 | 762.5 | 82 | 27.8 | 70 | E | ..... | ..... | 2 | 4k | 5ks | E | ..... | 0 | 0 | Fair | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,870 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m., Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,806 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,895.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.600 in.; Camp Verde, 3.468 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.46 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Up'er. From— | Clouds. Direction. Low'r. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.96 | 761.0 | 55 | 12.8 | 52 | 11.1 | 93 | Var. | 1 | 0.4 | .... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 30.05 | 763.3 | 58 | 14.4 | 58 | 14.4 | 88 | NW | 7 | 3.1 | .... | ..... | 2. | ..... | NW | 0 | 0 | ..... | ..... | Fair ..... | |
| Navy Yard, Portsmouth, N.H | 30.05 | 763.3 | 60 | 15.6 | 35 | 1.7 | 80 | W | 1 | 0.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Naval Hospital, Yokohama, Japan.....*... | 29.68‡ | 753.9‡ | ..... | ..... | 39.5 | 4.2 | 43 | N | ..... | ..... | 4 | ..... | 1k | ..... | SW | 0.10 | 2.5 | ..... | ..... | Fair ..... | |
| Adams, Panama ..... | 30.00 | 762.0 | 78 | 25.6 | 76 | 24.4 | 95 | NW | ..... | ..... | 2 | ..... | 5 | ..... | N; W | ..... | ..... | ..... | ..... | Fair ..... | |
| Alaska..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Alliance, Genoa, Italy..... | 29.88‡ | 758.9‡ | ..... | ..... | 58 | 14.4 | 17 | NNE | ..... | ..... | 2 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear..... | |
| Ashuelot, Hong-Kong, China. ..... | 30.09‡ | 764.3‡ | ..... | ..... | 69 | 15.0 | 82 | E | ..... | ..... | 4 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Misty..... | |
| Canonicus, New Orleans, La..... | 29.98 | 761.5 | 45 | 7.2 | 58 | 14.4 | 82 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Colorado, New York, N. Y..... | 29.90 | 759.4 | 38 | 3.3 | 37 | 2.8 | 100 | NNE | 2 | 0.9 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Hazy..... | |
| Constitution Lisbon, Portugal..... | 30.00‡ | 762.0‡ | ..... | ..... | 58 | 14.4 | 100 | ESE | ..... | ..... | 1 | ..... | 8 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Despatch, N. 37° 31′, E. 17° 34′..... | 29.84‡ | 757.9‡ | ..... | ..... | 60 | 15.6 | 71 | WSW | ..... | ..... | 3 | ..... | 5 | ..... | W | ..... | ..... | Smooth | ..... | Fair ..... | |
| Franklin, Norfolk; Va..... | 30.01 | 762.2 | 68 | 20.0 | 55 | 12.8 | 87 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | Calm | 1.4 | 36. | ..... | ..... | Raining ..... | |
| Gettysburg, Genoa, Italy ..... | 29.80‡ | 756.9‡ | ..... | ..... | 59 | 15.0 | 76 | NNW | ..... | ..... | 3 | ..... | 2 | ..... | N | 0 | 0 | ..... | ..... | Clear..... | |
| Hartford, Montevideo, Uruguay... | 30.13 | 765.3 | 70 | 21.1 | 67 | 19.4 | 79 | E | ..... | ..... | 4 | ..... | 5 | ..... | E | 0 | 0 | Smooth | ..... | Fair ..... | |
| Lackawana, N. 2° 20′, W. 80° 38′... *... | 29.88‡ | 758.9‡ | ..... | ..... | 78 | 25.6 | 86 | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear. ..... | |
| Michigan, Erie, Pa.....† | 29.89 | 759.2 | ..... | ..... | 37 | 2.8 | 90 | S | ..... | ..... | 3 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monocacy, Shanghai, China.....* | 30.35‡ | 770.9‡ | ..... | ..... | 41 | 5.0 | 66 | SE | ..... | ..... | 1 | ..... | 2 | ..... | SE | ..... | ..... | ..... | ..... | Fair ..... | |
| Monongehela, Yokohama, Japan ....*.. | 29.69‡ | 754.1‡ | ..... | ..... | 44 | 6.7 | 53 | N | ..... | ..... | 3–6 | ..... | 2 | ..... | N | Light | Light | ..... | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C..... | 29.93 | 760.2 | 60 | 15.6 | 60 | 15.6 | 100 | S | 7 | 3.1 | ..... | ..... | 10 | ..... | S | 0.53 | 13.5 | ..... | ..... | Drizzling..... | |
| Onward, Callao, Peru.....†... | 30.06 | 763.5 | ..... | ..... | 67 | 19.4 | 89 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Palos, Tientsin, China..... | 30.18 | 766.6 | 27 | — 2.8 | 29 | — 1.7 | 100 | SE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 54 | 12.2 | 87 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Pensacola, Valparaiso, Chili..... | 29.99‡ | 761.7‡ | ..... | ..... | 62 | 16.7 | 66 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Misty..... | |
| Powhatan, N. 11° 55′, W. 66° 57′..... | 30.00‡ | 762.0‡ | ..... | ..... | 80 | 26.7 | 82 | NE | ..... | ..... | 3 | ..... | 2 | ..... | NE | 0 | 0 | Smooth | N | Clear..... | |
| Quinnebaug, Port Mahon, Minorca Id | 30.05‡ | 763.3‡ | ..... | ..... | 58 | 14.4 | 64 | NNW | ..... | ..... | 2 | ..... | 8 | ..... | NNW | ..... | ..... | Smooth | ..... | Sprinkling.. | |
| Ranger. N. 29° 20′ 00′, E. 125° 29′ 00″*. | 30.28‡ | 769.1‡ | ..... | ..... | 52 | 11.1 | 66 | NW | ..... | ..... | 4 | ..... | 10 | ..... | SW | ..... | ..... | Mod'ate | ..... | D. clouds..... | |
| Richmond, Port Said, Egypt..... | 30.03‡ | 762.8‡ | ..... | ..... | 71 | 21.7 | 53 | WNW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Rio Bravo, Brownsville, Texas..... | 30.05 | 763.3 | 62 | 16.7 | 61 | 16.1 | 94 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Santee, Annapolis, Md... ..... | 29.90‡ | 759.4‡ | ..... | ..... | 50 | 10.0 | 86 | SSW | ..... | ..... | 1 | ..... | 10 | ..... | SW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Saratoga, Hampton Roads, Va..... | 29.96 | 761.0 | ..... | ..... | 52 | 11.1 | 93 | S | ..... | ..... | 1 | ..... | 0? | ..... | ..... | Heavy | Heavy | ..... | ..... | D. clouds?... | |
| St. Louis, League Island, Pa ..... | 29.84 | 757.9 | 66 | 18.9 | 44 | 6.7 | 76 | NE | 6 | 2.7 | ..... | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Foggy..... | |
| Supply, N. 37° 44′, W. 72° 47′. .... | 29.97‡ | 761.2‡ | ..... | ..... | 58 | 14.4 | 88 | ESE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Smooth | ..... | Overcast ..... | |
| Trenton Naples, Italy..... | 29.83‡ | 757.7‡ | ..... | ..... | 66 | 18.9 | 40 | NE | ..... | ..... | 2 | ..... | 10 | ..... | S; E | 0 | 0 | None | ..... | Cloudy..... | |
| Tuscarora, Off Mo ro Ayu a, Mex .. | 29.96‡ | 761.0‡ | ..... | ..... | 78 | 25.6 | 82 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | Calm | 0 | 0 | Long | E | Clear..... | |
| Wabash, Boston, Mass..... | 30.06‡ | 763.5‡ | ..... | ..... | 39 | 3.9 | 82 | W | 1 | 0.4 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Wyoming, Constantinople, Turkey | 29.88‡ | 758.9‡ | ..... | ..... | 39 | 3.9 | 100 | N | ..... | ..... | 3–4 | ..... | 10 | ..... | N | ..... | ..... | Mod'ate | N | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | |
| S. S. Colima, N. 29° 39', W. 117° 17'...† | | 29.00‡ | 736.6‡ | 68 | 14.4 | 100 | WNW | | | 1 | | 10 | | ESE | | Small | NNW | Showery | Capt. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Granada, Capt. Austin, N. 11° 40', W. 86° 30'...† | | 30.15‡ | 765.5‡ | 79 | 26.1 | 100* | NE | | | 2 | | cs | | SW | | Short | ESE | Clear | F. W. Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation, and no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WHITE STAR LINE MARINE SERIES.** Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, Capt. L. Meyer, Hong-Kong, China...* | | 29.96‡ | 761.0‡ | 62 | 16.7 | 88 | Var. | | | 5 | | n | | E | | Rough | NNE | Raining | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 31° 10', E. 181° 12'...† | | 29.87‡ | 758.7‡ | 52 | 11.1 | | NW | | | 5 | | k | | NW | Blank | High | NW | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** Furnished by the coöperation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, Havana, Cuba | | 30.14‡ | 765.5‡ | 72.5 | 22.5 | 76 | N | | | 5 | | 5 | | NW | | Mod'ate | N | Fine | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Liverpool | | 30.14‡ | 765.5‡ | 37 | 2.8 | | ESE | | | 6 | | 6 | | ESE | Light | | | Cloudy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
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| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MARINE SERIES. (Miscellaneous.)** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

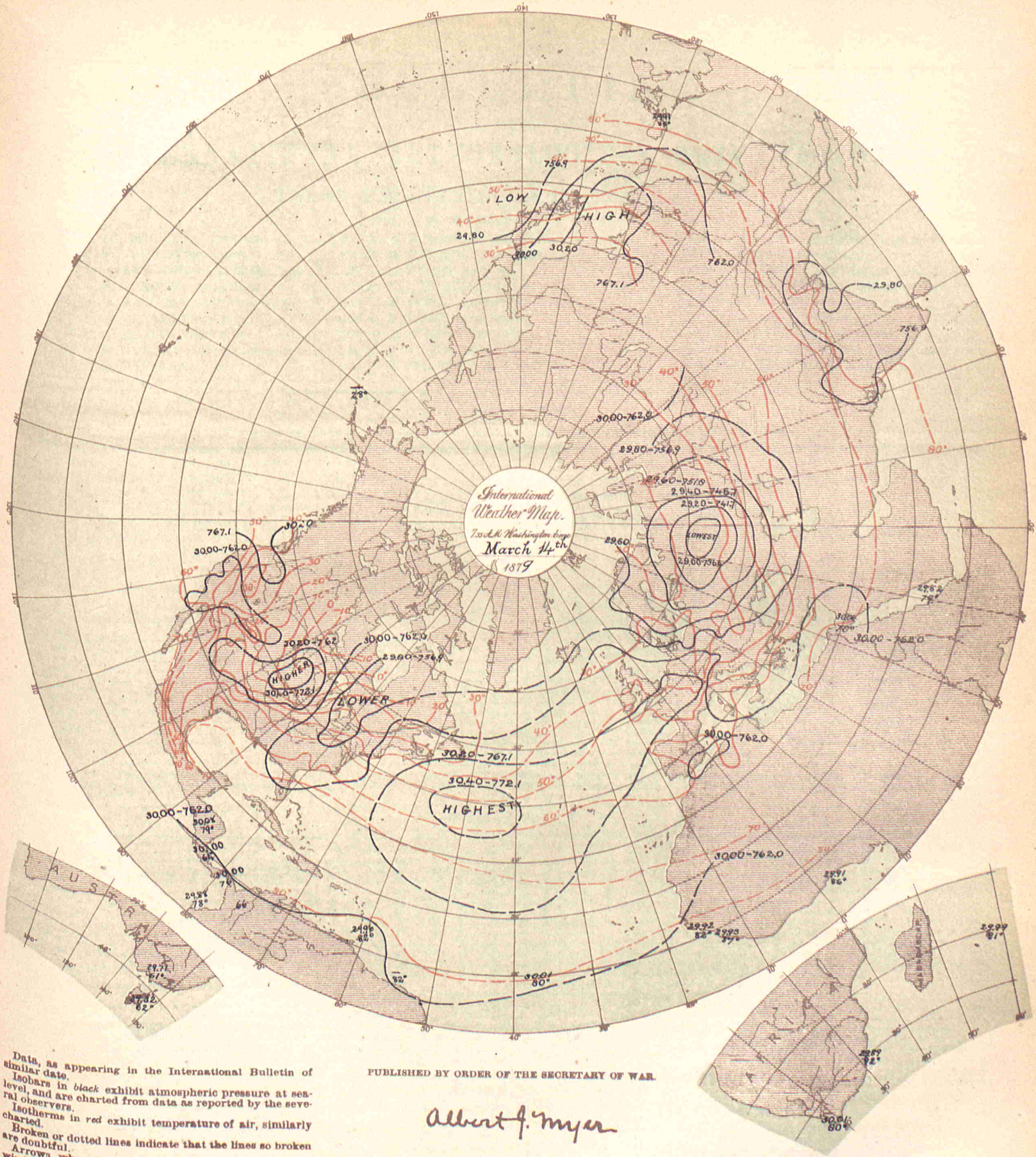
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 15, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer: Corrected for instrumental error and temperature. Inches. | Barometer: Corrected for instrumental error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 30.05 | 763 3 | 62.2 | 16.8 | 77 | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | |
| Nemours | ..... | ..... | 30.02 | 762.6 | 66.9 | 19.4 | 70 | WNW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Kesxuche. |
| Algiers | ..... | ..... | 29.97 | 761.1 | 59.7 | 15.4 | 75 | ENE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Tourilliere. |
| La Calle | ..... | ..... | 30.02 | 762.5 | 58.6 | 14.7 | 81 | NE | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Foufrede. |
| Tunis | ..... | ..... | 30.08 | 763.9 | 63.0 | 17.2 | 54 | SE | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Jacques. |
| Sfax | ..... | ..... | 30.13 | 765.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 30.01 | 762.2 | 58.6 | 14.8 | 41 | SW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Herbin. |
| Tebessa | ..... | ..... | 30.11 | 764.9 | 67.6 | 19.8 | 34 | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Watrin. |
| Geriville | ..... | ..... | 30.04 | 762.9 | 55.9 | 12.9 | 98 | S | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Brugniaux. |
| Laghouat | ..... | ..... | 30.05 | 763.2 | 67.3 | 19.6 | 17 | SE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bertrand. |
| Biskra | ..... | ..... | 30.07 | 763.6 | 74.8 | 23.5 | 31 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.56 | 750.8 | 30.13 | 765.3 | 38.8 | 3.8 | 40 | SW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.17 | 741.0 | 29.98 | 761.5 | 29.1 | — 1.6 | 96 | W | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0.012 | 0.3 | ..... | Dr. Wierzbiski |
| Eperies | 29.02 | 737.2 | 29.93 | 760.3 | 37.0 | 2.8 | 46 | NW | ..... | ..... | 3 | ..... | 7cks | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.78 | 731.0 | 30.07 | 763.8 | 39.2 | 4.0 | 38 | S | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.61 | 726.7 | 30.10 | 764.5 | 31.3 | — 0.4 | 59 | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. A. Gottschling. |
| Kremsmünster | 28.67 | 728.1 | 30.06 | 763.5 | 35.2 | 1.8 | 56 | NNW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0.094 | 2.4 | ..... | Prof. C. Wagner. |
| Lemberg | 28.80 | 731.6 | 29.83 | 757.6 | 31.8 | — 0.1 | 90 | NW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0.012 | 0.3 | ..... | Dr. T. Stanecki. |
| Pola | 30.04 | 763.0 | 30.16 | 766.0 | 47.1 | 8.4 | 60 | SE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office. |
| Szathmar | 29.56 | 750.7 | 30.04 | 763.1 | 33.4 | 0.8 | 89 | SW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 30.08 | 764.6 | 30.18 | 766.6 | 43.0 | 6.6 | 49 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | P. Busin. |
| Vienna | 29.34 | 745.1 | 30.10 | 764.5 | 24.8 | — 4.0 | 87 | W | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | 29.65 | 753.1 | 29.85 | 58.2 | 45.1 | 7.3 | 68 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | W | 0.024 | 0.60 | ..... | Royal Observatory |
| Furnes | 29.82 | 757.5 | 29.85 | 58.1 | 46.9 | 8.3 | 70 | WSW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | 0.012 | 0.3 | ..... | M. E. de Cae |
| Maeseyck | 29.73 | 755.2 | 29.86 | 58.4 | 39.9 | 4.4 | 92 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.063 | 1.6 | ..... | M. Pierrot |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:9, instead of 0:54, p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.53 | 750.0 | 29.63 | 752.6 | 33.5 | 0.8 | | E | 31 | 13.9 | | | 10 | | | 0.095 | 2.42 | Squally | W. Boswell. |
| Ardrossan | 29.49 | 749.0 | 29.50 | 749.3 | 33 | 0.6 | | NE | | | 4 | | 10 | | | | | Snowing | William McNeil. |
| Armagh, Observatory | | | 29.52 | 749.8 | 45.1 | 7.3 | | SW | 12 | 5.4 | | | 10 | | | | | Gloomy | S. Call. |
| Bidston, (Liverpool Obs.) | | | 29.62 | 752.3 | 45.5 | 7.5 | | SW | 26 | 11.6 | | | 10 | | | | | Overcast | John Hartnup. |
| Bolton, (Sharples) | | | 29.59 | 751.6 | 41.0 | 5.0 | | SSW | 36 | 16.1 | | | 10 | | | | | Squally | Thomas Mackereth. |
| Bradford, Yorkshire | 29.21 | 741.9 | 29.61 | 752.1 | 45.1 | 7.3 | | W | | | 3 | | 6 | | | 0.07 | 1.8 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.91 | 759.7 | 29.94 | 760.5 | 81.5 | 27.5 | | NE | | | 1 | | 3 | | | | | D. clouds | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | | | 29.73 | 755.1 | 48.0 | 8.9 | | SW | | | 8-4 | | 7ks;d | | | | | Hazy | H. Todd. [C. |
| Cardington | | | 29.71 | 754.6 | 47.0 | 8.3 | | W | | | 3 | | 6 | | | | | D. clouds | John McLaren. |
| Chatham, School M. E. | 29.65 | 753.1 | 29.78 | 756.4 | 49.6 | 9.8 | | SW | | | 3 | | 2 | | | | | Blue sky | Corpl. Daly, R. E. |
| Dartmoor | 28.42 | 721.9 | 29.92 | 760.0 | 43.0 | 6.1 | | NW | | | 3 | | 3 | | | | | Fine | Alexander Watt. |
| Donaghadee | 29.48 | 748.8 | 29.52 | 749.8 | 47 | 8.3 | | SW | | | 3 | | 10 | | | | | Overcast | J. Mac Gowan. |
| Dover | 29.75 | 755.6 | 29.77 | 756.1 | 44 | 6.7 | | WSW | | | 4 | | 5 | | | | | ½ clouded | J. Costello. |
| Falmouth, Observatory | 29.58 | 751.3 | 29.81 | 757.2 | 48.3 | 9.1 | | SW | | | 4 | | 9 | | | | | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.56 | 700.0 | 29.88 | 758.9 | 91.0 | 32.8 | | E | | | 3 | | 0 | | | | | Blue sky | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.66 | 753.4 | 29.90 | 759.4 | 87 | 30.6 | | W | | | 1 | | 3 | | | | | D. clouds | |
| Galway, Queen's College | | | 29.48 | 748.8 | 50 | 10.0 | | WSW | | | 3 | | 9 | | | | | Gloomy | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.90 | 759.4 | 29.95 | 760.7 | 64.4 | 18.0 | | W | | | 4 | | 1 | | | | | Blue sky | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.33 | 745.0 | 29.54 | 750.3 | 32.1 | 0.1 | | NNE | | | 5 | | | | | | | Snowing | D. G. Maclean. |
| Great Yarmouth | 29.71 | 754.6 | 29.71 | 754.6 | 46 | 7.8 | | WSW | | | 4 | | 4 | | | | | D. clouds | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.60 | 751.8 | 29.77 | 756.1 | 49.9 | 9.9 | | WSW | | | 4 | | 5 | | | | | D. clouds | The Staff, for G. B. Airy. |
| Guernsey | 29.64 | 752.8 | 29.86 | 758.4 | 48 | 8.9 | | SW | | | 1 | | 0 | | | | | Blue sky | Dr. S. E. Hoskins, F.R.S. |
| Helston | 29.82 | 757.4 | 29.87 | 758.7 | 50 | 10.0 | | SW | | | 4 | | 3ck | | | 0 | 0 | Fine | M. P. Moyle. |
| Holyhead | 29.53 | 750.0 | 29.67 | 753.6 | 47 | 8.3 | | E | | | 3 | | 10 | | | | | Misty | John Tilston. |
| Jersey | 29.60 | 751.8 | 29.90 | 759.4 | 46.8 | 8.2 | | SW | | | 2 | | 3c | | | | | D. clouds | J. Fisher. |
| Kew, Observatory | 29.74 | 755.4 | 29.77 | 756.1 | 48.0 | 8.9 | | WSW | 21 | 9.4 | | | 7 | | | | | D. clouds | The Meteorological Of. |
| Leicester, Museum | 29.43 | 747.5 | 29.69 | 754.1 | 45.8 | 7.4 | | SW | | | 4 | | 10 | | | 0.04 | 1.0 | Overcast | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 30.00 | 762.0 | 30.08 | 764.0 | 61 | 16.1 | | N | | | 3 | | 4k | | | | | D. clouds | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.57 | 751.1 | 29.66 | 753.4 | 32 | 0.0 | | NE | | | 3 | | 10 | | | | | Snowing | W. D. Penny. |
| Nassau, (Bahamas) | | | 30.04 | 763.0 | 72.5 | 22.5 | | NW | | | 1 | | 6 | | | Blank | Blank | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.48 | 748.8 | 29.67 | 753.6 | 47.7 | 8.7 | | SW | | | 4 | | 9k | | SW | 0.020 | 0.51 | D. clouds | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.15 | 740.4 | 29.68 | 753.9 | 47.8 | 8.8 | | SW | | | 4 | | 9 | | | | | D. clouds | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | | | 29.75 | 755.6 | 45 | 7.2 | | WSW | | | 5 | | 9 | | | | | Overcast | H. E. Bellamy. |
| Plymouth | 29.74 | 755.4 | 29.81 | 757.2 | 47.6 | 8.7 | | SW | | | 4 | | 10 | | | | | Overcast | John Merrifield. |
| Roche's Point | 29.58 | 751.3 | 29.62 | 752.3 | 50 | 10.0 | | WSW | | | 5 | | 10 | | | | | Raining | W. Kennedy. |
| Saint Ann's Head | 29.54 | 750.3 | 29.70 | 754.4 | 47 | 8.3 | | SW | | | 5 | | 10 | | | | | Overcast | John C. Walker. |
| Sandwick Manse, (Orkneys) | | | 29.76 | 755.9 | 30.1 | — 1.1 | | ENE | 14 | 6.3 | | | 0 | | | | | Blue sky | Dr. Hoskins. |
| Scutari, Cemetery, (Turkey) | | | 30.17 | 766.3 | 41.0 | 5.0 | | NNW | | | 1 | | 5 | | | | | D. clouds | W. H. Lyne. |
| Sheffield | 29.38 | 746.2 | 29.66 | 753.4 | 47.2 | 8.4 | | SW | | | 3 | | 7 | | | 0.18 | 4.6 | Overcast | W. F. Cooper. |
| Silloth Rectory | 29.48 | 748.8 | 29.51 | 749.5 | 42.5 | 5.8 | 94 | SW | | | 5 | | 10 | | | 0.263 | 6.43 | Raining | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.19 | 741.4 | 29.69 | 751.8 | 45.2 | 7.3 | | SW | | | 5 | | 10 | | | | | Overcast | Rev. S. J. Perry. |
| Straifield Turgiss | 29.60 | 751.8 | 29.82 | 757.4 | 48.4 | 9.1 | | W | | | 3 | | 8 | | | | | Squally | C. H. Griffith, F. M. S. |
| Thurso | 29.67 | 753.6 | 29.73 | 755.1 | 36 | 2.2 | | NE | | | 3 | | 3 | | | | | D. clouds | John Trotter. |
| Truro, Royal Institution | 29.72 | 754.9 | 29.79 | 756.7 | 50 | 10.0 | | SW | | | 6 | | 5 | | | | | D. clouds | W. Newcombe. |
| Valencia, Observatory | 29.58 | 751.3 | 29.60 | 751.8 | 50.2 | 10.1 | | SSW | 21 | 9.4 | | | 10 | | | | | Misty | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.01 | 762.2 | 30.05 | 763.3 | 76 | 24.4 | 52 | S | 17 | 7.6 | | 0 | 0 | | | 0 | 0 | Fine | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | | | 29.82 | 757.4 | 53.0 | 12.0 | 94 | N | | | 3 | | 4k | | | 0.10 | 2.5 | | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | | | 29.57 | 751.1 | 33.9 | 1.1 | | E | | | 2 | | 10n | | | 0.49 | 12.4 | Snowy | Andrew Gibb. |
| Mauritius, Observatory | 29.83 | 757.7 | 30.02 | 762.4 | 80.3 | 26.8 | 67 | ESE | 18.0 | 8.0 | | 4 | 4 | | E | 0.08 | 2.0 | Squally | C. Meldrum. |
| Melbourne, Observatory | 29.70 | 754.4 | 29.79 | 756.6 | 53.4 | 11.9 | 84 | SE | 6 | 2.7 | | | 4 | | | 0.02 | 0.5 | Fine | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | | | 29.65 | 753.1 | 33 | 0.6 | | ENE | | | 6 | 5 | 5 | E | | 0.7 | 18. | | J. Youngclause. |
| North Unst, (Shetland Is.) | | | 29.83 | 757.7 | 25 | — 3.9 | | NE | | | 4 | 7 | 3 | NE | | | | Snowing | Robert Burnet. |

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series and 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day,) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day,) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 36° 55′, E. 14° 58′ | | | 30.07‡ | 763.8‡ | 59 | 15.0 | | E | | | 4 | | 6 | | | | | Misty | Capt. W. J. L. Wharton. |
| | | | | | | | | | | | | | | | | | | | |
| Brig Alliance | | | | | | | | | | | | | | | | | | | Capt. W. Scott. |
| S. S. Amanda | | | | | | | | | | | | | | | | | | | Capt. B. Boyes. |
| Barque Belle Isle, N. 30° 47′, W. 77° 00′ | | | 30.01‡ | 762.2‡ | 70 | 21.1 | | WNW | | | 6 | | 0 | | | 5 | NW | Blue sky | Capt. A. J. Brown. |
| Ship British Commodore, N. 38° 55′, W. 69° 00′ | | | 30.14 | 765.5 | 67 | 19.4 | | S | | | 6 | | 5 | | | 5 | S | D. clouds | Capt. J. W. Thorne. |
| —— City of Agra, N. 11° 15′, W. 39° 54′ | | | 30.02‡ | 762.5‡ | 80.8 | 27.1 | | NE | | | 4 | | 4 | | | | | D. clouds | Capt. Thos. Young. |
| Barque Commewyne, N. 30° 22′ W. 59° 05′ | | | 30.24‡ | 768.1‡ | 68.5 | 20.3 | | SE | | | 5 | | 0 | | | | | Blue sky | Capt. A. Buchan. |
| Barque Fedalina, Off Lizard Head, Eng | | | 29.82‡ | 757.4‡ | 49 | 9.4 | | SW | | | 5 | | 2 | | | 2 | | Blue sky | Capt. H. L. Fox. |
| Barque Mertole, N. 51° 14′, W. 7° 43′ | | | 29.68‡ | 753.9‡ | 49 | 9.4 | | WSW | | | 6 | | 10 | | | | | Drizzling | Capt. E. W. Turner. |
| S. S. Nizam | | | | | | | | | | | | | | | | | | | Capt. Barlow. |
| S. S. Strathleven, N. 19° 16′, E. 39° 27′ | | | 29.86‡ | 758.9‡ | 78 | 25.6 | | NW | | | 6 | | 0 | | | | | Blue sky | Capt. C. W. Pearson. |
| S. S. Wyberton, N. 21° 24′, E. 39° 27′ | | | 30.02‡ | 762.5‡ | 76 | 24.4 | | N | | | 5 | | | | | | | Blue sky | Capt. W. R. McMontry. |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity Miles per hour. | Wind. Velocity Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.28 | 667.5 | 30.00 | 762 0 | 64.4 | 18.0 | 93 | SE | ..... | ..... | 1 | 6cs | ..... | ..... | ..... | 0 | 0 | ..... | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.78 | 756.3 | 29.82 | 757.5 | 33.8 | 1.0 | 81 | NNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | |
| Faröe | 29.76 | 755.9 | 29.78 | 756.4 | 31.8 | — 0.1 | 89 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.91 | 759.7 | 29.95 | 760.8 | 28.8 | — 1.8 | 90 | NNE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Faröe) | 29.87 | 758.7 | 29.91 | 759.6 | 34.9 | 1.6 | 73 | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | Snowing | |
| Vestervig | 29.80 | 751.9 | 29.77 | 756.2 | 34.2 | 1.2 | 92 | SW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.45 | 748.0 | 30.00 | 762.0 | 40.3 | 4.6 | 74 | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear. | Collignon, Director. |
| Amiens, Normal School | 29.87 | 758.6 | 29.98 | 761.4 | 53.2 | 11.8 | 78 | SSW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Bonvallet, Director. |
| Avignon, Normal School | 29.96 | 761.0 | 30.04 | 763.0 | 60.8 | 16 | 44 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | M. Giraud, Director. |
| Bar-sur-Seine§ | 29.43 | 747.4 | 29.99 | 761.7 | 48.6 | 9.2 | 87 | SSW | ..... | ..... | 1 | ..... | 2cn | ..... | ..... | 0 | 0 | Slightly cl'dy | C. Saillard, Director. |
| Beauvais, Normal School | 29.64 | 752.8 | 29.92 | 760.0 | 49.8 | 9.9 | 63 | SW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.10 | 739.1 | 30.00 | 762.1 | 47.7 | 8.7 | 71 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.15 | 740.3 | 30.06 | 763.6 | 42.4 | 5.8 | 82 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Marlot, Director. |
| Bourges, Normal School | 29.36 | 745.8 | 29.92 | 760.0 | 46.4 | 8 | 66 | W | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Waquet, Director. |
| Brest, Naval Observatory | 29.57 | 751.1 | 29.81 | 757.2 | 56.1 | 13.4 | 59 | SW | ..... | ..... | 2 | ..... | 2k | ..... | SW | 0 | 0 | ..... | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.71 | 754.7 | 30.13 | 765.3 | 56.5 | 13 6 | 33 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | September, Director. |
| Caen, Normal School | 29.81 | 757.1 | 29.88 | 759.0 | 52.5 | 11.4 | 75 | SW | ..... | ..... | 1 | ..... | 2 | ..... | SW | 0 | 0 | Slightly cl'dy | M. Lair, Director. |
| Chartres, Normal School | 29.32 | 744.6 | 29.88 | 758.9 | 50.0 | 10 | 84 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.58 | 751.3 | 29.90 | 759.4 | 50.9 | 10.5 | 58 | WSW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.70 | 729.0 | 30.04 | 763.0 | 59.0 | 15.0 | 13 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Alluard, Director. |
| Commercy, Normal School | 29.10 | 739.4 | 29.99 | 761.7 | 44.6 | 7 | 55 | WSW | ..... | ..... | 1 | 2c | ..... | ..... | WSW | 0 | 0 | Slightly cl'dy | Dr. Coulet, Director. |
| Commune de Gréasque* | 28.91 | 734.2 | 30.05 | 763.2 | 58.6 | 14.8 | 42 | SE | ..... | ..... | 4 | ..... | 5 | ..... | SE | 0 | 0 | ½ covered | M. Kina, Director. |
| Grenoble, Normal School | 29.21 | 742.0 | 29.98 | 761.6 | 49.6 | 9.8 | 44 | ENE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.69 | 754.2 | 29.91 | 759.6 | 54.0 | 12.2 | 54 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Moullot, Director. |
| Le Mans, Normal School | 29.62 | 752.4 | 29.93 | 760.3 | 49.1 | 9.6 | 46 | SSE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.09 | 738.8 | 30.03 | 762.8 | 46.0 | 7.8 | 51 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | Baudry, Director. |
| Lorient, Naval Observatory | 29.81 | 757.2 | 29.91 | 759.8 | 50.7 | 10.4 | 74 | SSW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Mirecourt, Normal School | 28.90 | 734.0 | 30.00 | 761.9 | 48.9 | 6.6 | 49 | NNW | ..... | ..... | 1 | ..... | s | ..... | SSE | 0 | 0 | ..... | M. Barbier, Director. |
| Nîmes, Normal School | 29.83 | 757.6 | 30.03 | 762.7 | 63.0 | 17.2 | 50 | S | ..... | ..... | 1 | ..... | 5 | ..... | S | 0 | 0 | Cloudy | Boyer, Director. |
| Privas, Normal School | 28.89 | 733.8 | 29.96 | 760.9 | 54.7 | 12.6 | 28 | S | ..... | ..... | 1 | ..... | s | N | S | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 26.00 | 634.9 | ..... | ..... | 40.6 | 4.8 | 27 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Alluard, Director. tor. |
| Rochefort, Naval Obs'y | 29.88 | 759.0 | 29.91 | 759.8 | 56.5 | 13.6 | 50 | SSE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Lt. Decante, Director. |
| Rouen, Normal School | 29.79 | 756.6 | 29.87 | 758.8 | 54.7 | 12.6 | 30 | WSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.90 | 759.5 | 29.93 | 760.3 | 53.6 | 12.0 | 33 | S | ..... | ..... | 2 | ..... | 1 | ..... | SW | 0 | 0 | Clear | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.76 | 755.9 | 29.93 | 760.1 | 54.5 | 12.5 | 35 | SW | ..... | ..... | 2 | ..... | ..... | W | ..... | 0 | 0 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.91 | 734.4 | 30:00 | 761.9 | 53.6 | 12 | 65 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Huguet, Director. |
| Versailles Observatory | 29.42 | 747.3 | 29.91 | 759.8 | 50.9 | 10.5 | ..... | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.42 | 747.2 | 30.13 | 765.4 | 53.6 | 12 | 70 | ESE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0.020 | 0.5 | Slightly cl'dy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.93 | 760.3 | 29.96 | 761.0 | 78.8 | 26 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.38 | 7. | ..... | L'Abbé Marchesi. |
| Lyons Obs'y, (Park Station) | 29.86 | 745.7 | 29.93 | 760.1 | 53.4 | 11.9 | 20 | SSE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 24.74 | 628.4 | 30.06 | 763.4 | 46.4 | 8.0 | 54 | W | 13.0 | 5.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | 30.10 | 764.5 | 57.2 | 14.0 | 47 | W | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.65 | 753.1 | ..... | ..... | 52.7 | 11.5 | 37 | SSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Marié Davy, Director. |
| Perpignan | 29.91 | 759.7 | 30.02 | 762.4 | 51.4 | 10.8 | 65 | E | 5.6 | 2.5 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.37 | 568.2 | ..... | ..... | 29.8 | — 1.2 | ..... | W | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0.055 | 1.4 | Cloudy | Gen'l de Nansouty. |
| Toulouse, Observatory | 29.21 | 741.9 | 29.93 | 760.2 | 54.3 | 12.4 | 54 | SSE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | M. Mercadier Juller. |
| Tours | 29.69 | 754.0 | 29.88 | 759.0 | 51.1 | 10.6 | 42 | ESE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Cousin-Marquete. |
| Zi-Ka-Wei, (near Shanghai) | 30.31 | 769.9 | 30.34 | 770.5 | 41.9 | 5.5 | 93 | E | 6.7 | 3.0 | ..... | 2cs | ..... | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grèasque, 822 m., or 1,058.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône. §Observation taken at 12 o'clock, midday, instead of 1h. 3m., p. m.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-12. | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.13 | 739.9 | 29.97 | 761.3 | 34.3 | 1.3 | 72 | SE | | | 4 | | 8 | S | | 0.020 | 0.5 | Snowing | Prof. Dr. Hoh. |
| Berlin | 29.79 | 756.6 | 29.97 | 761.1 | 37.4 | 3.0 | 54 | SW | | | 4 | | 7 | | | Inap. | Inap. | | Prof. Arndt. |
| Breslau | 29.45 | 748.1 | 29.98 | 761.6 | 30.2 | — 1.0 | 79 | WNW | | | 3 | | 9 | | | 0.011 | 0.27 | | Royal University Obs'y |
| Carlsruhe | 29.53 | 750.0 | 29.96 | 761.0 | 45.5 | 7.4 | 41 | SW | | | 4 | | 9 | NW | | 0 | 0 | | Albert Senz. |
| Cassel | 29.30 | 744.2 | 29.91 | 759.6 | 35.6 | 2.0 | 73 | SSW | | | 3 | | 10 | SW | | 0.054 | 1.38 | Snowing | Dr. H. Möhl. |
| Crefeld | 29.66 | 753.4 | 29.82 | 757.5 | 37.9 | 3.3 | 91 | SW | | | 5 | | 10 | | | 0.16 | 4. | Snowing | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.59 | 751.6 | 29.97 | 761.1 | 35.4 | 1.9 | | SSW | | | 2 | | 10 | | | 0.008 | 0.2 | | Physical Society. |
| Friedrichshafen | 28.56 | 725.4 | 29.96 | 760.9 | 37.4 | 3.0 | 90 | S | | | 2 | | 1 | W | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.80 | 756.8 | 29.87 | 758.7 | 32.0 | 0.0 | 90 | SE | | | 3 | | 10 | | | 0.091 | 2.3 | Fog & snow | Captain F. Hegemann. |
| Kiel | 29.84 | 757.8 | 29.85 | 758.2 | 33.8 | 1.0 | 78 | W | | | 1 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.67 | 761.1 | 29.66 | 753.3 | 30.6 | — 0.8 | 86 | NW | | | 6 | | 2 | | | 0.047 | 1.2 | Snowing | Prof. E. Luther. |
| Köslin | | | 29.81 | 757.2 | 32.0 | 0.0 | | NW | | | 4 | | 1 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.55 | 750.6 | 29.99 | 761.7 | 34.5 | 1.4 | 69 | SW | | | 2 | | 10 | | | | | Snowing | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.62 | 752.3 | 29.67 | 753.5 | 29.1 | — 1.6 | 74 | NW | | | 2 | | 4s | | | | | | Skalweit. |
| Neufahrwasser | 29.60 | 756.8 | 29.81 | 757.2 | 29.1 | — 1.6 | 80 | NW | | | 4 | | 10 | | | | | Snowing | A. Lothes. |
| Posen | 29.67 | 753.5 | 29.97 | 761.2 | 31.3 | — 0.4 | 62 | W | | | 7 | | 8 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.45 | 748.0 | 30.01 | 762.3 | 45.9 | 7.7 | 44 | SSW | | | 2 | | 2 | | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 28.99 | 736.4 | 29.91 | 759.7 | 43.7 | 6.5 | 43 | SW | | | 1 | | 4 | W | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | | | | | | | | | | | | | | | | | | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.46 | 723.0 | 30.03 | 762.8 | 35.4 | 1.9 | 66 | SSW | 20 | 9 | | | 10 | | SW | 0 | 0 | | Dr. Van Bebber. |
| Wustrow, Naval School | 29.84 | 758.0 | 29.87 | 758.6 | 33.1 | 0.6 | 92 | SSW | | | 4 | | 8s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.80 | 756.9 | 30.20 | 767.1 | 48.9 | 9.4 | | NE | | | 3.5 | | | | | | | Covered | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.86 | 758.5 | 29.91 | 759.8 | 75.8 | 24.3 | 43 | WSW | 17 | 7.6 | | | 1 | | | 0 | 0 | D. clouds | |
| Deesa | 29.36 | 745.7 | 29.83 | 757.8 | 81.1 | 27.3 | 29 | W | 10.3 | 4.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.83 | 757.8 | 29.87 | 758.7 | 77.7 | 25.4 | 64 | NW | 20 | 8.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.13 | 739.9 | 29.80 | 759.2 | 68.4 | 20.2 | 58 | N | 4.9 | 2.2 | | | 3 | | | 0.12 | 3.04 | Cloudy | |
| Belgaum | 27.30 | 693.5 | 29.79 | 756.6 | 86.8 | 30.4 | 51 | W | 13.0 | 5.8 | | | 1 | | | 0 | 0 | | |
| Roorkee | 28.90 | 734.2 | 29.82 | 757.4 | 69.8 | 21.0 | 53 | NW | 1.7 | 0.8 | | | 10 | | | 0.02 | 0.5 | Gloomy | |
| Agra | 29.22 | 742.2 | 29.78 | 756.5 | 83.7 | 28.7 | 37 | S | | | | | 8 | | S | 0 | 0 | | |
| Nagpur | 28.74 | 729.9 | 29.75 | 755.7 | 91.5 | 33.1 | 19 | W | 5.8 | 2.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.38 | 746.2 | 29.75 | 755.7 | 86.2 | 30.1 | 35 | NE | 1.0 | 0.4 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.44 | 747.7 | 29.74 | 755.5 | 88.1 | 31.2 | 31 | NW | 3.5 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.54 | 750.4 | 29.72 | 754.9 | 89.4 | 31.9 | 28 | W | 0.7 | 0.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.73 | 704.3 | 29.70 | 754.3 | 67.0 | 30.6 | 27 | WNW | 8.4 | 3.8 | | | 2 | | W | 0 | 0 | | |
| Cuttack | 29.69 | 754.2 | 29.77 | 756.2 | 87.1 | 30.6 | 54 | SSW | 4.1 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.73 | 755.1 | 29.75 | 755.7 | 83.9 | 28.8 | 74 | SSW | 8.0 | 3.6 | | | 1 | | NW | 0 | 0 | D. clouds | |
| Goalpara | 29.24 | 742.8 | 29.62 | 752.5 | 86.8 | 30.4 | 34 | N | 4.0 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.68 | 754.0 | 29.78 | 756.3 | 80.9 | 27.2 | 82 | SSW | 5.5 | 2.5 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.37 | 746.0 | 29.71 | 754.6 | 74.1 | 23.4 | 77 | ENE | 2.8 | 1.2 | | | 10 | | | 0.01 | 0.3 | Drizzling | |
| Jubbulpore | 28.42 | 721.8 | 29.76 | 756.0 | 85.8 | 29.9 | 31 | NE | 4.6 | 2.1 | | | 0 | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.5 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.76 | 755.9 | 30.18 | 766.5 | 40.3 | 4.6 | 42 | W | 0.7 | 0.3 | | | 9 | | | 0 | 0 | | Prof. Giovanni Clodig. |
| Milan | 29.61 | 752.1 | 30.14 | 765.5 | 48.0 | 8.9 | 47 | E | | | 4 | | 4 | NW | | 0 | 0 | | Prof. Schiaparelli. |
| Padua | 30.06 | 763.5 | 30.17 | 766.3 | 41.5 | 5.3 | 66 | NE | 7.4 | 3.3 | | | 4 | S | | 0 | 0 | | Prof. Dott. Lorenzoni |
| Moncalieri | 29.21 | 741.9 | 30.13 | 765.2 | 47.1 | 8.4 | 47 | SSE | 1.8 | 0.6 | | | 5 | SE | | 0 | 0 | | Prof. P. F. Denza. |
| Genoa | 29.91 | 759.8 | 30.11 | 764.7 | 53.2 | 11.8 | 35 | N | 1.8 | 0.8 | | | 2 | | | 0 | 0 | | Prof. G. M. Garibaldi. |
| Mondovi | 28.17 | 715.6 | 30.11 | 764.8 | 39.7 | 4.3 | 61 | NW | | | 4 | | 2 | NW | | 0 | 0 | | Prof. D. C. Bruno. |
| Pesaro | 30.06 | 763.5 | 30.11 | 764.8 | 52.3 | 11.3 | 40 | NW | 5.6 | 2.5 | | | 0 | | | 0 | 0 | | Prof. Luigi Guidi. |
| Florence | 29.84 | 757.9 | 30.10 | 764.5 | 54.1 | 12.3 | 22 | N | | | 2 | | 5 | | | 0 | 0 | | Cav. F. Meucci |
| Leghorn | 30.04 | 762.9 | 30.12 | 765.1 | 57.9 | 14.4 | 31 | SW | | | 4 | | 8 | | | 0.079 | 2.0 | | Prof. P. Monte. |
| Rome | 29.94 | 760.4 | 30.11 | 764.9 | 59.2 | 15.1 | 47 | W | 3.1 | 1.4 | | | 2 | | | 0 | 0 | | Prof. P. S. Ferrari. |
| Lecce | 29.97 | 761.2 | 30.23 | 767.7 | 47.3 | 8.5 | 35 | NNE | 9.8 | 4.4 | | | 0 | | | 0 | 0 | | Prof. C. De Giorgi. |
| Cosenza | 29.27 | 743 4 | 30.17 | 766.2 | 53.6 | 12.0 | 73 | NW | 0 | 0 | | | 6 | | | 0 | 0 | | Prof. D. Conti. |
| Cagliari | 29.83 | 757.6 | 30.02 | 762.5 | 58.3 | 14.6 | 51 | S | | | 2 | | 3 | | | 0 | 0 | | Prof. A. Pacinotti. |
| Palermo | 29.81 | 757.1 | 30.14 | 765.6 | 60.1 | 15.6 | 51 | W | 11.9 | 5.3 | | | 10 | W | | 0 | 0 | | Prof. G. Cacciatore. |
| Syracuse | 30.08 | 764.0 | 30.15 | 765.9 | 55.2 | 12.9 | 60 | NNE | 12.5 | 5.6 | | | 10 | NE | | 0 | 0 | | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.56 | 751.5 | 30.14 | 765.6 | 55.6 | 12.8 | 55 | ESE | 3.8 | 1.7 | | | 2 | | | 0 | 0 | | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.30 | 769.6 | 30.32 | 770.1 | 35.7 | 2.1 | 64 | NW | 4.0 | 1.8 | | | 3s | | | 0 | 0 | Fair | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 30.12 | 765.0 | 30.33 | 770.4 | 36 9 | 2.7 | 71 | NW | 0.2 | 0.1 | | | 0 | | | 0 | 0 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.92 | 759.9 | 29.99 | 761.7 | 33.3 | 0.7 | 51 | N | 11.7 | 5.2 | | | 2ks | | | 0 | 0 | Fair | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | 25.10 | 637.5 | 30.21 | 767.3 | 41.9 | 5.5 | 46 | Calm | | | 0 | 0 | 0 | | | 0 | 0 | Clear | P. Ceballos. |
| Guadalajara | 24.46 | 621.4 | 30.07 | 763.8 | 50.1 | 13.4 | 76 | NW | | | 2 | 0 | 0 | | | 0 | 0 | Blue sky | Prof. L. Perez. |
| Leon | 23.10 | 586.7 | 30.21 | 767.3 | 48.2 | 9.0 | 79 | Calm | 0 | 0 | | 0 | 7ks | | SE | 0 | 0 | Cloudy | Prof. M. Leal. |
| Mexico, Central Obs'y | | | | | 48.7 | 9.3 | 85 | N | | | 1 | 0 | 0 | | | 0 | 0 | Clear | The Staff. |
| Pabellon, (Aguascalientes) | 30.07 | 763.7 | 30.08 | 764.0 | 72.5 | 22.5 | 93 | SW | | | 2 | 7 | 9 | N | WSW | 0.168 | 4.0 | Misty | M. V. de Leon, M. E. |
| Tlacotalpam | 24.24 | 615.1 | 30.37 | 771.4 | 50.0 | 10.0 | 84 | S | | | 1 | 0 | 3 | | S | 0 | 0 | Clear | M. M. Chazaro. |
| San Luis Potosi | | | | | | | | | | | | | | | | | | | G. Barroeta, M. D. |
| Vera-Cruz | | | | | | | | | | | | | | | | | | | Prof. J. Rossell. |
| Zacatecas | | | | | | | | | | | | | | | | | | | |
| Puebla, (Catholic Institute) | 23.45 | 595.7 | 30.22 | 767.5 | 48.9 | 9.4 | 26 | N | 2.7 | 1.2 | | | 1ck;ks | | | 0 | 0 | | Prof. P. Spina. |
| Durango | | | | | | | | | | | | | | | | | | | M. V. de Leon, C. E. |
| Colima | 28.42 | 721.8 | 30.10 | 764.5 | 70.7 | 21 5 | 56 | NE | | | 2 | 0 | 0 | | | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | | | | | | | | | | | | | | | | | | | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,893 m., or 6,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,201m., or 7,220.9 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.83 | 757.6 | 29.83 | 757.6 | 45.7 | 7.6 | | WSW | | | | | | | | 0.030 | 1.0 | | |
| Groningen | 29.69 | 754.0 | 29.74 | 755.4 | 33.8 | 1.0 | | S | | | 2 | | | | | 0.047 | 1.2 | | |
| Helder | 29.70 | 754.4 | 29.70 | 754.4 | 38.1 | 3.4 | | SW | | | 4 | | | | | 0.087 | 2.2 | | |
| Hellevoetsluis | 29.80 | 756.9 | 29.80 | 756.9 | 44.1 | 6.7 | 88 | WSW | | | 4 | | | | | | | | |
| Utrecht | 29.75 | 755.6 | 29.80 | 756.8 | 42.3 | 5.7 | 96 | WSW | | | 3 | | 10 | | | 0.091 | 2.3 | Dull | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instru'tal error and temperature. Inches. | Barometer. Corrected for instru'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.72 | 754.8 | 29.77 | 756.2 | 33.8 | 1.0 | 68 | SE | 5.4 | 2.4 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.86 | 758.4 | 29.90 | 759.4 | 28.6 | — 8.0 | 53 | Calm | 0 | 0 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.63 | 752.7 | 29.79 | 756.6 | 29.3 | — 1.5 | 54 | NE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.78 | 756.5 | 29.83 | 757.6 | 25.2 | — 3.8 | 73 | SSW | 13 | 6 | ..... | ..... | 9 | ..... | ..... | 0.350 | 8.9 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.97 | 761.2 | 30.16 | 766.1 | 68.8 | 14.9 | 80 | WNW | 6.3 | 2.8 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.93 | 734.8 | 29.97 | 761.2 | 54.1 | 12.3 | 76 | SW | 6.9 | 3.1 | ..... | ..... | 9 | WNW | ..... | 0.232 | 5.9 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.04 | 763.0 | 30.13 | 765.2 | 64.4 | 18.0 | 51 | SW | 3.1 | 1.4 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.64 | 752.9 | 30.00 | 762.1 | 56.8 | 13.8 | 55 | NW | 8.7 | 3.9 | ..... | ..... | 10 | ..... | ..... | 0.039 | 1.0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.11 | 764.8 | 30.18 | 766.6 | 68.0 | 17.2 | 65 | WNW | 13.7 | 6.1 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartaolomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | ..... | ..... | 29.88 | 759.0 | 88.7 | 31.5 | ..... | WSW | ..... | ..... | 2 | ..... | 8 | ..... | SW | 2 | SW | D. clouds.... | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da SilvaCosta, Porto de S. Jose de Bissao, Senegambia | ..... | ..... | 29.95 | 760.6 | 82.8 | 28.2 | ..... | SW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 2 | SW | Blue sky..... | A. Ferreira, 2d Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | 29.80 | 756.8 | 86.9 | 30.5 | ..... | WSW | ..... | ..... | 5 | ..... | 6 | ..... | W | ..... | ..... | D. clouds.... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 30.13 | 765.2 | 63.9 | 17.7 | ..... | N | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 1 | ..... | D. clouds.... | J. M. T. Guimaraes, Com'd't. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.35 | 745.5 | 29.79 | 756.7 | 30.2 | — 1.0 | 80 | W | 20 | 9 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.17 | 740.8 | 29.60 | 751.8 | 29.5 | — 1.4 | 72 | W | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light snow.. | Astronomical Obs. |
| Dorpat | 29.39 | 746.6 | 29.65 | 753.1 | 23.9 | — 4.5 | 77 | NW | 7 | 3 | ..... | ..... | 9kn | ..... | ..... | ..... | ..... | Light snow.. | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.58 | 751 4 | 29.60 | 751.8 | 19.0 | — 7.2 | 72 | NE | 7 | 3 | ..... | ..... | 7kn | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.08 | 738.6 | 29.74 | 755.5 | 28.6 | — 1.9 | 78 | WNW | 13 | 6 | ..... | ..... | 7k;ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.89 | 759.2 | 29.96 | 761.0 | 37.4 | 3.0 | 82 | NW | 18 | 8 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kerch | 30.01 | 762.3 | 30.03 | 762.8 | 34.9 | 1.6 | 66 | WNW | 7 | 3 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 28.98 | 736.1 | 29.56 | 750.7 | 21.6 | — 5.8 | 60 | E | 9 | 4 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.52 | 749.7 | 29.73 | 755.1 | 32.4 | 0.2 | 71 | W | 18 | 8 | ..... | ..... | 5 | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 29.47 | 748.5 | 29.49 | 749.0 | 14.4 | — 9.8 | 84 | NNW | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Capt. Ssellwerstow. |
| Tiflis | 28.23 | 717.1 | 29.61 | 752.1 | 64.6 | 18.1 | 29 | S | 4 | 2 | ..... | ..... | 6k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.01 | 762.3 | 29.93 | 760.2 | 35.1 | 1.7 | 68 | NNW | 2 | 1 | ..... | ..... | 10n | ..... | ..... | Blank | Blank | ..... | Capt. Wisganow. |
| Krotkowo* | 29.21 | 741.9 | 29.69 | 754.2 | 31.5 | — 0.3 | 45 | W | 4 | 2 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.29 | 744.0 | 29.57 | 751.1 | 26.8 | — 2.9 | 70 | SW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 28.56 | 725.5 | 29.56 | 750.8 | 26.8 | — 2.9 | 59 | SW | 27 | 12 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.62 | 752.4 | 29.85 | 758.2 | 68.5 | 20.3 | 7 | SSW | 11 | 5 | ..... | ..... | 1c | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.37 | 720.5 | 30.05 | 763.3 | 60.8 | 16.0 | 45 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.83 | 757.6 | 30.36 | 771.1 | 26.1 | — 3.3 | 89 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeneseisk | 30.12 | 765.1 | 30.43 | 772.8 | 34.2 | 1.2 | 60 | W | 2 | 1 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 30.22 | 767.5 | 30.36 | 771.1 | 28.8 | — 1.8 | 70 | SE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455 ? m., or 1,492.7 ? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165.2 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.89 | 759.1 | 29.99 | 761.8 | 54.9 | 12.7 | 67 | ENE | 2.8 | 1.25 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Hazy..... | Antonio Rave, Director. |
| Bilboa, Met. Obs'y | 29 85 | 758 1 | 29.90 | 759.5 | 60.1 | 15.6 | 71 | N | 2.1 | 0.94 | ..... | 2 | 7 | E | ..... | 0.016 | 0.4 | Almost cov'd | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.93 | 684.0 | ..... | ..... | 57.6 | 14.2 | 65 | SW | 12.5 | 5.60 | ..... | 0 | 6 | ..... | ..... | 0 | 0 | Cloudy..... | Domingo Martin y Perez. |
| Madrid, Royal Osservatory | 27.70 | 703.5 | ..... | ..... | 53.8 | 12.1 | 71 | W | 11.2 | 5.0 | ..... | 7 | 0 | N | ..... | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.82 | 757.3 | 29.97 | 761.1 | 66.2 | 19.0 | 65 | E | 6.4 | 2.86 | ..... | 3 | 6 | S | ..... | 0.025 | 0.62 | Almost cov'd | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.99 | 736.3 | 29.88 | 758.9 | 57.2 | 14.0 | 66 | W | 2.5 | 1.1 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.00 | 762.1 | 30.07 | 763.8 | 78.0 | 22.8 | 77 | N | 10.1 | 4.5 | ..... | 5ck | 8k | WSW | NNE | Inap. | Inap. | Cloudy..... | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.86 | 758.6 | 29.91 | 759.9 | 82.4 | 28.0 | 70 | E | 3.4 | 1.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair ..... | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.90 | 759.4 | 30.00 | 761.9 | 59.4 | 15.2 | 80 | W | 12.4 | 5.6 | ..... | 2 | 7 | W | W | 0.185 | 4.7 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I | 29.96 | 761.0 | 30.05 | 763.3 | 74.5 | 23.6 | 95 | SE | 1.6 | 0.70 | ..... | 1c | 1k | E | E | 0.610 | 15.50 | Clear..... | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.80 | 756.8 | 29.84 | 757.8 | 24.1 | — 4.4 | ..... | N | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.84 | 757.8 | 29.89 | 759.1 | 23.4 | — 4.8 | 86 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.012 | 0.3 | ..... | |
| Hernosand | 29.82 | 757.4 | 29.87 | 758.7 | 23.4 | — 4.8 | 53 | N | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.58 | 751.3 | 29.76 | 755.8 | 22.3 | — 5.4 | 83 | N | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.66 | 753.3 | 29.72 | 754.8 | 25.9 | — 3.4 | 78 | NNE | ..... | ..... | 7 | ..... | 5 | ..... | ..... | 0.067 | 1.7 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.72 | 754.9 | 29.80 | 756.8 | 20.8 | — 6.2 | 71 | N | 9.4 | 4.2 | ..... | ..... | 7 | ..... | NNW | 0.002 | 0.04 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.58 | 725.9 | 30.04 | 763.1 | 41.9 | 5.5 | 26 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Zurich | 28.37 | 720.5 | 30.05 | 763.2 | 41.7 | 5.4 | 42 | W | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +1.2 mm.; Thermometer, —2.1 Cent.; Relative Humidity, —35 per cent.

Note.—The rain-fall is measured at Zurich at 7. a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.22 | 767.6 | 39.9 | 4.4 | 58 | N | 7 | 3.0 | ..... | ..... | 3 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.32 | 770.0 | 69.8 | 21.0 | ..... | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 30.15 | 765.8 | 47.7 | 8.7 | ..... | NW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.93 | 760.2 | 30.04 | 763.1 | 61.0 | 16.1 | 82 | SSW | ..... | ..... | 4 | ..... | 10n | ..... | SW | ..... | ..... | Raining | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.28 | 743.7 | 29.35 | 745.5 | 34.7 | 1.5 | 92 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Overcast | Hon. J. Ferguson. |
| Brockville, Ontario | 29.54 | 750.3 | 29.86 | 758.4 | 19 | — 7.2 | ..... | Calm | 0 | 0 | ..... | ..... | 10n | ..... | SW | 0.10 | 2.5 | Light snow | W. R. Bigg. |
| *Chatham, N. B | 29.20 | 744.0 | 29.35 | 745.5 | 35 | 1.7 | 95 | SW | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.51 | 13.0 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 29.37 | 746.0 | 29.41 | 747.0 | 41 | 5.0 | 92 | S | 18 | 8.0 | ..... | ..... | 10n | ..... | ..... | 0.400 | 10.16 | Threatening | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.56 | 750.8 | 29.77 | 756.1 | 17.3 | — 8.2 | 87 | SW | ..... | ..... | 1 | ..... | 10s | ..... | ..... | Inap. | Inap. | Overcast | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | 29.92 | 760.0 | 29.97 | 761.2 | 43.3 | 6.3 | 100 | SW | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.05 | 1.3 | Overcast | W. H. Bevis. |
| *Father Point, Quebec | 29.40 | 746.7 | 29.42 | 747.2 | 30 | — 1.1 | 98 | NE | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | 0.60 | 15.2 | Light snow | J. McWilliams. |
| Fredericton, N. B | 29.40 | 746.7 | 29.47 | 748.5 | 38.9 | 3.8 | 92 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | W | 0.44 | 11.2 | Overcast | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.21 | 741.9 | 30.17 | 766.3 | —18 | —27.8 | 100 | NW | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | James Stewart. |
| Granton, Ontario | 28.74 | 730.0 | 29.92 | 760.0 | 16 | — 8.9 | ..... | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Grant |
| *Halifax, N. S | 29.41 | 747.0 | 29.55 | 750.6 | 38 | 3.3 | 96 | SW | 12 | 5.4 | ..... | ..... | 10n | ..... | SW | 1.12 | 28.4 | Light rain | F. Allison, M. A. |
| Hamilton, Ontario | 29.52 | 749.8 | 29.91 | 759.7 | 21.3 | — 5.9 | 81 | SW | ..... | ..... | 4 | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.48 | 748.8 | 29.84 | 757.9 | 18 | — 7.8 | 95 | NW | 3 | 1.3 | ..... | 5ck | 0 | NW | ..... | Inap. | Inap. | Fair | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.58 | 751.5 | 29.62 | 752.3 | 41.2 | 5.1 | 98 | S | 14 | 6.3 | ..... | ..... | 10n | ..... | ..... | 0.71 | 18.0 | Raining | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 29.52 | 749.8 | 29.73 | 755.1 | 16 | — 8.9 | 74 | W | 13 | 5.8 | ..... | 8ck | 0 | ..... | ..... | 0.21 | 5.3 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.11 | 739.4 | 29.87 | 758.7 | 4 | —15.6 | 90 | NE | 3 | 1.3 | ..... | ..... | 10n | ..... | NE | 0.10 | 2.5 | Light snow | Rev. R. Mosley. |
| Peterboro, Ontario | 29.06 | 738.1 | 29.86 | 758.4 | 17.5 | — 8.1 | 82 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.19 | 741.4 | 29.93 | 760.2 | 20 | — 6.7 | 84 | W | 12 | 5.4 | ..... | ..... | 10n | ..... | W | 0.01 | 0.3 | Light snow | H. Morgan. |
| Port Hastings, N. S | 29.56 | 750.8 | 29.61 | 752.1 | 43.5 | 6.4 | ..... | W | 10 | 4.5 | ..... | ..... | ..... | ..... | ..... | 0.40 | 10.2 | Raining | Peter Grant. |
| Port Stanley, Ontario | 29.27 | 743.4 | 29.96 | 761.0 | 19 | — 7.2 | 81 | W | 24 | 10.7 | ..... | 2k | 0 | W | ..... | Inap. | Inap. | Clear | M. Payne. |
| *Quebec, Quebec | 29.28 | 743.7 | 29.62 | 752.3 | 23 | — 5.0 | 100 | NW | ..... | ..... | 6 | ..... | 10n | ..... | NW | 0.30 | 7.6 | Threatening | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.30 | 744.2 | 29.80 | 756.9 | 4 | —15.6 | 75 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | NW | 0.06 | 1.5 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.45 | 748.0 | 29.50 | 749.3 | 38 | 3.3 | 90 | W | 1 | 0.4 | ..... | ..... | 10ks | ..... | ..... | 0.58 | 14.7 | Cloudy | Dr. Gove. |
| St. John, N. B | 29.34 | 745.2 | 29.50 | 749.3 | 38 | 3.3 | 95 | SW | 8 | 3.6 | ..... | ..... | 10ks | ..... | ..... | 0.38 | 9.7 | Cloudy | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.07 | 738.4 | 29.53 | 757.7 | 17 | — 8.3 | 89 | SW | 29 | 13.0 | ..... | ..... | 8ks | ..... | W | 0.18 | 4.6 | Cloudy | K. Stewart. |
| Stayner, Ontario | 29.00 | 736.6 | 29.84 | 757.9 | 15 | — 9.4 | 93 | W | 11 | 4.9 | ..... | 2k | 0 | W | ..... | 0.12 | 3.0 | Fair | R. J. Cole. |
| Stratford, Ontario | 28.54 | 724.9 | 29.93 | 760.2 | 12.0 | —11.1 | 90 | W | 11 | 4.9 | ..... | 3cs | 3c | W | ..... | 0.25 | 6.3 | Fair | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.64 | 752.8 | 29.66 | 753.9 | 42 | 5.6 | 98 | S | 28 | 10.3 | ..... | ..... | 10n | ..... | ..... | 0.98 | 24.9 | Heavy rain | T. C. Hill. |
| *Toronto, Ontario | 29.47 | 748.5 | 29.88 | 758.9 | 20 | — 6.7 | 86 | W | 12 | 5.4 | ..... | 2k | 5ks | W | W | 0.05 | 1.3 | Light snow | Magnetic Observatory. |
| Windsor, N. S | 29.42 | 747.2 | 29.52 | 749.8 | 42.0 | 5.6 | 87 | SW | 16 | 7.2 | ..... | ..... | 10n | ..... | ..... | 0.31 | 20.6 | Overcast | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 31.0 | — 0.6 | 100 | SE | ..... | ..... | ..... | 10ks | 10ns | ..... | ..... | 0 | 0 | Cloudy | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Cloud. Amount. Up'er 0—10. | Cloud. Amount. Low'r 0—10. | Cloud. Direction. Upper. From— | Cloud. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.62 | 752.3 | 29.86 | 758.4 | 29 | — 1.7 | 56 | NW | 8 | 3.6 | | 5k | 0 | NW | | 0.39 | 9.9 | Fair | |
| Alpena, Michigan | 29.24 | 742.7 | 29.94 | 760.5 | 10 | —12.2 | 79 | W | 11 | 4.9 | | 0 | 5s | | W | 0.02 | 0.5 | Fair | |
| Atlanta, Georgia | 28.97 | 735.8 | 30.16 | 766.1 | 37 | 2.8 | 87 | NW | 16 | 7.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 29.96 | 761.0 | 29.98 | 761.5 | 32 | 0.0 | 69 | NW | 8 | 3.6 | | 0 | 0 | | | 0.10 | 2.5 | Clear | |
| Augusta, Georgia | 29.95 | 760.7 | 30.13 | 765.3 | 47 | 8.3 | 70 | NW | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Baltimore, Maryland | 29.97 | 761.2 | 30.02 | 762.5 | 38 | 3.3 | 54 | W | 8 | 3.6 | | Haze | Sm'e | Calm | Calm | 0.15 | 3.8 | Smoky | |
| Barnegat, New Jersey | 29.92 | 760.0 | 29.94 | 760.5 | 36 | 2.2 | 61 | NW | 16 | 7.2 | | 0 | 0 | | | 0.04 | 1.0 | Clear | |
| Bismarck, Dakota | 28.35 | 720.1 | 30.20 | 767.1 | — 9 | —22.8 | 100 | W | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Boerne, Texas | 28.60 | 726.4 | 29.95 | 760.7 | 45 | 7.2 | 92 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Boise City, Idaho | 27.02 | 686.3 | 29.98 | 761.5 | 38 | 3.3 | 81 | N | 3 | 1.3 | | 5k | 0 | SW | | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.63 | 752.6 | 29.78 | 756.4 | 32 | 0.0 | 64 | W | 16 | 7.2 | | 0 | 0 | | | 0.22 | 5.6 | Clear | |
| Brackettville, Texas | 28.88 | 733.5 | 29.90 | 759.4 | 60 | 15.6 | 71 | SE | 4 | 1.8 | | 0 | 8s | | Calm | 0 | 0 | Fair | |
| Breckenridge, Minnesota | 29.16 | 740.7 | 30.30 | 769.6 | — 7 | —21.1 | 90 | W | 12 | 5.4 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Brownsville, Texas | 30.05 | 763.3 | 30.10 | 764.5 | 62 | 16.7 | 94 | Calm | 0 | 0 | | | Fog | | Calm | 0 | 0 | Foggy | |
| Buffalo, New York | 29.16 | 740.7 | 29.90 | 759.4 | 20.5 | — 6.4 | 78 | SW | 9 | 4.0 | | | 10n | | SW | 0.04 | 1.0 | Light snow. | |
| Burkes, Arizona | | | | | 60 | 15.6 | 24 | S | | | 1 | 5c | 0 | E | | 0 | 0 | Fair | |
| Burlington, Vermont | 29.50 | 749.3 | 29.80 | 756.9 | 22 | — 5.6 | 72 | W | 4 | 1.8 | | 2k | 1s | W | Calm | 0.20 | 5.1 | Fair | |
| Cairo, Illinois | 29.89 | 759.2 | 30.31 | 769.9 | 33 | 0.6 | 70 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Camp Apache, Arizona | | | | | | | | | | | | | | | | | | | |
| Camp Grant, Arizona | 25.16 | 639.0 | 29.96 | 761.0 | 57 | 13.9 | 15 | Calm | 0 | 0 | | 8k | 0 | SW | | 0 | 0 | Cloudy | |
| Camp Verde, Arizona | | | | | 42 | 5.6 | 42 | NW | | | 2 | 5ck | 5s | Calm | Calm | 0 | 0 | Cloudy | |
| Campo, California | 27.38 | 695.4 | 29.95 | 760.7 | 32 | 0.0 | 69 | E | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 29.99 | 761.7 | 30.00 | 762.0 | 46 | 7.8 | 92 | NE | 14 | 6.3 | | 5cs | Haze | Calm | | 0.39 | 9.9 | Fair | |
| Cape Henry, Virginia | 30.00 | 762.0 | 30.02 | 762.5 | 43 | 6.1 | 75 | N | 10 | 4.5 | | 0 | 0 | | | 0.66 | 16.8 | Clear | |
| Cape Lookout, N. Carolina | 29.96 | 761.0 | 29.98 | 761.5 | 51 | 10.6 | 93 | N | 24 | 10.7 | | | 8ks | | N | 0.21 | 5.3 | Cloudy | |
| Cape May, New Jersey | 29.96 | 761.0 | 29.99 | 761.7 | 36 | 2.2 | 53 | NW | 25 | 11.2 | | 0 | 0 | | | 0.10 | 2.5 | Clear | |
| Castroville, Texas | 29.28 | 743.7 | 29.99 | 761.7 | 53 | 11.7 | 86 | W | 2 | 0.9 | | | 10ks | | SW | 0.02 | 0.5 | Cloudy | |
| Charleston, South Carolina | 30.00 | 762.0 | 30.06 | 763.5 | 53 | 11.7 | 54 | NW | 5 | 2.2 | | 0 | Fog | | Calm | 0.24 | 6.1 | Fair | |
| Cheyenne, Wyoming | 23.95 | 608.3 | 29.89 | 759.2 | 17 | — 8.3 | 83 | S | 8 | 3.6 | | 5cs | 0 | NW | | 0 | 0 | Fair | |
| Chicago, Illinois | 29.40 | 746.7 | 30.15 | 765.8 | 17 | — 8.3 | 83 | NW | 9 | 4.0 | | 2cs | 2ks | Calm | NW | 0 | 0 | Fair | |
| Cincinnati, Ohio | 29.55 | 750.6 | 30.24 | 768.1 | 27 | — 2.8 | 76 | W | 6 | 2.7 | | 7c | 0 | W | | 0 | 0 | Fair | |
| Cleveland, Ohio | 29.25 | 743.7 | 30.06 | 763.5 | 20 | — 6.7 | 56 | SW | 18 | 8.0 | | 8k | 0 | W | | 0.05 | 1.3 | Fair | |
| Coleman City, Texas | 28.22 | 716.8 | 29.93 | 760.2 | 41 | 5.0 | 91 | S | 2 | 0.9 | | 5c | 0 | Calm | | 0 | 0 | Fair | |
| Columbus, Ohio | 29.27 | 743.4 | 30.16 | 766.1 | 23 | — 5.0 | 73 | W | 16 | 7.2 | | 5cs | 0 | Calm | | 0 | 0 | Fair | |
| Concho, Texas | 28.06 | 712.7 | 29.78 | 756.4 | 39 | 3.9 | 55 | NE | 2 | 0.9 | | 5c | 0 | NE | | 0 | 0 | Fair | |
| Corsicana, Texas | 29.61 | 752.1 | 30.09 | 764.3 | 43 | 6.1 | 59 | N | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Davenport, Iowa | 29.56 | 750.8 | 30.27 | 768.8 | 15 | —10.6 | 81 | NW | 13 | 5.8 | | 1cs | 0 | Calm | | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.38 | 644.6 | | | 8 | —13.3 | 78 | N | 2 | 0.9 | | 0 | 5s | | NW | 0.02 | 0.5 | Fair | |
| Decatur, Texas | 28.97 | 735.8 | 30.19 | 766.8 | 40 | 4.4 | 82 | NE. | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Denison, Texas | 29.30 | 744.2 | 30.12 | 765.0 | 41 | 5.0 | 74 | NE | 3 | 1.3 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.69 | 627.1 | 29.91 | 759.7 | 22 | — 5.6 | 86 | N | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Des Moines, Iowa | 29.36 | 745.7 | 30.34 | 770.6 | 10 | —12.2 | 79 | N | 5 | 2.2 | | | 10s | | N | 0.01 | 0.3 | Cloudy | |
| Detroit, Michigan | 29.25 | 742.9 | 29.96 | 761.0 | 19 | — 7.2 | 85 | NW | 14 | 6.3 | | | 10n | | W | 0.05 | 1.3 | Light snow. | |
| Dodge City, Kansas | 27.41 | 696.2 | 29.83 | 757.7 | 23 | — 5.0 | 86 | E | 12 | 5.4 | | 0 | 1s | | E | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.49 | 749.0 | 30.26 | 768.6 | 11 | —11.7 | 60 | NW | 8 | 3.6 | | 2cs | 1ks | Calm | S | 0 | 0 | Fair | |
| Duluth, Minnesota | 29.42 | 747.2 | 30.19 | 766.8 | — 5 | —20.6 | 63 | SW | 6 | 2.7 | | 0 | 0 | | | 0.01 | 0.3 | Clear | |
| Eagle Pass, Texas | 29.22 | 747.2 | 29.96 | 761.0 | 59 | 15.0 | 82 | SE | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Eastport, Maine | 29.46 | 748.3 | 29.53 | 750.0 | 38 | 3.3 | 91 | W | 6 | 2.7 | | | 10s | | SW | 0.62 | 15.7 | Clearing | |
| Edinburg, Texas | | | | | 64 | 17.8 | 89 | Calm | | | 0 | | Fog | | | 0 | 0 | Foggy | |
| El Paso, Texas | 26.15 | 664.2 | | | 45 | 7.2 | 45 | Calm | 0 | 0 | | 5cs | 0 | Calm | | 0 | 0 | F. fr | |
| Erie, Pennsylvania | 29.22 | 742.2 | 29.97 | 761.2 | 23 | — 5.0 | 86 | W | 12 | 5.4 | | 2c | 5s | W | Calm | 0.04 | 1.0 | Cloudy | |
| Escanaba, Michigan | 29.37 | 746.0 | 30.10 | 764.5 | 0 | —17.8 | 55 | W | 15 | 6.7 | | | 0 | | | 0.02 | 0.5 | Clear | |
| Florence, Arizona | 28.42 | 721.9 | 30.02 | 762.5 | 55 | 12.8 | 33 | N | 2 | 0.9 | | 5ck | 0 | W | | 0 | 0 | Fair | |
| Fort Buford, Dakota | 28.18 | 715.8 | | | — 9 | —22.8 | 56 | NW | 12 | 5.4 | | 1c | 0 | NW | | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.48 | 647.2 | 29.55 | 750.6 | 39 | 3.9 | 38 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.16 | 639.0 | 30.12 | 765.0 | 55 | 12.8 | 68 | SW | 4 | 1.8 | | 0 | 5ks | | SW | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.55 | 750.6 | 30.11 | 764.8 | 39 | 3.9 | 55 | E | 6 | 2.7 | | 5ck | Sm'e | W | E | 0 | 0 | Fair | |
| Fort Griffin, Texas | 28.73 | 729.7 | 30.05 | 763.3 | 34 | 1.1 | 70 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.65 | 702.3 | | | 8 | —13.3 | 78 | NW | 2 | 0.9 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Fort McKavett, Texas | 27.74 | 704.6 | 29.65 | 753.1 | 53 | 11.7 | 80 | S | 12 | 5.4 | | 5c | 2s | S | Calm | 0 | 0 | Fair | |
| Fort St. Michael, Alaska | | | | | | | | | | | | | | | | | | | |
| Fort Sill, Indian Territory | 28.84 | 732.5 | 30.00 | 762.0 | 33 | 0.6 | 79 | E | 2 | 0.9 | | 0 | 5s | | Calm | 0 | 0 | Fair | |
| Fort Stevenson, Dakota | 28.32 | 719.3 | | | —16 | —26.7 | 100 | NW | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fredericksburg, Texas | 28.28 | 718.3 | 29.85 | 758.2 | 51 | 10.6 | 79 | Calm | 0 | 0 | | 5cs | 0 | Calm | | 0 | 0 | Fair | |
| Galveston, Texas | 30.08 | 764.0 | 30.12 | 765.0 | 64 | 17.8 | 83 | S | 2 | 0.9 | | 0 | Haze | | | 0 | 0 | Clear | |
| Graham, Texas | 28.95 | 735.3 | 30.05 | 763.3 | 34 | 1.1 | 61 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.37 | 746.0 | 30.07 | 763.8 | 16 | — 8.9 | 66 | NW | 32 | 14.3 | | | 10s | | NW | 0.02 | 0.5 | Threatening | |
| Indianapolis, Indiana | 29.34 | 745.2 | 30.16 | 766.1 | 26 | — 3.3 | 75 | SW | 6 | 2.7 | | 2cs | 2s | Calm | Calm | Inap. | Inap. | Fair | |
| Indianola, Texas | 30.10 | 764.5 | 30.13 | 765.3 | 64 | 17.8 | 89 | S | 14 | 6.3 | | 1c | 0 | Calm | | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.88 | 733.5 | 30.04 | 763.0 | 40 | 4.4 | 56 | SE | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.11 | 764.8 | 30.13 | 765.3 | 59 | 15.0 | 54 | NW | 4 | 1.8 | | 0 | 0 | | | 0.32 | 8.1 | Clear | |
| Keokuk, Iowa | 29.55 | 750.6 | 30.22 | 767.6 | 20 | — 6.7 | 70 | N | 12 | 5.4 | | | 10s | | W | 0 | 0 | Cloudy | |
| Key West, Florida | 30.06 | 763.5 | 30.10 | 764.5 | 69 | 20.6 | 80 | N | 14 | 6.3 | | 5k | 0 | N | | 0.14 | 3.6 | Fair | |
| Kittyhawk North Carolina | 29.98 | 761.5 | 30.00 | 762.0 | 44 | 6.7 | 84 | NE | 10 | 4.5 | | 0 | Haze | | Calm | 1.19 | 30.2 | Clear | |
| Knoxville, Tennessee | 29.24 | 742.7 | 30.31 | 769.9 | 30.5 | — 0.8 | 53 | N | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 29.42 | 747.2 | 30.23 | 767.8 | 6 | —14.4 | 76 | N | 9 | 4.0 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| La Mesilla, New Mexico | 26.01 | 660.6 | 30.16 | 766.1 | 44 | 6.7 | 45 | Calm | 0 | 0 | | | 10s | | NW | 0 | 0 | Cloudy | |
| Laredo, Texas | 29.61 | 752.1 | 29.95 | 760.7 | 62 | 16.7 | 88 | SE | 6 | 2.7 | | 5ck | 0 | Calm | | 0 | 0 | Fair | |
| Leavenworth, Kansas | 29.35 | 745.5 | 30.26 | 768.6 | 23 | — 5.0 | 73 | N | 12 | 5.4 | | 0 | 4s | | | 0 | 0 | Fair | |
| Los Angeles, California | 29.63 | 752.6 | 29.97 | 761.2 | 54.5 | 12.5 | 87 | E | 3 | 1.3 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Louisville, Kentucky | 29.66 | 753.4 | 30.25 | 768.3 | 30 | — 1.1 | 57 | SW | 5 | 2.2 | | 1cs | 0 | Calm | | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.36 | 745.7 | 30.05 | 763.3 | 43 | 6.1 | 35 | NW | 6 | 2.7 | | 2cs | 0 | Calm | | Inap. | Inap. | Clear | |
| Madison, Wisconsin | 29.13 | 739.9 | 30.22 | 767.6 | 6 | —14.4 | 76 | NW | 20 | 8.9 | | 0 | 0 | | | 0.02 | 0.5 | Clear | |
| Marquette, Michigan | 29.28 | 743.7 | 30.06 | 763.5 | 0 | —17.8 | 39 | W | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Mason, Texas | 28.38 | 720.8 | 30.17 | 766.3 | 44 | 6.7 | 84 | Calm | 0 | 0 | | 2cs | 0 | W | | 0 | 0 | Fair | |
| Memphis, Tennessee | 29.93 | 760.2 | 30.27 | 768.8 | 34 | 1.1 | 52 | NE | 6 | 2.7 | | 5ck | Sm'e | NW | Calm | 0 | 0 | Fair | |
| Milwaukee, Wisconsin | 29.36 | 745.7 | 30.16 | 766.1 | 8 | —13.3 | 57 | NW | 21 | 9.4 | | 0 | 1ks | | Calm | 0 | 0 | Clear | |
| Mobile, Alabama | 30.16 | 766.1 | 30.21 | 767.3 | 51 | 10.6 | 79 | N | 8 | 3.6 | | 0 | Haze | | | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.99 | 761.7 | 30.23 | 767.8 | 45 | 7.2 | 53 | N | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.99 | 736.3 | 30.08 | 764.0 | 35 | 0.6 | 51 | SW | 14 | 6.3 | | 1k | 0 | SW | | 0 | 0 | Clear | |
| Mt. Washington, N. H. | 23.16 | 588.2 | 29.52 | 749.8 | 17 | — 8.3 | 100 | NW | 60 | 26.8 | | | Fog | | NW | 0.51 | 13.0 | Foggy | |
| Nashville, Tennessee | 29.74 | 755.4 | 30.31 | 769.9 | 30 | — 1.1 | 78 | Calm | 0 | 0 | | 0 | Sm'e | | | 0 | 0 | Smoky | |
| New Haven, Connecticut | 29.75 | 755.6 | 29.87 | 758.7 | 36 | 2.2 | 71 | NW | 3 | 1.3 | | 0 | 0 | | | 0.25 | 6.3 | Clear | |
| New London, Connecticut | 29.81 | 757.2 | 29.86 | 758.4 | 37 | 2.8 | 53 | NW | 8 | 3.6 | | 0 | 0 | | | 0.06 | 1.5 | Clear | |
| New Orleans, Louisiana | 30.10 | 764.5 | 30.16 | 766.1 | 55 | 12.8 | 74 | N | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.77 | 756.1 | 29.82 | 757.4 | 35 | 1.7 | 61 | W | 20 | 8.9 | | 0 | 0 | | | 0.39 | 9.9 | Clear | |
| New York, New York | 29.75 | 755.6 | 29.93 | 760.2 | 35 | 1.7 | 61 | NW | 10 | 4.5 | | 0 | Sm'e | | Calm | 6 | 0 | Clear | |
| Norfolk, Virginia | 29.96 | 761.0 | 30.02 | 762.5 | 44 | 6.7 | 68 | N | 9 | 4.0 | | 0 | 0 | | | 0.55 | 14.0 | Clear | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.22 | 691.4 | 30.00 | 762.0 | 15 | — 9.4 | 65 | SE | 12 | 5.4 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 29.95 | 760.7 | 29.98 | 761.5 | 44.3 | 6.8 | 84 | SW | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 29.12 | 739.6 | 30.34 | 770.6 | 10 | —12.2 | 90 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Heavy snow | |
| Oswego, New York | 29.54 | 750.3 | 29.88 | 758.9 | 29 | — 1.7 | 78 | W | 22 | 9.8 | ..... | 10c | 0 | W | ..... | 0.02 | 0.5 | Cloudy | |
| Pembina, Dakota | 29.25 | 742.9 | 30.23 | 767.8 | —20 | —28.9 | 100 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pa | 29.93 | 760.2 | 29.98 | 761.5 | 34 | 1.1 | 61 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.21 | 5.3 | Clear | |
| Phœnix, Arizona | 28.73 | 729.7 | 30.53 | 775.4 | 55 | 12.8 | 33 | Calm | 0 | 0 | ..... | 2ck | 0 | SW | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.61 | 447.3 | 29.82 | 757.4 | 9 | —12.8 | 36 | NW | 24 | 10.7 | ..... | 0 | 2s | ..... | NW | 0 | 0 | Clear | |
| Pioche, Nevada | 23.97 | 608.8 | 29.74 | 755.4 | 39 | 3.9 | 25 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.22 | 742.2 | 30.07 | 763.8 | 24 | — 4.4 | 74 | W | 15 | 6.7 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| Port Huron, Michigan | 29.28 | 742.4 | 29.94 | 760.5 | 17 | — 8.3 | 83 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Portland, Maine | 29.59 | 751.6 | 29.64 | 752.8 | 38 | 3.3 | 81 | W | 11 | 4.9 | ..... | 5k | 0 | Calm | ..... | 1.01 | 25.7 | Fair | |
| Portland, Oregon | 30.01 | 762.2 | 30.11 | 764.8 | 46.0 | 7.8 | 84 | NW | 1 | 0.4 | ..... | 0 | 9s | ..... | ..... | 0 | 0 | Cloudy | |
| Prescott, Arizona | 24.69 | 627.1 | 30.05 | 763.3 | 36 | 2.2 | 45 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | | | | | | | | | | | | | | | | | | | |
| Punta Rassa, Florida | 30.12 | 765.0 | 30.18 | 766.3 | 65 | 18.3 | 78 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Red Bluff, California | 29.57 | 751.1 | 29.93 | 760.2 | 51 | 10.6 | 79 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rio Grande City, Texas | 29.89 | 759.2 | 30.11 | 764.8 | 62 | 16.7 | 94 | E | 6 | 2.7 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Rochester, New York | 29.26 | 743.2 | 29.91 | 759.7 | 22 | — 5.6 | 72 | W | 16 | 7.2 | ..... | 2k | 0 | W | ..... | 0.02 | 0.5 | Clear | |
| Roseburg, Oregon | 29.52 | 749.8 | 30.09 | 764.3 | 49.0 | 9.4 | 93 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sacramento, California | 29.82 | 757.4 | 29.99 | 759.4 | 51.5 | 10.8 | 90 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.63 | 752.6 | 30.24 | 768.1 | 33 | 0.6 | 79 | S | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| St. Marks, Florida | 30.16 | 766.1 | 30.17 | 766.3 | 61 | 16.6 | 72 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.29 | 744.0 | 30.21 | 767.3 | 5 | —15.0 | 50 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Salt Lake City, Utah | 25.54 | 648.7 | 29.87 | 758.7 | 40 | 4.4 | 39 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.38 | 746.2 | 29.97 | 761.2 | 54 | 12.2 | 80 | Calm | 0 | 0 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.94 | 760.5 | 30.02 | 762.5 | 54.5 | 12.5 | 93 | SE | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.34 | 745.2 | 30.05 | 763.3 | 23 | — 5.0 | 73 | SW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Sandy Hook, New Jersey | 29.89 | 759.2 | 29.92 | 760.0 | 39 | 3.8 | 55 | NW | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Francisco, California | 29.88 | 758.9 | 29.95 | 760.7 | 51.5 | 11.0 | 86 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 23.20 | 589.3 | 29.74 | 755.4 | 32 | 0.0 | 30 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.02 | 762.5 | 30.12 | 765.0 | 53 | 11.7 | 61 | NW | 8 | 3.6 | ..... | 0 | Haze | ..... | Calm | 0.53 | 13.5 | Clear | |
| Shreveport, Louisiana | 29.91 | 759.7 | 30.14 | 765.5 | 50 | 10.0 | 68 | E | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Silver City, New Mexico | 24.25 | 615.9 | 30.48 | 772.9 | 45 | 7.2 | 31 | NW | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Smithville, North Carolina | 30.02 | 762.5 | 30.06 | 763.5 | 50 | 10.0 | 72 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.19 | 4.8 | Clear | |
| Springfield, Massachusetts | 29.70 | 754.4 | 29.83 | 757.7 | 34 | 1.1 | 62 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Stockton, Texas | 26.92 | 683.8 | 29.92 | 760.0 | 48 | 8.9 | 78 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.71 | 754.6 | 29.76 | 755.9 | 34 | 1.1 | 61 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.92 | 23.4 | Clear | |
| Toledo, Ohio | 29.30 | 744.2 | 30.01 | 762.2 | 26 | — 3.3 | 88 | SW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Tucson, Arizona | 27.47 | 697.7 | 30.02 | 762.5 | 53 | 11.7 | 42 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Umatilla, Oregon | 29.63 | 752.6 | 30.02 | 762.5 | 52.0 | 11.1 | 54 | SW | 28 | 12.5 | ..... | 0 | 5ks | ..... | W | 0 | 0 | Fair | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 17 | — 8.3 | 83 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Uvalde, Texas | 29.16 | 740.7 | 29.97 | 761.2 | 60 | 15.6 | 77 | Calm | 0 | 0 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.94 | 760.5 | 30.21 | 767.3 | 46 | 7.8 | 69 | SE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Virginia City, Montana | 24.06 | 611.1 | 29.54 | 750.3 | 30 | — 1.1 | 78 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Visalia, California | 29.54 | 750.3 | 29.91 | 759.7 | 50.6 | 10.3 | 86 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 29.89 | 759.2 | 30.01 | 762.2 | 37 | 2.8 | 49 | NW | 14 | 6.3 | ..... | 2ck | 0 | W | ..... | 0.15 | 3.8 | Clear | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 32 | NW | ..... | ..... | 1 | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Wilmington, N. Carolina | 29.95 | 760.7 | 30.03 | 762.8 | 49 | 9.4 | 71 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.20 | 5.1 | Clear | |
| Winnemucca, Nevada | 25.68 | 649.7 | 29.94 | 760.5 | 31 | — 0.6 | 69 | SW | 8 | 3.6 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Wood's Holl, Mass | 29.78 | 756.4 | 29.82 | 757.4 | 34 | 1.1 | 69 | W | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0.54 | 13.7 | Clear | |
| Yankton, Dakota | 28.99 | 736.3 | 30.43 | 772.9 | 6 | —14.4 | 76 | NW | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.68 | 753.9 | 29.84 | 757.9 | 59 | 15.0 | 54 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.62 | 724.4 | 29.98 | 761.5 | 37 | 2.8 | 54 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.01 | 762.2 | 30.06 | 763.5 | 74 | 23.3 | 76 | N | 4.8 | 2.1 | ..... | 0 | 8ks | ..... | N | 0 | 0 | Cloudy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.28 | 642.1 | ..... | ..... | 65.0 | 18.3 | 85 | Calm | 0 | 0 | ..... | ..... | 10s;ks | ..... | ..... | 0.01 | 0.3 | ..... | Thomas Herran. |
| Navassa, W. I | 29.97 | 761.2 | 30.05 | 763.3 | 78.2 | 25.7 | ..... | SE | 4 | 1.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Partly cl'd'y | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.01 | 762.2 | 30.01 | 762.2 | 82 | 27.8 | 83 | E | ..... | ..... | 2 | 3c | 5k | E | ..... | 0 | 0 | Fair | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,100. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,642 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,385.8 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.855 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.46 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.90 | 759.4 | 53 | 11.7 | 52 | 11.1 | 93 | WSW | 12 | 5.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 30.25 | 768.3 | 54 | 12.2 | 54 | 12.2 | 80 | NE | 6 | 2.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 29.85 | 758.2 | 62 | 16.7 | 28 | — 2.2 | 77 | W | 6 | 2.7 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan.....* | 29.91‡ | 759.7‡ | ..... | ..... | 36 | 2.2 | 55 | N | ..... | ..... | 5 | ..... | 9ks | ..... | N | 0 | 0 | ..... | ..... | Cloudy..... | |
| Adams, Panama ..... | 30.00 | 762.0 | 80 | 26.7 | 78 | 25.6 | 95 | NW | ..... | ..... | 2 | ..... | 5 | ..... | N;W | ..... | ..... | ..... | ..... | Fair..... | |
| Alaska..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Alliance, Genoa, Italy..... | 30.09‡ | 764.3‡ | ..... | ..... | 54 | 12.2 | 49 | N | ..... | ..... | 1-2 | ..... | 3 | ..... | N | ..... | ..... | ..... | ..... | Clear..... | |
| Ashuelot, Hong-Kong, China. ..... | 30.02‡ | 762.5‡ | ..... | ..... | 60 | 15.6 | 76 | E | ..... | ..... | 4 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy ..... | |
| Canonicus, New Orleans, La..... | 30.10 | 764.5 | 45 | 7.2 | 56 | 13.3 | 81 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Colorado, New York, N. Y..... | 29.91 | 759.7 | 38 | 3.3 | 36 | 2.2 | 100 | WNW | 7 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Hazy..... | |
| Constitution Lisbon, Portugal..... | 29.99‡ | 761.7‡ | ..... | ..... | 60 | 15.6 | 82 | WNW | ..... | ..... | 2 | ..... | 8 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Despatch, N. 39° 33′, E. 15° 02′ 30″... | 30.15‡ | 765.8‡ | ..... | ..... | 57 | 13.9 | 58 | SE | ..... | ..... | 3 | ..... | 5 | ..... | SE | ..... | ..... | Smooth | ..... | Fair..... | |
| Franklin, Norfolk, Va..... | 30.13 | 765.3 | 61 | 16.1 | 45 | 7.2 | 76 | N | 7.0 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0.4 | 10. | ..... | ..... | Clear ..... | |
| Gettysburg, Genoa, Italy ..... | 29.97‡ | 761.2‡ | ..... | ..... | 59 | 15.0 | 59 | N | ..... | ..... | 2 | ..... | 2 | ..... | N | 0 | 0 | ..... | ..... | Clear..... | |
| Hartford, Montevideo, Uruguay... | 30.23 | 767.8 | 68 | 20.0 | 68 | 20.0 | 70 | NE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Lackawana, N. 0° 52′, W. 80° 36′...*... | 29.68‡ | 758.9‡ | ..... | ..... | 77 | 25.0 | 86 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear ..... | |
| Michigan, Erie, Pa.....† | 29.96 | 761.0 | ..... | ..... | 23 | — 5.0 | 73 | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Monocacy, Shanghai, China.....* | 30.36‡ | 770.9‡ | ..... | ..... | 44 | 6.7 | 84 | ESE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monongehela, Yokohama, Japan ....*.. | 29.93‡ | 760.2‡ | ..... | ..... | 38 | 3.3 | 35 | N | ..... | ..... | 3-6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Squally..... | |
| New Hampshire, Port Royal, S. C..... | 30.12 | 765.0 | 55 | 12.8 | 55 | 12.8 | 62 | NW | 14 | 6.3 | ..... | ..... | 0 | ..... | ..... | 0.30 | 7.6 | ..... | ..... | Misty..... | |
| Onward, Callao, Peru.....†... | 30.05 | 763.3 | ..... | ..... | 67 | 19.4 | 89 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Cloudy..... | |
| Palos, Tientsin, China..... | 30.30 | 769.6 | 27 | — 2.8 | 29 | — 1.7 | 88 | ESE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy ..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 38 | 3.3 | 72 | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Fair ..... | |
| Pensacola, Valparaiso, Chili..... | 29.98‡ | 761.5‡ | ..... | ..... | 62 | 16.7 | 88 | N | 3 | 1.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair ..... | |
| Plymouth, Boston, Mass..... ..... | 29.77‡ | 756.1‡ | ..... | ..... | 34 | 1.1 | 100 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Powhatan, N. 14° 39′, W. 65° 54′..... | 30.01‡ | 762.2‡ | ..... | ..... | 80 | 26.7 | 78 | ENE | ..... | ..... | 3 | ..... | 5 | ..... | ENE | ..... | ..... | Long | N | Fair ..... | |
| Quinnebaug, Port Mahon, Minorca Id | 30.05‡ | 763.3‡ | ..... | ..... | 63 | 17.2 | 57 | WNW | ..... | ..... | 1 | ..... | 2 | ..... | NW | ..... | ..... | Smooth | ..... | Clear ..... | |
| Ranger. N. 27° 34′ 42″, E. 122° 20′ 00″*. | 30.31‡ | 769.9‡ | ..... | ..... | 65 | 18.3 | 84 | NE | ..... | ..... | 4 | ..... | 10 | ..... | Calm | ..... | ..... | Mod'ate | ..... | Raining..... | |
| Richmond, Suez Canal..... | 30.09‡ | 764.3‡ | ..... | ..... | 72 | 22.2 | 50 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Rio Bravo, Brownsville, Texas..... | 30.07 | 763.8 | 63 | 17.2 | 60 | 15.6 | 100 | SE | ..... | ..... | 1 | ..... | 2 | ..... | N | ..... | ..... | ..... | ..... | Fair ..... | |
| Santee, Annapolis, Md... ..... | 30.02‡ | 762.5‡ | ..... | ..... | 41 | 5.0 | 50 | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0.08 | 2.0 | ..... | ..... | Clear..... | |
| Saratoga, Hampton Roads, Va..... | 30.10 | 764.5 | ..... | ..... | 44 | 6.7 | 76 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | Heavy | Heavy | ..... | ..... | Hazy..... | |
| St. Louis, League Island, Pa..... | 29.90 | 759.4 | 64 | 17.8 | 37 | 2.8 | 71 | NW | 6 | 2.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Supply, N. 38° 35′, W. 72° 27′..... | 29.93‡ | 760.2‡ | ..... | ..... | 45 | 7.2 | 76 | NNW | ..... | ..... | 4 | ..... | 2 | ..... | NW | ..... | ..... | Mod'ate | NW | Clear. ..... | |
| Trenton Naples, Italy..... | 30.08‡ | 764.0‡ | ..... | ..... | 69 | 20.6 | 56 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | None | ..... | Clear..... | |
| Tuscarora, Off Mazatlan, Mex .. | 29.96‡ | 761.0‡ | ..... | ..... | 78 | 25.6 | 78 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Wabash, Boston, Mass..... | 29.77‡ | 756.1‡ | ..... | ..... | 32 | 0.0 | 90 | NW | 12 | 5.4 | ..... | ..... | 0 | ..... | ..... | 0.2 | 5. | ..... | ..... | Clear. ..... | |
| Wyoming, Constantinople, Turkey | 30.23‡ | 767.5‡ | ..... | ..... | 44 | 6.7 | ?? | NE | ..... | ..... | 2-4 | ..... | 10 | ..... | NE | ..... | ..... | Smooth | NE | Cloudy ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Colima, N. 32° 57', W. 120° 24'...† | | 29.96‡ | 761.0‡ | 68 | 14.4 | 94 | NNW | | | 2 | | 10 | | Calm | 0 | Mod'ate | NNW | Overcast | Capt. Whitebury |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Granada, Capt. Austin, La Libertad, San Salvador...† | | 30.16‡ | 766.1‡ | 78 | 25.6 | ?? | NNW | | | 3 | | 0 | | | | Light | S | Hazy | Capt. A. Fuller. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |
| S. S. Zealandia | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; and no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, Hong-Kong, China...* | | 29.91‡ | 759.7‡ | 63 | 17.2 | 67 | E | | | 4 | | ks | | E | | Rough | NNE | D. Clouds | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 29° 00', E. 126° 40'...† | | 30.12‡ | 765.0‡ | 54 | 12.2 | ?? | N | | | 5 | | k | | N | Blank | Smooth | | Overcast | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 24° 22', W. 84° 10' | | 30.15‡ | 765.8‡ | 73.0 | 22.8 | 85 | N | | | 5 | | 2 | | N | | Mod'ate | N | Hazy | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Lo'wr 0—10. | Upper. From— | Lower. From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Liverpool | | 29.71‡ | 754.6‡ | 39 | 3.9 | | WNW | | | 6 | | 5 | | WNW | Light | | | Partly cl'dy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

## RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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## ALLAN LINE MARINE SERIES.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

## MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, N. 32° 33′, W. 79° 30′ | | 29.98‡ | 761.5‡ | 58 | 14.4 | 70 | NW | 11 | 4.9 | | | 0 | | | 0.35 in. or 8.9mm. | Short | NW | Clear | Capt. James Jorgensen. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

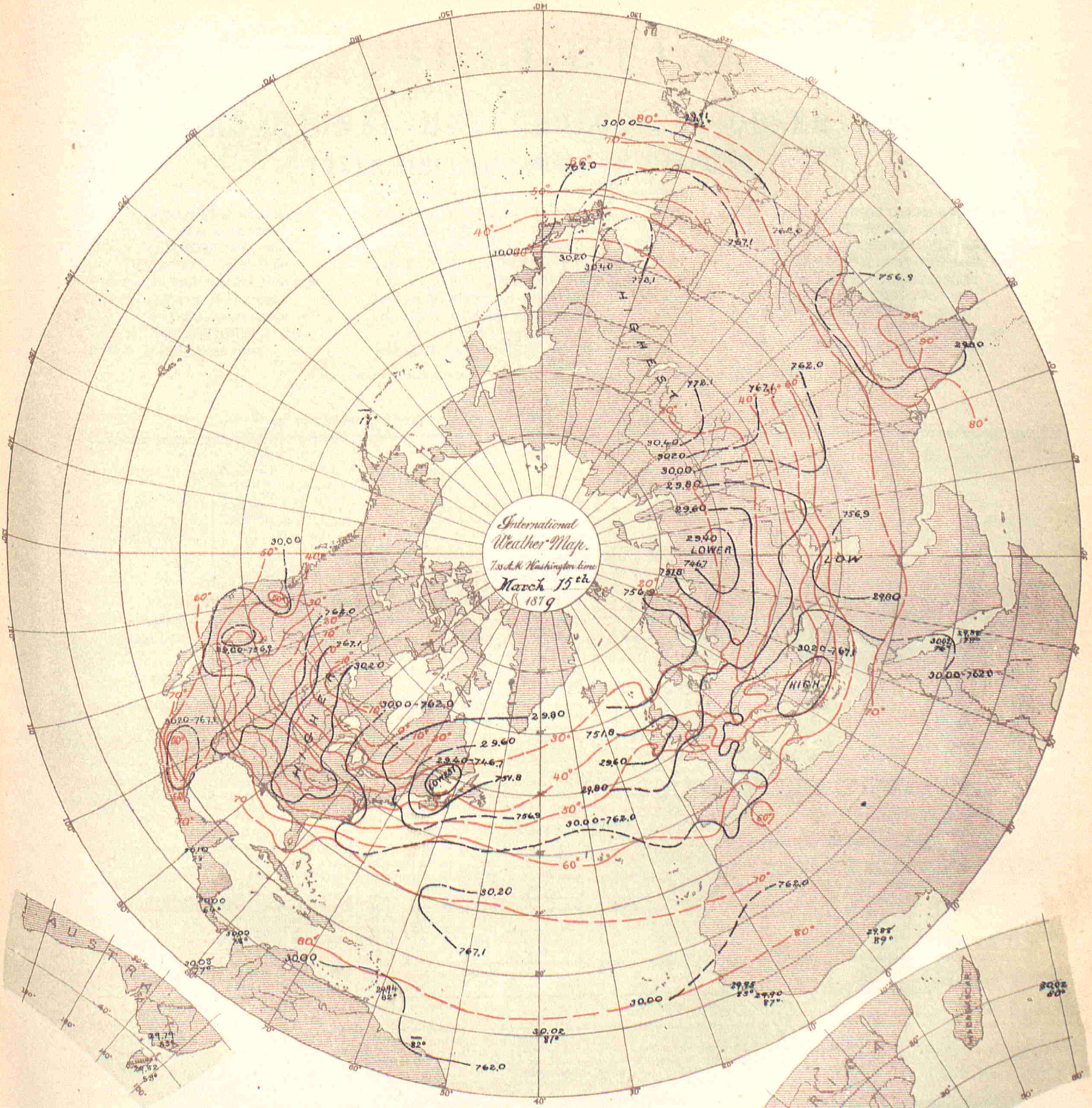
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS

## TAKEN SIMULTANEOUSLY ON MARCH 16, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 29.95 | 760.8 | 61.5 | 16.4 | 76 | NE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | |
| Nemours | ..... | ..... | 30.02 | 762.4 | 64.9 | 18.3 | 73 | WNW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Kesxuche. |
| Algiers | ..... | ..... | 29.98 | 761.6 | 61.5 | 16.4 | 81 | W | ..... | ..... | 3 | ..... | 0 | ..... | ..... | Inap | Inap | Clear | Tourliere. |
| La Calle | ..... | ..... | 30.03 | 762.8 | 67.1 | 19.5 | 73 | NE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Foufrede. |
| Tunis | ..... | ..... | 30.05 | 763.3 | 67.6 | 19.8 | 43 | SE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 30.15 | 765.7 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 30.00 | 762.1 | 57.2 | 14.0 | 57 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Herbin. |
| Tebessa | ..... | ..... | 30.13 | 765.2 | 66.9 | 19.4 | 27 | NNW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Watrin. |
| Geriville | ..... | ..... | 30.06 | 763.5 | 63.3 | 17.4 | 96 | S | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Brugniaux. |
| Laghouat | ..... | ..... | 30.06 | 763.6 | 66.9 | 19.4 | 22 | S | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bertrand. |
| Biskra | ..... | ..... | 30.10 | 764.4 | 71.8 | 22.1 | 44 | ESE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.46 | 748.2 | 30.01 | 762.3 | 53.1 | 11.7 | 63 | W | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stoair. |
| Cracow, I. R. Observatory | 29.12 | 739.7 | 29.91 | 759.8 | 38.1 | 3.4 | 95 | ESE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.087 | 2.2 | ..... | Dr. Wierzbiski |
| Eperies | 29.02 | 737.2 | 29.93 | 760.2 | 39.2 | 4.0 | ..... | SE | ..... | ..... | 2 | ..... | 10n | ..... | S | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.89 | 728.7 | 29.95 | 760.6 | 50.9 | 10.5 | 45 | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.59 | 726.2 | 30.05 | 763.3 | 46.2 | 7.9 | 41 | NW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. A. Gottschling. |
| Kremsmünster | 28 58 | 725.8 | 29.95 | 760.6 | 41.7 | 5.4 | 80 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner. |
| Lemberg | 28.90 | 734.0 | 29.93 | 760.1 | 34.2 | 1.2 | 80 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 30.01 | 762.3 | 30.13 | 765.2 | 52.5 | 11.4 | 70 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.047 | 1.2 | ..... | I.R.Hydrographic Office. |
| Szathmar | 29.59 | 751.5 | 30.07 | 763.8 | 35.1 | 1.7 | 82 | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.055 | 1.4 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 30.05 | 763.3 | 30.15 | 765.9 | 46.2 | 7.9 | 88 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | P. Busin. |
| Vienna | 29.20 | 741.8 | 29.93 | 760.2 | 46.8 | 8.2 | 55 | S | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | 29.93 | 760.5 | 29.83 | 757.6 | 50.4 | 10.2 | 72 | SW | ..... | ..... | 4 | ..... | 9 | ..... | W;WSW | 0.089 | 2.25 | ..... | Royal Observatory |
| Furnes | 29.80 | 757.0 | 29.83 | 757.6 | 48.6 | 9.2 | 86 | WSW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae |
| Maeseyck | 29.72 | 754.8 | 29.84 | 758.0 | 51.3 | 10.7 | 79 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.028 | 0.7 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:9, instead of 0:54, p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24. hours. Inches. | Rain-fall or melted snow in the past 24. hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.86 | 758.4 | 29.96 | 761.0 | 36.0 | 2.2 | ..... | E | 22 | 9.8 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | Blue sky..... | W. Boswell. |
| Ardrossan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.70 | 754.4 | 37.2 | 2.9 | ..... | ENE | 15 | 6.7 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.68 | 753.9 | 40.1 | 4.5 | ..... | ENE | 23 | 10.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 30.20 | 767.1 | 38.0 | 3.3 | ..... | ENE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Thomas Mackereth. |
| Bradford, Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Bridgetown, (Barbados) | 29.89 | 759.2 | 29.92 | 760.0 | 82.5 | 28.1 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0.05 | 1.3 | ..... | J. McLandsborough. |
| Cambridge, Observatory | ..... | ..... | 29.68 | 753.9 | 56.0 | 13.3 | ..... | SW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Surgener, A. H. C. |
| Cardington | ..... | ..... | 29.71 | 754.6 | 53.0 | 11.7 | ..... | SW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | H. Todd. |
| Chatham, School M. E. | 29.62 | 752.3 | 29.75 | 755.6 | 50.2 | 10.1 | ..... | SW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast ..... | John McLaren. |
| Dartmoor | 28.27 | 718.0 | 29.75 | 755.6 | 47.0 | 8.3 | ..... | W | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | Drizzling..... | Corpl. Daly, R. E. |
| Donaghadee | 29.69 | 754.1 | 29.73 | 755.1 | 38 | 3.3 | ..... | ESE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Squally..... | Alexander Watt. |
| Dover | 29.76 | 755.9 | 29.81 | 757.2 | 45 | 7.2 | ..... | WSW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Falmouth, Observatory | 29.57 | 751.1 | 29.80 | 756.9 | 53.0 | 11.7 | ..... | WSW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | Gloomy..... | J. Costello. |
| Fort Napier, (Natal) | 27.51 | 698.7 | 29.83 | 757.7 | 86.4 | 30.2 | ..... | E | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Free Town, (Sierra Leone) | 29.74 | 755.4 | 29.97 | 761.2 | 85 | 29.4 | ..... | W | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A.H. C. |
| Galway, Queen's College | ..... | ..... | 29.59 | 751.6 | 43 | 6.1 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Gibraltar, (Mediterranean) | 29.99 | 761.7 | 30.04 | 763.0 | 67.9 | 14.4 | ..... | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Raining ..... | Prof. A. H. Curtis. |
| Glasgow, Observatory | 29.64 | 752.8 | 29.84 | 757.9 | 35.3 | 1.8 | ..... | E | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | Overcast?.. | Sergt. Wm. Allen, A.H.C. |
| Great Yarmouth | 29.66 | 753.9 | 29.68 | 753.9 | 51 | 10.6 | ..... | WSW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | D. G. Maclean. |
| Greenwich, Royal Obs'y | 29.57 | 751.1 | 29.74 | 755.4 | 50.4 | 10.2 | ..... | SW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Raining ..... | G. T. Watson. |
| Guernsey | 29.63 | 752.6 | 29.85 | 758.2 | 52.5 | 11.4 | ..... | SSW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | Drizzling..... | The Staff, for G. B. Airy. |
| Helston | 29.78 | 756.4 | 29.90 | 759.4 | 56 | 13.3 | ..... | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S. E. Hoskins, F.R.S. |
| Holyhead | 29.62 | 752.3 | 29.67 | 753.6 | 47 | 8.3 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.7 | 18. | Clear..... | M. P. Moyle. |
| Jersey | 29.58 | 751.3 | 29.88 | 758.9 | 49.6 | 9.8 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | John Tilston. |
| Kew, Observatory | 29.70 | 754.4 | 29.74 | 755.4 | 50.9 | 10.5 | ..... | SW | 18 | 8.0 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | J. Fisher. |
| Leicester, Museum | 29.42 | 747.2 | 29.67 | 753.6 | 51.3 | 10.7 | ..... | SW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy..... | The Meteorological Of. |
| Malta, (Mediterranean) | 29.98 | 761.5 | 30.05 | 763.3 | 61 | 16.1 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Nairn | 29.85 | 758.2 | 29.94 | 760.5 | 36 | 2.2 | ..... | ENE | ..... | ..... | 1 | ..... | 4ck | ..... | ..... | ..... | ..... | D. clouds.... | Sergt. H. J. Beckett, A. H. C. |
| Nassau, (Bahamas) | ..... | ..... | 30.14 | 765.5 | 72.2 | 22.3 | ..... | NE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded... | W. D. Penny. |
| Nottingham, Observatory | 29.41 | 747.0 | 29.60 | 751.8 | 40.2 | 4.6 | ..... | N | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Oscott, St. Mary's College | 29.15 | 740.4 | 29.67 | 753.6 | 55.2 | 12.9 | ..... | SW | ..... | ..... | 3 | ..... | 10d | N | ..... | 0.225 | 5.74 | Raining ..... | E. J. Lowe, F. R. S. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.73 | 755.1 | 51 | 10.6 | ..... | SW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. Stephen J. Whitty. |
| Plymouth | 29.70 | 754.4 | 29.77 | 756.1 | 52.8 | 11.6 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast .... | H. E. Bellamy. |
| Roche's Point | 29.63 | 752.6 | 29.68 | 753.9 | 51 | 10.6 | ..... | SW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | John Merrifield. |
| Saint Ann's Head | ..... | ..... | ..... | ..... | ..... | ..... | ..... | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded... | W. Kennedy. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 30.01 | 762.2 | 33.5 | 0.8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 30.27 | 768.8 | 51.8 | 11.0 | ..... | E | 7 | 3.1 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Rev C. Clouston, L.L.D. |
| Sheffield | 29.46 | 748.3 | 29.75 | 755.6 | 39.1 | 3.9 | ..... | SW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | W. H. Lyne. |
| Silloth Rectory | 29.78 | 756.4 | 29.81 | 757.2 | 38.5 | 3.6 | 73 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.23 | 5.8 | Raining..... | W. F. Cooper. |
| Stonyhurst, Observatory | 29.32 | 744.7 | 29.72 | 754.9 | 35.0 | 3.3 | ..... | E | ..... | ..... | 8 | ..... | 8 | ..... | ..... | 0 | 0 | D. clouds.... | Francis Redford, A. M. |
| Strathfield Turgiss | 29.62 | 749.8 | 29.74 | 755.4 | 53.3 | 11.8 | ..... | NE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. S. J. Perry. |
| Thurso | 29.93 | 760.2 | 29.99 | 761.7 | 42 | 5.6 | ..... | W | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Drizzling.... | C.H. Griffith, F.M.S. |
| Truro, Royal Institution | 29.75 | 755.6 | 29.80 | 756.9 | 57 | 13.9 | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | John Trotter. |
| Valencia, Observatory | 29.65 | 753.1 | 29.65 | 753.9 | 50.1 | 10.1 | ..... | SW | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | W. Newcombe. |
| Sub-Series. | | | | | | | | W | 19 | 8.5 | ..... | ..... | 8 | ..... | ..... | Blank | Blank | D. clouds.... | The Meteorological Of. |
| Cape of Good Hope Obs'y | 29.88 | 758.9 | 29.92 | 760.0 | 78 | 25.6 | 59 | S | 23 | 10.3 | ..... | 2 | 6 | ..... | ..... | 0 | 0 | Fair..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.92 | 760.0 | 52.0 | 11.0 | 82 | N | ..... | ..... | 3 | ..... | 10kn | ..... | ..... | 0.01 | 0.3 | Cloudy ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.91 | 759.7 | 36.8 | 2.7 | ..... | E | ..... | ..... | 4 | ..... | 10k | ..... | ..... | 0.01 | 0.3 | ..... | Andrew Gibb. |
| Mauritius, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Meldrum. |
| Melbourne, Observatory | 29.72 | 754.9 | 29.82 | 757.4 | 59.0 | 15.0 | 76 | SE | 16 | 7.2 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 29.94 | 760.5 | 36 | 2.2 | ..... | ENE | ..... | ..... | 6 | 0 | 0 | ..... | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.05 | 763.3 | 37 | 2.8 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

## British Marine Series.

| Vessels. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 35° 56', E. 17° 06' | ..... | ..... | 30.09‡ | 764.3‡ | 62 | 16.7 | ..... | ESE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Misty..... | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| Barque Belle Isle, N. 31° 24', W. 74° 59' | ..... | ..... | 30.17‡ | 766.3‡ | 65 | 18.3 | ..... | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 2 | ..... | Blue sky..... | Capt. B. Boyes. |
| Ship British Commodore, N. 38° 55', W. 61° 30' | ..... | ..... | 30.12 | 765.0 | 52 | 11.1 | ..... | N | ..... | ..... | 5 | ..... | 9 | ..... | ..... | 4 | N; S | Overcast..... | Capt. A. J. Brown. |
| —— City of Agra, N. 13° 26', W. 40° 58' | ..... | ..... | 30.16‡ | 766.1‡ | 79 | 26.1 | ..... | ENE | ..... | ..... | 5 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. J. W. Thorne. |
| Barque Commewyne, N. 32° 10' W. 56° 20' | ..... | ..... | 30.17‡ | 766.3‡ | 67 | 19.4 | ..... | SSE | ..... | ..... | 5 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. Thos. Young. |
| Barque Fedalina, N. 49° 15', W. 5° 00' | ..... | ..... | 29.80 | 756.9 | 55 | 12.8 | ..... | SW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 1 | ..... | D. clouds..... | Capt. A. Buchan. |
| Barque Merlole, N. 52° 40', W. 5° 35' | ..... | ..... | 29.63‡ | 752.6‡ | 44 | 6.7 | ..... | NNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Capt. H. L. Fox. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Strathleven, N. 21° 44', E. 37° 52' | ..... | ..... | 29.96‡ | 761.0‡ | 75 | 23.9 | ..... | NNW | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | Capt. Barlow. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity Miles per hour. | WIND. Velocity Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.28 | 667.5 | 30.00 | 762.0 | 65.3 | 18.5 | 90 | SE | ..... | ..... | 1 | 2ks | ..... | E | ..... | 0 | 0 | ..... | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.80 | 757.0 | 29.85 | 758.2 | 30 2 | — 1.0 | 88 | ESE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | ..... |
| Fanöe | 29.70 | 754.4 | 29.72 | 754.9 | 29.1 | — 1.6 | 100 | ENE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | ..... |
| Godthaab, (Greenland) | 29.80 | 756.8 | 29.84 | 757.9 | 28.8 | — 1.8 | 88 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Farõe) | 30.09 | 764.2 | 30.12 | 765.1 | 36.3 | 2.4 | 87 | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.68 | 753.9 | 29.85 | 758.2 | 31.6 | — 0.2 | 81 | E | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.43 | 747.4 | 29.98 | 761.4 | 46.8 | 8.2 | 77 | SW | ..... | ..... | 1 | ..... | 8 | W | W | 0 | 0 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 29.80 | 756.8 | 29.91 | 759.7 | 44.2 | 6.8 | 94 | S | ..... | ..... | 1 | ..... | 8 | ..... | E | 0 | 0 | Very cloudy | Bonvallet, Director. |
| Avignon, Normal School | 29.99 | 761.8 | 30.07 | 763.8 | 51.4 | 10.8 | 93 | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Rainy | M. Giraud, Director. |
| Bar-sur-Seine | 29.42 | 747.3 | 29.98 | 761.4 | 52.3 | 11.3 | 85 | W | ..... | ..... | 2 | ..... | 5k | ..... | W | 0 | 0 | Cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.63 | 752.7 | 29.92 | 759.9 | 54.1 | 12.3 | 89 | WSW | ..... | ..... | 2 | ..... | 5 | ..... | W | 0 | 0 | Cloudy | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.12 | 739.5 | 29.97 | 761.3 | 51.8 | 11 | 69 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.18 | 741.1 | 30.09 | 764.3 | 51.3 | 10.7 | 75 | S | ..... | ..... | 3 | ..... | 10kn | SW | SW | 0 | 0 | Covered | M. Marlot, Director. |
| Bourges, Normal School | 29.46 | 748.3 | 30.02 | 762.4 | 53.2 | 11.8 | 67 | W | ..... | ..... | 1 | ..... | 10 | W | W | 0 | 0 | Covered | A. Waquet, Director. |
| Brest, Naval Observatory | 29.59 | 751.5 | 29.83 | 757.6 | 55.0 | 12.8 | 79 | SW | ..... | ..... | 3 | ..... | 10 | ..... | SW | 0.020 | 0.50 | ..... | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.62 | 752.4 | 30.04 | 762.9 | 61.2 | 16.2 | 71 | E | ..... | ..... | 1 | ..... | 2 | W | W | 0 | 0 | Slightly cl'dy | September, Director. |
| Caen, Normal School | 29.83 | 757.6 | 29.90 | 759.5 | 55.8 | 18.2 | 62 | SW | ..... | ..... | 2 | ..... | 5 | ..... | WSW | 0 | 0 | Cloudy | M. Lair, Director. |
| Chartres, Normal School | 29.34 | 745.1 | 29.90 | 759.4 | 53.2 | 11.8 | 90 | W | ..... | ..... | 1 | ..... | 2 | ..... | E | 0 | 0 | ..... | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.65 | 753.2 | 29.97 | 761.3 | 53.6 | 12.0 | 50 | SW | ..... | ..... | 3 | ..... | 2 | SW | SW | 0 | 0 | Slightly cl'dy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.62 | 727.0 | 29.97 | 761.2 | 57.2 | 14.0 | 47 | S | ..... | ..... | 1 | ..... | 8 | ..... | WSW | 0 | 0 | ..... | Alluard, Director. |
| Commercy, Normal School | 29.08 | 738.6 | 29.94 | 760.6 | 49.5 | 9.7 | 54 | W | ..... | ..... | 3 | ..... | 5kn | ..... | W | 0 | 0 | Cloudy | Dr. Coulet, Director. |
| Commune de Grésque* | 28.95 | 735.4 | 30.10 | 764.4 | 58.5 | 14.7 | 53 | SE | ..... | ..... | 2 | ..... | 5 | ..... | SE | 0 | 0 | ½ covered | M. Kina, Director. |
| Grenoble, Normal School | 29.30 | 744.2 | 30.08 | 763.9 | 54.3 | 12.4 | 52 | NW | ..... | ..... | 1 | ..... | 8kn | SE | ..... | 0 | 0 | Very cloudy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.76 | 756.0 | 29.98 | 761.5 | 55.4 | 13.0 | 81 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Mouillot, Director. |
| Le Mans, Normal School | 29.67 | 753.6 | 29.98 | 761.4 | 51.4 | 10.8 | 61 | WSW | ..... | ..... | 3 | ..... | 5 | ..... | S | 0 | 0 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.12 | 739.5 | 30.05 | 763.2 | 56.3 | 13.5 | 53 | SW | ..... | ..... | 4 | ..... | 5 | ..... | SW | 0 | 0 | Cloudy | Baudry, Director. |
| Lorient, Naval Observatory | 29.85 | 758.3 | 29.95 | 760.8 | 56.8 | 13.8 | 76 | SSW | ..... | ..... | 3 | ..... | ..... | ..... | SW | 0 | 0 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galain, Director |
| Mirecourt, Normal School | 28.91 | 734.2 | 30.00 | 762.1 | 50.4 | 10.2 | 40 | SW | ..... | ..... | 3 | ..... | k | ..... | NE | 0 | 0 | ..... | M. Barbier, Director. |
| Nismes, Normal School | 29.87 | 758.8 | 30.08 | 764.0 | 55.0 | 12.8 | 77 | SE | ..... | ..... | 1 | ..... | 8 | ..... | S | 0 | 0 | Very cloudy | Boyer, Director. |
| Privas, Normal School | 28.87 | 733.3 | 29.95 | 760.7 | 48.9 | 9.4 | 81 | S | ..... | ..... | 1 | ..... | 10n | S | S | 0 | 0 | Covered | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 25.10 | 637.4 | ..... | ..... | 36.1 | 2.3 | 90 | W | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | Almost cov'd | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.97 | 761.3 | 30.00 | 762.1 | 55.2 | 12.9 | 71 | WSW | ..... | ..... | 1 | ..... | 2 | WSW | WSW | 0 | 0 | ¼ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.80 | 756.9 | 29.89 | 759.1 | 56.3 | 13.5 | 51 | W | ..... | ..... | 1 | ..... | 2 | ..... | W | 0 | 0 | Slightly cl'dy | Frere Lucard, Director. |
| Saint-Malo (Port) Obs'y | 29.85 | 758.1 | 29.87 | 758.8 | 55.8 | 13.2 | 62 | SW | ..... | ..... | 4 | ..... | 5 | SW | SW | 0 | 0 | Cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.70 | 754.4 | 29.94 | 760.6 | 54.7 | 12.6 | 48 | SW | ..... | ..... | 2 | ..... | ..... | ..... | W | 0 | 0 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.87 | 733.4 | 29.94 | 760.5 | 59.0 | 15 | 48 | SW | ..... | ..... | 2 | ..... | 2 | SW | W | 0 | 0 | Slightly cl'dy | T. Huguet, Director. |
| Versailles Observatory | 29.44 | 747.8 | 29.93 | 760 3 | 51.4 | 10.8 | ..... | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.31 | 744.5 | 30.07 | 763.8 | 50.9 | 10.5 | 81 | SE | ..... | ..... | 1 | ..... | 5 | ..... | W | 0 | 0 | Cloudy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.96 | 761.0 | 29.99 | 761.7 | 75.6 | 24.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marel 6sl. |
| Lyons Obs'y, (Park Station) | 29.43 | 747.4 | 30.06 | 763.4 | 51.6 | 10.9 | 69 | SSE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.031 | 0.80 | Rainy | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 24.78 | 629.5 | 30.10 | 764.5 | 45.5 | 7.5 | 64 | W | 13.0 | 5.8 | ..... | ..... | 2 | ..... | SSW | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | 30.12 | 765.0 | 67.9 | 14.4 | 63 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Dr. A. Niepce, Jr. |
| Perpignan | 29.66 | 753.3 | ..... | ..... | 54.7 | 12.6 | 50 | SW | ... | ..... | 4 | ..... | 4 | ..... | W | 0 | 0 | ..... | Marié Davy, Director. |
| Pic du Midi, (Summit,) H. P. | 29.90 | 759.4 | 30.00 | 762.1 | 57.6 | 14.2 | 74 | SE | 9.4 | 4.2 | ..... | ..... | 3 | ..... | W | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Plantade,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Toulouse, Observatory | 22.39 | 568.8 | ..... | ..... | 35.4 | 1.9 | ..... | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | 0 | 0 | Cloudy | Gen'l de Nansouty. |
| Tours | 29.30 | 744.3 | 30.04 | 763.1 | 56.8 | 13.8 | 75 | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | M. Mercadier Juller. |
| Zi-Ka-Wei, (near Shanghai) | 29.78 | 756.3 | 29.97 | 761.3 | 55.4 | 13.0 | 52 | W | ..... | ..... | 1 | ..... | 5 | ..... | W | 0 | 0 | ..... | Cousin-Marquete. |
| ..... | 30.15 | 765.9 | 30.18 | 766.6 | 44.4 | 6.9 | 96 | NE | 13.7 | 6.1 | ..... | ..... | 10n | ..... | ..... | 0.413 | 10.5 | Raining | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-12 | Clouds. Amount. Up'er 0-10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.09 | 738.8 | 29.93 | 760.1 | 48.7 | 9.3 | 59 | NW | | | 4 | | 7 | W | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.60 | 751.7 | 29.77 | 756.1 | 44.2 | 6.8 | 84 | S | | | 1 | | 10 | | | 0.165 | 4.2 | | Prof. Arndt. |
| Breslau | 29.34 | 745.2 | 29.87 | 758.6 | 38.1 | 3.4 | 91 | SSW | | | 2 | | 10 | | | 0.126 | 3.20 | Rain & snow | Royal University Obs'y |
| Carlsruhe | 29.47 | 748.4 | 29.93 | 760.2 | 56.5 | 13.6 | 46 | SW | | | 4 | | 3 | SW | | 0 | 0 | | Albert Senx. |
| Cassel | 29.15 | 740.5 | 29.76 | 755.8 | 49.3 | 9.6 | 68 | SW | | | 2 | | 7 | SW | | 0.145 | 3.68 | | Dr. H. Möhl. |
| Crefeld | 29.63 | 752.5 | 29.79 | 756.6 | 51.6 | 10.9 | 70 | W | | | 3 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.52 | 749.7 | 29.89 | 759.2 | 54.1 | 12.3 | | SW | | | 2 | | 3 | | | 0.016 | 0.4 | | Physical Society. |
| Friedrichshafen | 28.54 | 725.0 | 29.99 | 761.8 | 48.9 | 9.4 | 67 | SW | | | 6 | | 8 | SW | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.66 | 753.4 | 29.73 | 755.2 | 37.0 | 2.8 | 93 | SW | | | 2 | | 10 | | | 0.327 | 8.3 | Raining | Captain F. Hegemann. |
| Kiel | 29.71 | 754.6 | 29.72 | 754.9 | 36.5 | 2.5 | 89 | E | | | 2 | | 10 | | | 0.216 | 5.48 | Snowing | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.89 | 759.2 | 29.98 | 761.4 | 31.6 | — 0.2 | 68 | SE | | | 2 | | 2 | | | 0.075 | 1.9 | Snowing | Prof. E. Luther. |
| Köslin | | | 29.83 | 757.6 | 30.6 | — 0.8 | | W | | | 2 | | 4 | | | 0.035 | 0.9 | | H. Müller. |
| Leipsic, Observatory | 29.40 | 746.8 | 29.83 | 757.7 | 43.5 | 6.4 | 78 | SSW | | | 1 | | 10 | | | 0.295 | 7.5 | Rainy | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.92 | 760.0 | 29.97 | 761.2 | 29.5 | — 1.4 | 76 | S | | | 1 | | 7s | | | | | | Skalweit. |
| Neufahrwasser | 29.95 | 760.7 | 29.97 | 761.1 | 31.5 | — 0.3 | 65 | ESE | | | 2 | | 10 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.58 | 751.3 | 29.88 | 758.9 | 33.8 | 1.0 | 88 | SE | | | 2 | | 10 | | | 0.201 | 5.1 | Snowing | Dr. Magener. |
| Strassburg (in Alsace) | 29.40 | 746.8 | 29.95 | 760.7 | 55.9 | 13.3 | 46 | W | | | 4 | | 5 | W | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 28.94 | 735.1 | 29.88 | 758.9 | 53.6 | 12.0 | 38 | W | | | 1 | | 8 | W | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | | | | | | | | | | | | | | | | | | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.40 | 721.3 | 29.92 | 759.9 | 46.9 | 8.3 | 67 | SW | 11 | 5 | | | 9k | | W | 0 | 0 | Cloudy | Dr. Van Bebber. |
| Wustrow, Naval School | 29.72 | 755.0 | 29.75 | 755.8 | 31.8 | — 0.1 | 98 | ESE | | | 4 | | 10 | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-12 | Clouds. Amount. Up'er 0-10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.87 | 758.7 | 30.27 | 768.8 | 57.0 | 13.9 | | W | | | 1.5 | | | | | | | Clear. | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-12 | Clouds. Amount. Up'er 0-10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.90 | 759.5 | 29.96 | 760.8 | 73.1 | 22.8 | 48 | WNW | 36 | 16.1 | | | 5 | WNW | | 0 | 0 | D. clouds | |
| Deesa | 29.40 | 746.8 | 29.87 | 758.8 | 82.3 | 27.9 | 30 | W | 8.8 | 3.9 | | | 5 | WSW | | 0 | 0 | D clouds | |
| Bombay | 29.84 | 758.0 | 29.88 | 759.0 | 81.1 | 27.3 | 56 | NNW | 26 | 11.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.15 | 740.4 | 29.92 | 760.0 | 63.6 | 17.6 | 63 | Calm | 3.1 | 1.4 | | | 5 | | | 0.02 | 0.5 | Cloudy | |
| Belgaum | 27.31 | 693.6 | 29.78 | 756.4 | 89.9 | 32.2 | 18 | Calm | 0 | 0 | | | 7 | | | 0 | 0 | D. clouds | |
| Roorkee | 28.88 | 733.6 | 29.79 | 756.7 | 73.2 | 22.9 | 65 | NW | 1.6 | 0.7 | | | 10 | | | 0 | 0 | Gloomy | |
| Agra | 29.21 | 741.9 | 29.78 | 756.3 | 78.7 | 25.9 | 34 | E | | | | | 3 | | | 0 | 0 | | |
| Nagpur | 28.78 | 731.1 | 29.82 | 757.3 | 86.6 | 30.3 | 24 | Calm | 3.9 | 1.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.42 | 747.2 | 29.79 | 756.7 | 84.8 | 29.3 | 38 | NW | 1.8 | 0.8 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.46 | 748.3 | 29.77 | 756.1 | 86.3 | 30.2 | 32 | Calm | 3.7 | 1.6 | | | 8 | | W | 0 | 0 | D. clouds | |
| Patna | 29.56 | 750.8 | 29.74 | 755.4 | 85.8 | 29.9 | 29 | W | 2.6 | 1.2 | | | 2 | W | W | 0 | 0 | | |
| Hazaribagh | 27.82 | 708.2 | 29.84 | 758.0 | 76.0 | 24.4 | 18 | WNW | 6.7 | 2.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.65 | 753.0 | 29.73 | 755.0 | 91.6 | 33.1 | 43 | S | 4.1 | 1.8 | | | 1 | | | 0 | 0 | D clouds | |
| Calcutta (Alipore) | 29.71 | 754.6 | 29.73 | 755.2 | 87.9 | 31.1 | 59 | WSW | 7.0 | 3.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.25 | 742.9 | 29.63 | 752.6 | 85.8 | 29.9 | 51 | NNE | 5.0 | 2.2 | | | 0 | | | 0.03 | 0.8 | Blue sky | |
| Chittagong | 29.71 | 754.6 | 29.80 | 757.0 | 80.9 | 27.2 | 77 | SE | 7.5 | 3.4 | | | 3 | | | 0 | 0 | Misty | |
| Sibsagar | 29.34 | 745.2 | 29.68 | 753.7 | 75.3 | 24.1 | 72 | NW | 1.1 | 0.5 | | | 10 | W | W | 0.04 | 1.0 | Overcast | |
| Jubbulpore | 28.44 | 722.3 | 29.79 | 756.6 | 85.8 | 29.9 | 21 | W | 3.9 | 1.7 | | | 4 | E | | 0 | 0 | D. clouds | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.72 | 754.8 | 30.13 | 765.4 | 50.0 | 10.0 | 48 | W | 1.3 | 0.6 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.61 | 752.2 | 30.14 | 765.6 | 50.2 | 10.1 | 60 | SW | ..... | ..... | 2 | ..... | 9 | SSW | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 30.03 | 762.7 | 30.14 | 765.5 | 48.4 | 9.1 | 62 | SW | 3.8 | 1.7 | ..... | ..... | 6 | W | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 29.22 | 742.1 | 30.13 | 765.4 | 50.2 | 10.1 | 46 | WSW | 1.8 | 0.8 | ..... | ..... | 6 | ENE | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.91 | 759.7 | 30.10 | 764.6 | 55.4 | 13.0 | 49 | S | 2.5 | 1.1 | ..... | ..... | 6 | W | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 28.18 | 715.7 | 30.11 | 764.9 | 42.1 | 5.6 | 69 | SW | ..... | ..... | 2 | ..... | 8 | W | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 30.08 | 764.1 | 30.18 | 765.3 | 51.0 | 10.9 | 77 | N | 7.4 | 3.3 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.85 | 758.2 | 30.11 | 764.8 | 59.0 | 15.0 | 65 | E | ..... | ..... | 2 | ..... | 8 | SW | ..... | 0.008 | 0.2 | ..... | Cav. F. Meucci |
| Leghorn | 29.96 | 760.9 | 30.04 | 763.1 | 58.6 | 14.8 | 72 | SSW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0.146 | 3.7 | ..... | Prof. P. Monte. |
| Rome | 29.97 | 761.1 | 30.14 | 765.6 | 54.3 | 12.4 | 93 | N | 0.7 | 0.3 | ..... | ..... | 10 | ..... | ..... | 0.079 | 2.0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.96 | 760.9 | 30.22 | 767.5 | 60.6 | 15.9 | 70 | E | 5.6 | 2.5 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.28 | 743.8 | 30.18 | 766.5 | 56.1 | 13.4 | 71 | NW | 1.8 | 0.8 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.84 | 757.8 | 30.03 | 762.7 | 63.1 | 17.3 | 72 | SE | ..... | ..... | 2 | ..... | 5 | SE | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.87 | 758.6 | 30.12 | 765.1 | 57.4 | 14.1 | 57 | NE | 5.6 | 2.5 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 30.00 | 764.3 | 30.16 | 766.1 | 56.1 | 13.4 | 68 | NE | 11.2 | 5.0 | ..... | ..... | 10 | SSE | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.62 | 752.3 | 30.17 | 766.4 | 58.1 | 14.5 | 64 | ESE | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.26 | 768.6 | 30.28 | 769.1 | 36.7 | 2.6 | 83 | NNE | 5.6 | 2.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 30.04 | 763.0 | 30.25 | 768.8 | 43.8 | 6.6 | 69 | NNE | 0.6 | 0.3 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 30.16 | 766.0 | 30.23 | 767.8 | 36.9 | 2.7 | 56 | NW | 0.8 | 3.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9.30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Barcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.10 | 637.6 | 30.20 | 767.2 | 43.7 | 6.5 | 30 | S | ..... | ..... | 1 | 5 | ..... | W | ..... | 0 | 0 | ½ clouded | Prof. L. Perez. |
| Leon | 24.44 | 621.0 | 30.15 | 765.8 | 50.1 | 13.4 | 63 | NW | ..... | ..... | 1 | 4c | 1s | SW | ..... | 0 | 0 | ½ clouded | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.08 | 586.1 | 30.15 | 765.9 | 49.8 | 9.9 | 55 | S | 0.4 | 0.2 | ..... | 0 | 0 | ..... | ..... | 0.12 | 3.0 | Clear | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 58.5 | 14.7 | 42 | SE | ..... | ..... | 1 | 7c | 0 | SW | ..... | 0 | 0 | Cloudy | M. V. de Leon, M. E. |
| Tlacotalpam | 29.92 | 759.9 | 29.93 | 760.2 | 68.9 | 20.5 | 95 | NE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Misty | M. M. Chazaro. |
| San Luis Potosi | 24.17 | 613.1 | 30.17 | 766.4 | 60.0 | 15.6 | 38 | W | ..... | ..... | 1 | 5 | 0 | W | ..... | 0 | 0 | ½ clouded | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.43 | 595.2 | 30.20 | 767.0 | 48.2 | 9.0 | 49 | N | 3.6 | 1.6 | ..... | ..... | 1ok;ks | ..... | Calm | 0 | 0 | ..... | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.41 | 721.6 | 30.08 | 764.0 | 72.1 | 22.3 | 58 | NE | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

NOTE.—The elevation of Cuernavaca is 1,550.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,893 m., or 6,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,201 m., or 7,220.9 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.81 | 757.2 | 29.81 | 757.2 | 47.8 | 8 8 | ..... | WSW | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.012 | 0.3 | ..... | ..... |
| Groningen | 29.64 | 752.8 | 29.69 | 754.2 | 42.4 | 5.8 | ..... | SW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.126 | 3.2 | ..... | ..... |
| Helder | 29.69 | 754.2 | 29.69 | 754.2 | 41.7 | 5.4 | ..... | SSW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.031 | 0.8 | ..... | |
| Hellevoetsluis | 29.76 | 755.8 | 29.76 | 755.8 | 46.0 | 7.8 | 88 | SW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.73 | 755.2 | 29.78 | 756.4 | 46.2 | 7.9 | 86 | WSW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.067 | 1.7 | Very cloudy | H. v. d. Brink. |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.93 | 760.1 | 29.98 | 761.5 | 33.4 | 0.8 | 61 | NNW | 4.9 | 2.2 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.68 | 753.8 | 29.72 | 754.8 | 30.2 | — 1.0 | 61 | NNW | 18 | 8 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Snowing | |
| Christiania | 29.79 | 756.7 | 29.95 | 760.6 | 29.8 | — 1.2 | 44 | S | 2 | 1 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.29 | 744.0 | 29.34 | 745.1 | 22.3 | — 5.4 | 93 | W | 13 | 6 | ..... | ..... | 10 | ..... | ..... | 0.335 | 8.5 | Snowing | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.84 | 757.9 | 30.04 | 762.9 | 49.6 | 9.8 | 79 | N | 5.6 | 2.5 | ..... | ..... | 4 | ..... | ..... | 0.118 | 3.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.92 | 757.0 | 30.05 | 763.3 | 56.2 | 13.6 | 50 | SW | 3.1 | 1.4 | ..... | ..... | 8 | SW | ..... | 0 | 0 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 29.95 | 760.8 | 30.04 | 763.0 | 63.9 | 17.7 | 63 | SW | 8.7 | 3.9 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.69 | 754.2 | 30.06 | 763.4 | 55.6 | 13.1 | 71 | ESE | 8.7 | 3.9 | ..... | ..... | 8 | S | ..... | 0.028 | 0.7 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.93 | 760.1 | 30.00 | 761.9 | 56.8 | 13.8 | 47 | NNW | 13.7 | 6.1 | ..... | ..... | 4 | ESE | ..... | 0.063 | 1.6 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Vessels. | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | A. G. da Silva Costa Com'd.t. |
| D. Fernando | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| India | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | 2 | SW | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da SilyaCosta. Porto de S. Jose de Bissao, Senegambia | 2 | E | Blue sky | A. Ferreira, 2d Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | D. clouds | F. Teixeira da Silva, Com'd't. L. Ribeiro de Costa, Com'd't. |
| Sado | ..... | ..... | ..... | |
| Tejo, Macao, China | ..... | ..... | ..... | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.51 | 749.6 | 29.95 | 760.8 | 32.0 | 0.0 | 74 | SE | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | Astronomical Obs. |
| Wilna | 29.55 | 750.6 | 30.00 | 761.9 | 24.6 | — 4.1 | 63 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.70 | 754.3 | 29.96 | 760.9 | 19.9 | — 6.7 | 65 | SW | 9 | 4 | ..... | ..... | 7c;ck | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.84 | 757.9 | 29.85 | 758.3 | 22.3 | — 5.4 | 83 | W | 2 | 1 | ..... | ..... | 8k | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.31 | 744.5 | 29.98 | 761.5 | 29.1 | — 1.6 | 58 | WNW | 9 | 4 | ..... | ..... | 7k;ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 30.09 | 764.2 | 30.16 | 766.0 | 39.2 | 4.0 | 46 | SW | 22 | 10 | ..... | ..... | 5k;n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.23 | 767.7 | 30.24 | 768.2 | 39.9 | 4.4 | 39 | WSW | 4 | 2 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.33 | 744 9 | 29.91 | 759.7 | 21.2 | — 6.0 | 69 | NE | 9 | 4 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.79 | 756.7 | 30.00 | 762.1 | 36.1 | 2.3 | 49 | WSW | 31 | 14 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.59 | 751.6 | 29.61 | 752.1 | 18.0 | — 7.8 | 92 | WSW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Ssellwerstow. |
| Tiflis | 28.77 | 730.8 | 30.24 | 768.0 | 40.3 | 4.6 | 33 | NW | 18 | 8 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.28 | 769.2 | 30.20 | 767.1 | 38.5 | 3.6 | 51 | W | 2 | 1 | ..... | ..... | 4k | ..... | ..... | Blank | Blank | ..... | Capt. Wisganow. |
| Krotkowo* | 29.51 | 749.6 | 30.02 | 762.4 | 24.1 | — 4.4 | 66 | S | 2 | 1 | ..... | ..... | 1s | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.64 | 752.8 | 29.92 | 760.0 | 24.3 | — 4.3 | 70 | SSW | 9 | 4 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.02 | 737.1 | 30.03 | 762.7 | 26.4 | — 3.1 | 58 | WSW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.61 | 752.2 | 29.84 | 758.0 | 70.3 | 21.3 | 4 | SSE | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.41 | 721.5 | 30.08 | 764.1 | 63.7 | 17.6 | 40 | Calm | 0 | 0 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.69 | 754.0 | 30.22 | 767.5 | 26.1 | — 3.3 | 91 | SW | 2 | 1 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.10 | 764.5 | 30.40 | 772.2 | 32.0 | 0.0 | 53 | SE | 7 | 3 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 30.19 | 766.9 | 30.34 | 770.5 | 37.6 | 3.1 | 52 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455 ? m., or 1,492.7 ? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165.2 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.88 | 758.9 | 29.98 | 761.6 | 57.6 | 14.2 | 63 | SE | 4.7 | 2.08 | ..... | ..... | 2c;ks | ..... | ..... | 0.015 | 0.38 | ..... | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 29.96 | 760.8 | 30.01 | 762.2 | 57.6 | 14.2 | 79 | N | 1.4 | 0.61 | ..... | 2 | 8 | SE | ..... | 0.020 | 0.5 | Covered | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.01 | 686.0 | ..... | ..... | 48.6 | 9.2 | 79 | SW | 4.3 | 1.93 | ..... | 0 | 8 | ..... | ..... | 0.039 | 1.0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.75 | 704.8 | ..... | ..... | 55.0 | 12.8 | 67 | SW | 6.0 | 2.67 | ..... | 0 | 10 | ..... | ..... | 0 | 0 | Covered | The Staff. |
| Murcia, Met. Obs'y | 29.85 | 758.1 | 30.00 | 761.9 | 69.6 | 20.9 | 53 | WNW | 1.8 | 0.81 | ..... | 3 | 7 | ESE | ..... | 0 | 0 | Almost cov'd | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.01 | 736.9 | 29.91 | 759.7 | 54.7 | 12.6 | 64 | SW | 4.9 | 2.2 | ..... | 0 | 7 | ..... | ..... | 0 | 0 | Cloudy | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 30.05 | 763.3 | 30.12 | 765.0 | 66 8 | 19.3 | 88 | Calm | 0 | 0 | ..... | 0 | 1k | ..... | ..... | Inap. | Inap. | Clear | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.82 | 757.6 | 29.88 | 759.0 | 82.4 | 28.0 | 77 | NE | 5.1 | 2.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.99 | 761.7 | 30.09 | 764.2 | 58.5 | 14.7 | 71 | WNW | 4.2 | 1.9 | ..... | 0 | 9 | ..... | S | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I | 29.96 | 760.9 | 30.05 | 763 2 | 74.8 | 23.8 | 87 | SE | 0 | 0 | ..... | 3c | 3k | SE | SE | 0 | 0 | Clear | Leonardo de Tejoda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.53 | 750.1 | 29.57 | 751.1 | 18.7 | — 7.4 | ..... | NNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.65 | 753.0 | 29.70 | 754.3 | 25.2 | — 3.8 | 78 | W | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.71 | 754.5 | 29.76 | 755.8 | 28.8 | — 1.8 | 82 | SW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.76 | 756.0 | 29.94 | 760.5 | 22.1 | — 5.5 | 73 | NW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0.004 | 0.1 | ..... | |
| Wisby | 29.84 | 758.0 | 29.90 | 759.5 | 24.4 | — 4.2 | 77 | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.85 | 758.2 | 29.93 | 760.1 | 23.5 | — 4.7 | 72 | SSW | 7.8 | 3.5 | ..... | ..... | 3 | ..... | NW | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.61 | 726.7 | 30.04 | 763 1 | 51.3 | 10.7 | 50 | SSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | The Observatory. |
| Zurich | 28.37 | 720.5 | 30.02 | 762.5 | 49.6 | 9.8 | 59 | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.008 | 0.2 | Cloudy | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +2.1 mm.; Thermometer, +2.9 Cent.; Relative Humidity, —11 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.33 | 770.4 | 44.8 | 7.1 | 83 | SE | 7 | 3.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.41 | 772.4 | 72 1 | 22.3 | ..... | NW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 30.19 | 766.8 | 58.6 | 14.8 | ..... | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 30.06 | 763.5 | 30.17 | 766.4 | 66.0 | 18.9 | 62 | W | ..... | ..... | 2 | ..... | 3ks | ..... | W | 0.004 | 0.11 | D. clouds | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.76 | 755.9 | 30.09 | 764.3 | 15 | — 9.4 | ..... | S | 1 | 0.4 | ..... | ..... | 10n | ..... | SW | 0.65 | 1.3 | Lightsnow.. | W. R. Rigg. |
| *Chatham, N B | 29.95 | 760.7 | 30.02 | 762.5 | 18 | — 7.8 | 74 | SW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 30.03 | 762.8 | 30.07 | 763.8 | 24 | — 4.4 | 50 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.88 | 767.7 | 30.04 | 763.0 | 12.9 | —10.6 | 87 | W | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | 30.04 | 763.0 | 30.09 | 764.3 | 37.1 | 2.8 | 91 | Calm | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 29.95 | 760.7 | 29.97 | 761.2 | 10 | —12.2 | 100 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.10 | 2.5 | Light snow.. | J. McWilliams. |
| Fredericton, N. B | 30.04 | 763.0 | 30.10 | 764.5 | 18.5 | — 7.5 | 46 | W | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.34 | 745.2 | 30.31 | 769.9 | —16 | —26.7 | 100 | W | 8 | 3.6 | ..... | Haze | 5ks | W | W | 0 | 0 | Hazy | James Stewart. |
| Granton, Ontario | 28.90 | 735.6 | 30.15 | 765.8 | 14 | —10.0 | ..... | W | ..... | ..... | 1 | ..... | 10n | ..... | ..... | Inap. | Inap. | Light snow. | James Grant. |
| *Halifax, N. S | 29.93 | 760 2 | 30.07 | 763.8 | 29 | — 1.7 | 87 | NW | 7 | 3.1 | ..... | 2c | 0 | W | ..... | 0.01 | 0.3 | Fair | F. Allison, M. A. |
| Hamilton, Ontario | 29.77 | 756.1 | 30.17 | 766.3 | 17.9 | — 7.8 | 95 | SW | ..... | ..... | 1 | 10cs | 0 | SW | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.74 | 755 4 | 30.10 | 764.5 | 14 | —10.0 | 87 | SW | 12 | 5.4 | ..... | 5ck | 2s | SW | Calm | 0.08 | 2.0 | Fair | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.98 | 761.5 | 30.02 | 762.5 | 32.2 | 0.1 | 87 | SW | 6 | 2.7 | ..... | 5k | 0 | SW | ..... | 0.34 | 8.6 | Fair | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 29.86 | 758.4 | 30.08 | 764.0 | 12 | —11.1 | 87 | W | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.33 | 745.0 | 30.09 | 764.3 | 6 | —14.4 | 76 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.07 | 1.8 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | 29.28 | 743.7 | 30.09 | 764.3 | 12.7 | —10.7 | 56 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.40 | 746.7 | 30.14 | 765.5 | 20 | — 6.7 | 56 | W | 7 | 3.1 | ..... | 8k | 0 | W | ..... | 0.01 | 0.3 | Fair | H. Morgan. |
| Port Hastings, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Peter Grant. |
| Port Stanley, Ontario | 29.46 | 748.3 | 30.15 | 765.8 | 20 | — 6.7 | 76 | W | 20 | 8.9 | ..... | ..... | 10ks | ..... | W | Inap. | Inap. | Cloudy | M. Payne. |
| *Quebec, Quebec | 29.72 | 754.9 | 30.08 | 764.0 | 6 | —14.4 | 63 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.17 | 4.3 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.55 | 750.6 | 30.07 | 763.8 | — 1 | —18.3 | 91 | Calm | 0 | 0 | ..... | 6c | 0 | SW | ..... | Fair | ..... | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 30.05 | 763.3 | 30.10 | 764.5 | 20 | — 6.7 | 60 | NW | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| St. John, N. B | 29.90 | 759.4 | 30.07 | 763.8 | 23.0 | — 5.0 | 60 | NW | 15 | 6.7 | ..... | 0 | 1ck | ..... | ..... | 0 | 0 | Fine | G. Murdock, C. E. |
| *Sargeen, Ontario | 29.32 | 744.7 | 30.09 | 764.3 | 15 | — 9.4 | 84 | W | 26 | 11.6 | ..... | ..... | 8n | ..... | W | 0.40 | 10.2 | Cloudy | K. Stewart. |
| Stayner, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.04 | 1.0 | ..... | R. J. Cole. |
| Stratford, Ontario | 28.78 | 731.0 | 30.18 | 766.6 | 10.5 | —11.9 | 77 | W | 13.5 | 6.0 | ..... | 1c | ..... | ..... | ..... | 0.15 | 3.8 | Fine | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.99 | 761.7 | 30.03 | 762.8 | 33 | 0.6 | 70 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.60 | 15.2 | Clear | T. C. Hill. |
| *Toronto, Ontario | 29.72 | 754.9 | 30.14 | 765.5 | 16 | — 8.9 | 82 | SW | 15 | 6.7 | ..... | 1ck | 0 | W | ..... | 0.02 | 0.5 | Clear | Magnetic Observatory. |
| Windsor, N. S | 29.98 | 761.5 | 30.08 | 764.0 | 27.5 | — 2.5 | 94 | W | 4 | 1.8 | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Fair | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 39 | 3.9 | 91 | SW | ..... | ..... | ..... | 10cn | 8s | ..... | ..... | 0.33 | 8.4 | Cloudy | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.91 | 759.7 | 30.16 | 766.1 | 24 | — 4.4 | 61 | S | 8 | 3.6 | | | 10ks | | W | 0 | 0 | Cloudy | |
| Alpena, Michigan | 29.42 | 747.2 | 30.14 | 765.5 | 6 | —14.4 | 76 | W | 4 | 1.8 | | 0 | 5s | | W | 0 | 0 | Cloudy | |
| Atlanta, Georgia | 28.97 | 735.8 | 30.13 | 765.3 | 48 | 8.9 | 62 | NW | 5 | 2.2 | | 2k | Fog | SW | Calm | 0.13 | 3.3 | Foggy | |
| Atlantic City, New Jersey | 30.20 | 767.1 | 30.22 | 767.6 | 35 | 1.7 | 80 | SE | 10 | 4.5 | | 5k | 5s | W | W | 0 | 0 | Cloudy. | |
| Augusta, Georgia | 30.01 | 762.2 | 30.19 | 766.8 | 51 | 10 6 | 65 | Calm | 0 | 0 | | 0 | 5s | | Calm | 0 | 0 | Fair | |
| Baltimore, Maryland | 30.18 | 766.6 | 30.23 | 767.8 | 38 | 3.3 | 54 | N | 3 | 1.3 | | 8k | Haze | W | Calm | 0 | 0 | Fair | |
| Barnegat, New Jersey | 30.18 | 766.6 | 30.20 | 767.1 | 36 | 2.2 | 61 | E | 7 | 3.1 | | 5k | 2s | SW | SW | 0 | 0 | Fair | |
| Bismarck, Dakota | 28.27 | 720.6 | 30.23 | 767.8 | — 6 | —21.1 | 100 | NW | 10 | 4.5 | | 5c | 0 | NW | | 0 | 0 | Fair | |
| Boerne, Texas | 28.49 | 723.6 | 29.78 | 756.4 | 61 | 16.1 | 100 | S | 10 | 4.5 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.19 | 690.6 | 30.15 | 765.8 | 33 | 0.6 | 79 | SE | 1 | 0.4 | | 5cs | 0 | W | | 0 | 0 | Fair | |
| Boston, Massachusetts | 30.03 | 762.8 | 30.19 | 766.8 | 27.5 | — 2.5 | 59 | W | 8 | 3.6 | | 5ck | 0 | W | | 0 | 0 | Fair | |
| Brackettville, Texas | 28.72 | 729.5 | 29.73 | 755.1 | 64 | 17.8 | 94 | SE | 4 | 1.8 | | | 10s | | SE | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 29.21 | 741.9 | 30.35 | 770.9 | — 5 | —20.6 | 100 | Calm | 0 | 0 | | 2cs | 0 | Calm | | 0 | 0 | Clear | |
| Brownsville, Texas | 29.81 | 757.2 | 29.85 | 758.2 | 70 | 21.1 | 95 | SE | 2 | 0.9 | | 8cs | 0 | Calm | | 0 | 0 | Fair | |
| Buffalo, New York | 29.39 | 746.5 | 30.14 | 765.5 | 18 | — 7.8 | 76 | SW | 7 | 3.1 | | | 10n | | SW | Inap. | Inap. | Light snow. | |
| Burkes, Arizona | | | | | 49 | 9.4 | 31 | S | | | 1 | 2ck | 0 | W | | 0 | 0 | Clear | |
| Burlington, Vermont | 29.80 | 756.9 | 30.11 | 764.8 | 18 | — 7.8 | 68 | S | 8 | 3.6 | | 0 | 8s | | Calm | Inap. | Inap. | Fair | |
| Cairo, Illinois | 29.78 | 756.4 | 30.20 | 767.1 | 30 | — 1.1 | 89 | NE | 12 | 5.4 | | | 10s | | Calm | Inap. | Inap. | Cloudy | |
| Camp Apache, Arizona | | | | | | | | | | | | | | | | | | | |
| Camp Grant, Arizona | 25.14 | 638.5 | 29.94 | 760.5 | 53 | 11.7 | 19 | N | 8 | 3.6 | | 5cs | 0 | Calm | | 0 | 0 | Fair | |
| Camp Verde, Arizona | | | | | 39 | 3.9 | 38 | S | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Campo, California | 27.41 | 696.2 | 29.98 | 761.5 | 45 | 7.2 | 92 | S | 4 | 1.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Cape Hatteras, N. Carolina | 30.18 | 766.6 | 30.19 | 766.8 | 47 | 8.3 | 92 | Calm | 0 | 0 | | 10ck;k | 0 | W | | 0 | 0 | Cloudy | |
| Cape Henry, Virginia | 30.19 | 766.8 | 30.21 | 767.3 | 41 | 5.0 | 82 | NE | 16 | 7.2 | | 0 | 1s | | Calm | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.14 | 765.5 | 30.16 | 766.1 | 52 | 11.1 | 86 | S | 8 | 3.6 | | 10k | 0 | W | | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 30.16 | 766.1 | 30.19 | 766.8 | 39 | 3.9 | 55 | E | 10 | 4.5 | | 10ck | 0 | W | | 0 | 0 | Cloudy | |
| Castroville, Texas | 29.07 | 738.4 | 29.76 | 755.9 | 65 | 18.3 | 89 | S | 4 | 1.8 | | | 10s | | S | 0 | 0 | Threatening | |
| Charleston, South Carolina | 30.13 | 765.3 | 30.19 | 766.8 | 55 | 12.8 | 74 | W | 5 | 2.2 | | 7k | 0 | W | | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 23 86 | 606.0 | 29.80 | 756.9 | 12 | —11.1 | 61 | N | 34 | 15.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Chicago, Illinois | 29.44 | 747.8 | 30.18 | 766.6 | 20 | — 6.7 | 70 | W | 1 | 0.4 | | 10cs | 0 | Calm | | 0 | 0 | Cloudy | |
| Cincinnati, Ohio | 29.58 | 751.3 | 30.28 | 769.1 | 25 | — 3.9 | 62 | N | 6 | 2.7 | | 1k | 0 | N | | Inap. | Inap | Clear | |
| Cleveland, Ohio | 29.45 | 748.0 | 30.23 | 767.8 | 20 | — 6.7 | 56 | SW | 12 | 5.4 | | 10k | 0 | W | | 0.02 | 0.5 | Cloudy | |
| Coleman City, Texas | | | | | | | | | | | | | | | | | | | |
| Columbus, Ohio | 29.35 | 745.5 | 30.25 | 768.3 | 24 | — 4.4 | 74 | NW | 4 | 1.8 | | 0 | 0 | | | 0.01 | 0.3 | Clear | |
| Concho, Texas | 27.91 | 708.9 | 29.53 | 750.0 | 61 | 16.1 | 66 | S | 6 | 2.7 | | | 10s | | S | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.40 | 746.7 | 29.85 | 758.2 | 64 | 17.8 | 89 | S | 16 | 7.2 | | 6cs;k | 5s | N;S | S | 0 | 0 | Fair | |
| Davenport, Iowa | 29.52 | 749.8 | 30.21 | 767.3 | 19 | — 7.2 | 69 | NW | 6 | 2.7 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Deadwood, Dakota | 25.35 | 643.9 | | | 7 | —13.9 | 77 | NE | 3 | 1.3 | | | 10n | | Calm | 0.05 | 1.3 | Light snow | |
| Decatur, Texas | 28.52 | 724.7 | 29.64 | 752.8 | 60 | 15.6 | 88 | S | 8 | 3.6 | | 0 | 10s | | S | 0.05 | 1.3 | Cloudy | |
| Denison, Texas | 29.02 | 737.1 | 29.79 | 756.7 | 59 | 15.0 | 88 | S | 11 | 4.9 | | | 10s | | S | 0.02 | 0.5 | Cloudy | |
| Denver, Colorado | 24.56 | 623.3 | 29.78 | 756.4 | 32 | 0.0 | 69 | S | 8 | 3.6 | | | 10s | | W | 0 | 0 | Cloudy | |
| Des Moines, Iowa | 29.27 | 743.4 | 30.22 | 767.6 | 19 | — 7.2 | 85 | N | 6 | 2.7 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Detroit, Michigan | 29.44 | 747.8 | 30.16 | 766.1 | 19 | — 7.2 | 85 | W | 6 | 2.7 | | 10k | 0 | W | | Inap. | Inap. | Cloudy | |
| Dodge City, Kansas | 27.31 | 693.7 | 29.71 | 754.6 | 22 | — 5.6 | 86 | E | 16 | 7.2 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 29.46 | 748.3 | 30.22 | 767.6 | 16 | — 9.4 | 65 | NE | 5 | 2.2 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 29.50 | 749.3 | 30.28 | 769.1 | —10 | —23.3 | 77 | NW | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.04 | 737.6 | 29.76 | 755.9 | 61 | 16.1 | 88 | SE | 3 | 1.3 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Eastport, Maine | 30.06 | 763.5 | 30.13 | 765.3 | 22 | — 5.6 | 65 | NW | 10 | 4.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Edinburg, Texas | | | | | 67 | 19.4 | 79 | S | | | 1 | 0 | 10s | | S | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.15 | 664.2 | | | 55 | 12.8 | 22 | W | 5 | 2.2 | | 8cs | 0 | Calm | | 0 | 0 | Fair | |
| Erie, Pennsylvania | 29.39 | 746.5 | 30.15 | 765.8 | 22 | — 5.6 | 72 | SW | 8 | 3.6 | | | 10s | | SW | 0.03 | 0.8 | Cloudy | |
| Escanaba, Michigan | 29.47 | 748.5 | 30.20 | 767.1 | 0 | —17.8 | 55 | NW | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Florence, Arizona | 28.41 | 721.6 | 30.01 | 762.2 | 48 | 8.9 | 43 | SW | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Buford, Dakota | 28.22 | 716.8 | | | — 5 | —20.6 | 63 | NW | 9 | 4.0 | | 0 | 5s | | Calm | 0 | 0 | Fair | |
| Fort Craig, New Mexico | 25.44 | 646.2 | 29.50 | 749.3 | 40 | 4.4 | 39 | W | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.09 | 637.3 | 30.05 | 763.3 | 59 | 15.0 | 26 | W | 17 | 7.6 | | 10k | 0 | SW | | 0 | 0 | Cloudy | |
| Fort Gibson, Indian Ter | 29.33 | 745.0 | 29.87 | 758.7 | 41 | 5.0 | 65 | E | 6 | 2.7 | | | 10s | | E | Inap. | Inap. | Cloudy | |
| Fort Griffin, Texas | 28.55 | 725.2 | 29.84 | 757.9 | 41 | 5.0 | 78 | N | 3 | 1.3 | | 2c | 0 | W | | Inap. | Inap. | Fair | |
| Fort Keogh, Montana | 27.66 | 702.6 | | | 6 | —14.4 | 76 | NW | 6 | 2.7 | | 2c | 0 | Calm | | Inap. | Inap. | Clear | |
| Fort Mckavett, Texas | 27.58 | 700.5 | 29.44 | 747.8 | 60 | 15.6 | 88 | SW | 16 | 7.2 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | | | | | | | | | | | | | | | | | | | |
| Fort Sill, Indian Territory | 28.62 | 726.9 | 29.76 | 755.9 | 32 | 0.0 | 89 | N | 16 | 7.2 | | 5c | 0 | Calm | | 0 | 0 | Fair | |
| Fort Stevenson, Dakota | 28.35 | 720.1 | | | —12 | —24.4 | 75 | W | 13 | 5.8 | | 1c | 0 | Calm | | 0 | 0 | Fair | |
| Fredericksburg, Texas | 28.10 | 717.7 | 29.61 | 752.1 | 62 | 16.7 | 88 | SW | 10 | 4.5 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 29.92 | 760.0 | 29.97 | 761.2 | 67 | 19.4 | 95 | S | 4 | 1.8 | | 10k | 0 | SW | | 0 | 0 | Cloudy | |
| Graham, Texas | 28.76 | 730.5 | 29.83 | 757.7 | 42 | 5.6 | 83 | NW | 4 | 1.8 | | 5cs | 0 | Calm | | 1.62 | 38.6 | Fair | |
| Grand Haven, Michigan | 29.47 | 748.5 | 30.16 | 766.1 | 20 | — 6.7 | 70 | NW | 10 | 4.5 | | | 10s | | NW | Inap. | Inap. | Cloudy | |
| Indianapolis, Indiana | 29.40 | 746.7 | 30.23 | 767.8 | 22 | — 5.6 | 72 | W | 1 | 0.4 | | 5cs | 0 | W | | 0.04 | 1.0 | Fair | |
| Indianola, Texas | 29.91 | 759.7 | 29.93 | 760.2 | 68 | 20.0 | 90 | S | 8 | 3.6 | | | 10s | | S | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 28.66 | 728.0 | 29.80 | 756.9 | 43 | 6.1 | 75 | NW | 12 | 5.4 | | 5cs | 0 | Calm | | 0 | 0 | Fair | |
| Jacksonville, Florida | 30.18 | 766.6 | 30.20 | 767.1 | 55 | 12.8 | 81 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.54 | 750.3 | 30.20 | 767.1 | 23 | — 5.0 | 60 | NE | 4 | 1.8 | | | 10s | | W | Inap. | Inap. | Cloudy | |
| Key West, Florida | 30.11 | 764.8 | 30.15 | 765.8 | 70 | 21.1 | 76 | E | 11 | 4.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Kittyhawk North Carolina | 30.14 | 765.5 | 30.17 | 766.3 | 44 | 6.7 | 92 | Calm | 0 | 0 | | 10ck | Fog | W | Calm | 0 | 0 | Cloudy | |
| Knoxville, Tennessee | 29.14 | 740.1 | 30.18 | 766.6 | 41.5 | 5.3 | 70 | NE | 3 | 1.3 | | | 10s | | Calm | 0 | 0 | Threatening | |
| La Crosse, Wisconsin | 29.40 | 746.7 | 30.21 | 767.3 | 9 | —12.8 | 78 | N | 5 | 2.2 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| La Mesilla, New Mexico | 26.00 | 660.4 | 30.15 | 765.8 | 49 | 9.4 | 24 | NW | 7 | 3.1 | | 5cs | 0 | NW | | 0 | 0 | Fair | |
| Laredo, Texas | 29.40 | 746.7 | 29.73 | 755.1 | 68 | 20.0 | 79 | SE | 6 | 2.7 | | 10ck | 0 | W | | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.24 | 742.7 | 30.14 | 765.5 | 22 | — 5.6 | 58 | NE | 6 | 2.7 | | | 10s | | | 0 | 0 | Cloudy | |
| Los Angeles, California | 29.66 | 753.4 | 30.00 | 762.0 | 55.0 | 12.8 | 84 | Calm | 0 | 0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Louisville, Kentucky | 29.64 | 752.8 | 30.23 | 767.8 | 27 | — 2.8 | 53 | N | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.48 | 748.8 | 30.18 | 766.6 | 43 | 6.1 | 59 | SW | 1 | 0.4 | | 0 | 8ks | | Calm | 0 | 0 | Cloudy | |
| Madison, Wisconsin | 29.13 | 739.9 | 30.20 | 767.1 | 13 | —10.6 | 81 | N | 6 | 2.7 | | 0 | 5s | | SW | 0 | 0 | Fair | |
| Marquette, Michigan | 29.39 | 746.5 | 30.18 | 766.6 | 0 | —17.8 | 39 | W | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Mason, Texas | 28.21 | 716.5 | 29.91 | 759.7 | 63 | 17.2 | 83 | S | 7 | 3.1 | | | 10s | | S | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.85 | 758.2 | 30.18 | 766.6 | 39 | 3.9 | 91 | NE | 8 | 3.6 | | | 10s | | Calm | 0.43 | 10.9 | Cloudy | |
| Milwaukee, Wisconsin | 29.40 | 746.7 | 30.20 | 767.1 | 14 | —10.0 | 65 | NW | 6 | 2.7 | | 5c | 1ks | W | Calm | 0 | 0 | Fair | |
| Mobile, Alabama | 30.10 | 764.5 | 30.14 | 765.5 | 56 | 13.3 | 97 | S | 3 | 1.3 | | 10c | Fog | W | | 0 | 0 | Cloudy | |
| Montgomery, Alabama | 29.92 | 760.0 | 30.16 | 766.1 | 49 | 9.4 | 85 | SE | 1 | 0.4 | | 5c | Fog | W | Calm | 0 | 0 | Fair | |
| Morgantown, West Virginia | 29.08 | 738.6 | 30.18 | 766.6 | 35 | 1.7 | 70 | S | 8 | 3.6 | | | 10ks | | SW | 0 | 0 | Cloudy | |
| Mt. Washington, N. H. | 23.33 | 592.6 | 29.69 | 754.1 | 14 | —10.0 | 81 | W | 52 | 23.2 | | | Fog | | W | 0.24 | 6.1 | Foggy | |
| Nashville, Tennessee | 29.61 | 752.1 | 30.16 | 766.1 | 40 | 4.4 | 73 | E | 1 | 0.4 | | | 10s | | Calm | 0.01 | 0.3 | Cloudy | |
| New Haven, Connecticut | 30.08 | 764.0 | 30.20 | 767.1 | 36 | 2.2 | 61 | SE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| New London, Connecticut | 30.16 | 766.1 | 30.21 | 767.3 | 32 | 0.0 | 79 | SE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| New Orleans, Louisiana | 30.01 | 762.2 | 30.07 | 763.8 | 60 | 15.6 | 88 | S | 4 | 1.8 | | 5cs | 2s | W | S | 0 | 0 | Fair | |
| Newport, Rhode Island | 30.18 | 766.6 | 30.24 | 768.1 | 31 | — 0.6 | 58 | Calm | 0 | 0 | | 2cs | 2s | W | Calm | 0 | 0 | Fair | |
| New York, New York | 30.02 | 762.5 | 30.21 | 767.3 | 33 | 0.6 | 69 | SW | 6 | 2.7 | | Haze | Haze | | | 0 | 0 | Hazy | |
| Norfolk, Virginia | 30.13 | 765.3 | 30.19 | 766.8 | 42 | 5.8 | 91 | E | 0 | 2.7 | | | 10c | | NE | 0 | 0 | Cloudy | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r —10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.12 | 688.8 | 29.86 | 758.4 | 18 | — 7.8 | 84 | NE | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.3 | Heavy snow | |
| Olympia, Washington Ter. | 30.08 | 764.0 | 30.12 | 765.0 | 33.2 | 0.7 | 100 | S | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | Inap. | Inap. | Dense fog | |
| Omaha, Nebraska | 29.00 | 736.6 | 30.17 | 766.3 | 21 | — 6.1 | 86 | N | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | Light snow | |
| Oswego, New York | 29.80 | 756.9 | 30.14 | 765.5 | 27 | — 2.6 | 76 | SW | 16 | 7.2 | ..... | ..... | 10s | ..... | SW | 0.24 | 6.1 | Cloudy | |
| Pembina, Dakota | 29.35 | 745.5 | 30.33 | 770.4 | —25 | —31.7 | 100 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pa | 30.16 | 766.1 | 30.21 | 767.3 | 37 | 2.8 | 63 | NW | 7 | 3.1 | ..... | ..... | 10ks | ..... | NW | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.73 | 729.7 | 30.52 | 775.2 | 56 | 13.3 | 35 | E | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.47 | 443.1 | 29.98 | 753.9 | 9 | —12.8 | 78 | W | 14 | 6.3 | ..... | 0 | 8ks | ..... | W | 0 | 0 | Cloudy | |
| Ploche, Nevada | 23.96 | 608.6 | 29.73 | 755.1 | 37 | 2.8 | 38 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.35 | 745.5 | 30.21 | 767.3 | 25 | — 3.9 | 87 | NW | 1 | 0.4 | ..... | ..... | 10n | ..... | NW | 0.01 | 0.3 | Light snow | |
| Port Huron, Michigan | 29.44 | 747.8 | 30.16 | 766.1 | 19 | — 7.2 | 69 | W | 8 | 3.6 | ..... | 2ck | 2ks | W | W | Inap. | Inap. | Fair | |
| Portland, Maine | 30.08 | 764.0 | 30.14 | 765.5 | 25 | — 3.9 | 62 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Portland, Oregon | 30.07 | 763.8 | 30.17 | 766.3 | 46.0 | 7.8 | 92 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Prescott, Arizona | 24.64 | 626.8 | 30.00 | 762.0 | 39 | 3.9 | 38 | W | 6 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Punta Rassa, Florida | 30.18 | 766.6 | 30.19 | 766.8 | 61 | 16.1 | 77 | NE | 8 | 3.6 | ..... | 2c | Haze | SW | Calm | 0 | 0 | Clear | |
| Red Bluff, California | 29.58 | 751.8 | 29.94 | 760.5 | 50 | 10.0 | 72 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rio Grande City, Texas | 29.67 | 753.6 | 29.88 | 758.9 | 67 | 19.4 | 89 | SE | 8 | 3.6 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Rochester, New York | 29.49 | 749.0 | 30.16 | 766.1 | 17 | — 8.3 | 67 | W | 7 | 3.1 | ..... | 5k | 0 | W | ..... | 0.07 | 1.8 | Fair | |
| §Roseburg, Oregon | 29.67 | 753.1 | 30.16 | 766.1 | 36.0 | 2.2 | 95 | W | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Sacramento, California | 29.87 | 758.7 | 29.95 | 760.7 | 51 | 10.6 | 90 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.62 | 752.3 | 30.21 | 768.1 | 22 | — 5.6 | 72 | NE | 9 | 4.0 | ..... | 2k | 5s | W | W | 0 | 0 | Fair | |
| St. Marks, Florida | 30.14 | 765.5 | 30.16 | 766.1 | 47 | 8.3 | 100 | Calm | 0 | 0 | ..... | 0 | 1s;fg | ..... | Calm | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.30 | 744.2 | 30.22 | 767.6 | 7 | —13.9 | 54 | NW | 4 | 1.8 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.59 | 650.0 | 29.92 | 760.0 | 39 | 3.9 | 46 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | |
| San Antonio, Texas | 29.16 | 740.7 | 29.72 | 754.9 | 67 | 19.4 | 89 | S | 3 | 1.3 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light rain | |
| San Diego, California | 29.96 | 761.0 | 30.03 | 762.8 | 56 | 13.3 | 84 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.48 | 748.8 | 30.20 | 767.1 | 21 | — 6.1 | 71 | SW | 12 | 5.4 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Sandy Hook, New Jersey | 30.16 | 766.1 | 30.19 | 766.8 | 35 | 1.7 | 53 | SW | 8 | 3.6 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| San Francisco, California | 29.92 | 760.0 | 29.99 | 761.7 | 54 | 12.2 | 74 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 23.11 | 587.0 | 29.95 | 760.1 | 35 | 1.7 | 53 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.11 | 764.8 | 30.20 | 767.1 | 53 | 11.7 | 86 | SW | 1 | 0.4 | ..... | 8ck | Fog | W | Calm | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.72 | 754.9 | 29.94 | 760.5 | 54 | 12.2 | 74 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Silver City, New Mexico | 24.24 | 615.7 | 30.55 | 776.0 | 35 | 1.7 | 52 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.15 | 765.8 | 30.19 | 766.8 | 54 | 12.2 | 87 | SW | 5 | 2.2 | ..... | 1cs | Haze | NW | Calm | 0 | 0 | Clear | |
| Springfield, Massachusetts | 30.05 | 763.3 | 30.19 | 766.8 | 29 | — 1.7 | 78 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Stockton, Texas | 26.82 | 681.2 | 29.82 | 757.4 | 56 | 13.3 | 81 | SW | 12 | 5.4 | ..... | ..... | 8s | ..... | SW | 0.42 | 10.7 | Cloudy | |
| Thatcher's Island, Mass | 30.12 | 765.0 | 30.18 | 766.6 | 27 | — 2.8 | 53 | W | 12 | 5.4 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Toledo, Ohio | 29.47 | 748.5 | 30.20 | 767.1 | 25 | — 3.9 | 87 | SW | 8 | 3.6 | ..... | ..... | 10n | ..... | SW | Inap. | Inap. | Light snow | |
| Tucson, Arizona | 27.47 | 697.7 | 30.02 | 762.5 | 50 | 10.0 | 51 | SE | 3 | 1.3 | ..... | 2k | 0 | S | ..... | 0 | 0 | Fair | |
| Umatilla, Oregon | 29.76 | 755.9 | 30.26 | 768.6 | 36.0 | 2.2 | 90 | E | 6 | 2.7 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Fair | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 30 | — 1.1 | 77 | Calm | ..... | ..... | 0 | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Uvalde, Texas | 28.98 | 736.1 | 29.79 | 756.7 | 65 | 18.3 | 84 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.79 | 756.7 | 30.05 | 763.3 | 57 | 13.9 | 75 | S | 12 | 5.4 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Virginia City, Montana | 24.12 | 612.6 | 29.60 | 751.8 | 23 | — 5.0 | 86 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.05 | 1.3 | Cloudy | |
| Visalia, California | 29.58 | 751.3 | 29.96 | 760.7 | 49 | 9.4 | 89 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 30.10 | 764.5 | 30.22 | 767.6 | 36 | 2.2 | 53 | E | 4 | 1.8 | ..... | 1cs | 5ks | W | W | 0 | 0 | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 40 | 4.4 | 48 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.08 | 764.0 | 30.16 | 766.1 | 53 | 11.7 | 73 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.64 | 651.2 | 30.00 | 762.0 | 26 | — 3.3 | 63 | NE | 6 | 2.7 | ..... | 1cs | 0 | SW | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass | 30.17 | 766.3 | 30.22 | 767.6 | 32 | 0.0 | 79 | N | 3 | 1.3 | ..... | ..... | 8s | ..... | SW | 0 | 0 | Cloudy | |
| Yankton, Dakota | 28.94 | 735.1 | 30.36 | 771.1 | 11 | —11.7 | 80 | N | 7 | 3.1 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light snow | |
| Yuma, Arizona | 29.67 | 753.6 | 29.83 | 757.7 | 56 | 13.3 | 63 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.28 | 718.3 | 29.71 | 754.6 | 36 | 2.2 | 62 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Havana, Cuba, W. I | 30.07 | 763.8 | 30.12 | 765.0 | 69 | 20.6 | 75 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Thomas Herran. |
| Medellin, Colombia, S. A | 25.23 | 640.8 | ..... | ..... | 65.0 | 18.3 | 82 | NE | 1 | 0.4 | ..... | 4ck | 1s | ..... | ..... | 0.30 | 7.6 | ..... | W. H. W. Jones. |
| Navassa, W. I | 29.97 | 761.2 | 30.05 | 763.3 | 78 | 25.6 | ..... | NE | 6.2 | 2.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Partly cl'dy. | O. J. Hering. |
| Paramaribo, D. Guiana, S. A | 30.00 | 762.0 | 30.00 | 762.0 | 82 | 27.8 | 79 | E | ..... | ..... | 2 | 3c | 4k | E | ..... | 0 | 0 | Fair | Robert Mason. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Fortescue & W. Wood. |
| York Factory, B. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,181.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,833 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort MacKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.0 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,460 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,385.8 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.46 in. The instrumental error of the barometer at Medellin is not known. §Observation taken 25 minutes late.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.92 | 760.0 | 53 | 11.7 | 51 | 10.6 | 86 | SW | 22 | 9.8 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Navy Yard, Pensacola, Fla. | 30.25 | 768.3 | 64 | 17.8 | 64 | 17.8 | 89 | SE | 1 | 0.4 | ..... | ..... | 8 | ..... | NE | 0 | 0 | ..... | ..... | Fair..... | |
| Navy Yard, Portsmouth, N.H | 30.10 | 764.5 | 65 | 18.3 | 29 | — 1.7 | 66 | SW | ..... | ..... | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan.....* | 30.21‡ | 767.3‡ | ..... | ..... | 39.5 | 4.2 | 52 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Adams, Panama ..... | 30.00 | 762.0 | 79 | 26.1 | 77 | 25.0 | 95 | NW | ..... | ..... | 3 | ..... | 5 | ..... | N;W | ..... | ..... | ..... | ..... | Fair ..... | |
| Alaska..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Alliance, Genoa, Italy..... | 30.09‡ | 764.3‡ | ..... | ..... | 59 | 15.0 | 54 | N | ..... | ..... | 0–1 | ..... | 8 | ..... | N | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Ashuelot, Hong-Kong, China. ..* | 29.96‡ | 761.0‡ | ..... | ..... | 62 | 16.7 | 88 | E | ..... | ..... | 2 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Rainy..... | |
| Canonicus, New Orleans, La. ....* | 30.06 | 763.5 | 47 | 8.3 | 61 | 16.1 | 88 | SE | ..... | ..... | 2 | ..... | 8 | ..... | SE | ..... | ..... | ..... | ..... | Fair ..... | |
| Colorado, New York, N. Y..... | 30.18 | 766.6 | 35 | 1.7 | 35 | 1.7 | 100 | SSW | 13 | 5.8 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Misty..... | |
| Constitution Lisbon, Portugal..... | 30.04‡ | 763.0‡ | ..... | ..... | 58 | 14.4 | 100 | ENE | ..... | ..... | 2 | ..... | 7 | ..... | Calm | ..... | ..... | ..... | ..... | Fair..... | |
| Despatch, Naples, Italy..... | 30.15‡ | 765.8‡ | ..... | ..... | 60 | 15.6 | 65 | SSE | ..... | ..... | 2 | ..... | 8 | ..... | S | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Franklin, Norfolk, Va..... ....* | 30.28 | 769.1 | 59 | 15.0 | 43 | 6.1 | 83 | ENE | 7 | 3.1 | ..... | ..... | 2 | ..... | E | 0 | 0 | ..... | ..... | Clear. ..... | |
| Gettysburg, Genoa, Italy ..... | 30.03‡ | 762.8‡ | ..... | ..... | 64 | 17.8 | 73 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Fair ..... | |
| Hartford, Montevideo, Uruguay*... | 30.10 | 764.5 | 69 | 20.6 | 71 | 21.7 | 71 | NNE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear ..... | |
| Lackawana, S. 1° 15′, W. 81° 01′....* | 29.78‡ | 756.4‡ | ..... | ..... | 76 | 24.4 | 86 | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Michigan, Erie, Pa.....† | 30.09 | 764.3 | ..... | ..... | 22 | — 5.6 | 86 | WSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast... | |
| Monocacy, Shanghai, China... ...* | 30.16‡ | 766.6‡ | ..... | ..... | 44 | 6.7 | 84 | E | ..... | ..... | 3 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Rainy ..... | |
| Monongahela, Yokohama, Japan ....* | 30.16‡ | 766.6‡ | ..... | ..... | 43 | 6.1 | 63 | NNW | ..... | ..... | 2–3 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds.... | |
| New Hampshire, Port Royal, S. C.....* | 30.25 | 768.3 | 58 | 14.4 | 56 | 13.3 | 87 | WSW | 4 | 1.8 | ..... | ..... | 8 | ..... | W | 0 | 0 | ..... | ..... | Cloudy..... | |
| Onward, Callao, Peru. ..... ..†* | 30.04 | 763.0 | ..... | ..... | 68 | 20.0 | 95 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | Long | W | Fair..... | |
| Palos, Tientsin, China.....* | 30.29 | 769.4 | 30 | — 1.1 | 32 | 0.0 | 79 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 47 | 8.3 | 85 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Pensacola. Valparaiso, Chili..... | 29.92‡ | 760.0‡ | ..... | ..... | 60 | 15.6 | 94 | S | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Plymouth. N. 40° 51′, W. 68° 34′..... | 30.16‡ | 766.6‡ | ..... | ..... | 39 | 3.9 | 100 | E | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Mod'ate | E | Clear..... | |
| §Powhatan, N. 17° 54′, W. 65° 00′..... | 30.06‡ | 763.5‡ | ..... | ..... | 79 | 26.1 | 74 | NNE | ..... | ..... | 1 | ..... | 2 | ..... | NNE | 0 | 0 | Long | NE | Clear..... | |
| Quinnebaug, Port Mahon, Minorca Id | 30.04‡ | 763.0‡ | ..... | ..... | 58 | 14.4 | 82 | ESE | ..... | ..... | 1 | ..... | 10 | ..... | SSE | ..... | ..... | ..... | ..... | Sprinkling.. | |
| Ranger. Foochow, China.....* | 30.08‡ | 764.0‡ | ..... | ..... | 60 | 15.6 | 82 | NE | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Raining..... | |
| Richmond, Lake Tamsah, Suez Canal | 30.16‡ | 766.1‡ | ..... | ..... | 72 | 22.2 | 46 | E | ..... | ..... | 1 | ..... | 5? | ..... | E | [0 | 0 | Smooth | ..... | Cloudy? ..... | |
| Rio Bravo, Brownsville, Texas..... | 29.88 | 758.9 | 68 | 20.0 | 67 | 19.4 | 100 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Santee, Annapolis, Md... ..... | 30.20‡ | 767.1‡ | ..... | ..... | 38 | 3.3 | 72 | SE | ..... | ..... | 1 | ..... | 8 | ..... | SW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Saratoga, Hampton Roads, Va..... | 30.19‡ | 766.8‡ | ..... | ..... | 44 | 6.7 | 92 | NE | ..... | ..... | 2 | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Clear..... | |
| St. Louis, League Island, Pa..... | 30.10 | 764.5 | 52 | 11.1 | 33 | 0.6 | 80 | E | 7 | 3.1 | ..... | ..... | 8 | ..... | SW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Supply, N. 39° 20′, W. 72° 19′..... | 30.23‡ | 767.8‡ | ..... | ..... | 37 | 2.8 | 71 | NNE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Trenton Naples, Italy. .....* | 30.15‡ | 765.8‡ | ..... | ..... | 56 | 13.3 | 75 | SE | ..... | ..... | 0–1 | ..... | 10 | ..... | S;E | 0.01 | 0.3 | Smooth | ..... | Cloudy..... | |
| Tuscarora, Salinas Cruz, Mexico*... | 29.92‡ | 760.0‡ | ..... | ..... | 77 | 25.0 | 69 | NNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Wabash Boston, Mass..... | 30.15‡ | 766.6‡ | ..... | ..... | 27 | — 2.8 | 89 | W | 7 | 3.1 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Wyoming, N. 36° 53′, E. 26° 24′ ...* | 30.24‡ | 768.1‡ | ..... | ..... | 52 | 11.1 | 93 | N | ..... | ..... | 3–4 | ..... | 2 | ..... | N | ..... | ..... | Mod'ate | N | Fair ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm. §The rain-fall heretofore reported has been ten times too large.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | |
| S. S. Colima, N. 36° 32′, W. 122° 14′...† | | 30.02‡ | 762.5‡ | 57 | 13.9 | 94 | NW | | | 3 | | 8 | | SE | 0 | Heavy ground | NW | Misty | Capt. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Granada, Capt. Austin, N. 14° 14′, W. 91° 58′...† | | 30.12‡ | 765.0‡ | 79 | 26.1 | | NW | | | 3 | | 0 | | | | Light | S | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; and no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, Hong-Kong, China | | 29.80‡ | 756.9‡ | 60 | 15.6 | 100 | E | | | 5 | | n | | E | | Smooth | NNE | Thunder-storm. | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 26° 30′, E. 122° 30′...† | | 29.77‡ | 756.1‡ | 63 | 17.2 | | NE | | | 6 | | k | | SW | | High | NE | Raining | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, Bremerhaven, Germany | | 29.90‡ | 759.4‡ | | | | SSW | | | 4 | | | | SW | | | | Raining | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Lo'wr 0—10. | Upper. From— | Lower. From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Liverpool | | 31.08‡ | 764.0‡ | 38 | 3.3 | | ESE | | | 4 | | 9 | | ESE | Mod'ate | | | Cloudy | Captain Sargent. Wm. Shackford, Chief Officer. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | |
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Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
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Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES.** (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, N. 32° 56′, W. 78° 44′ | | 30.07‡ | 763.8‡ | 62 | 16.7 | 61 | SW | 4 | 1.8 | | | Sm'e | | Calm | 0 | Smooth | | Smoky | Capt. James Jorgensen |
| | | | | | | | | | | | | | | | | | | | |
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Note.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$.) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASS'G'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 17, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | 29.85 | 758.3 | 62.1 | 16.7 | 73 | SW | | | 3 | | 10 | | | 0.468 | 11.5 | | |
| Nemours | | | 29.78 | 756.4 | 64.0 | 17.8 | 88 | N | | | 3 | | 2 | | | 0 | 0 | Fair | Kesxuche. |
| Algiers | | | 29.85 | 758.3 | 62.6 | 17.0 | 83 | NE | | | 2 | | 2 | | | 0 | 0 | Fair | Tourillere. |
| La Calle | | | 30.01 | 762.2 | 59.9 | 15.6 | 92 | ENE | | | 3 | | 5 | | | 0.039 | 1.0 | Cloudy | Foufrede. |
| Tunis | | | 30.08 | 764.0 | 70.2 | 21.2 | 50 | SW | | | 3 | | 5 | | | 0 | 0 | Cloudy | Jacques. |
| Sfax | | | 30.15 | 765.7 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 29.87 | 758 8 | 74.3 | 23.5 | 6 | S | | | 3 | | 0 | | | 0 | 0 | Clear | Herbin. |
| Tebessa | | | 30.10 | 764.5 | 67.6 | 19.8 | 18 | W | | | 3 | | 8 | | | 0 | 0 | Very cloudy | Watrin. |
| Geriville | | | 29.95 | 760.6 | 65.9 | 18.3 | 84 | S | | | 4 | | 0 | | | 0 | 0 | Clear | Brugnlaux. |
| Laghouat | | | 30.00 | 761.9 | 70.6 | 21.4 | 16 | SW | | | 5 | | 0 | | | 0 | 0 | Clear | Bertrand. |
| Biskra | | | 30.05 | 763.2 | 73.6 | 23.1 | 33 | ESE | | | 3 | | 2 | | | 0 | 0 | Fair | Chanvaux. |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.47 | 748.5 | 30.02 | 762.4 | 58.6 | 14.8 | 48 | SW | | | 4 | | 2 | | | 0 | 0 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.11 | 739.5 | 29.90 | 759.5 | 42.8 | 6.0 | 88 | W | | | 1 | | 10 | | | 0.154 | 3.9 | | Dr. Wierzbiski |
| Eperies | 29.00 | 736.7 | 29.89 | 759.3 | 45.7 | 7.6 | | S | | | 1 | | 10s | | SE | 0 | 0 | | Julius Mikolik. |
| Gratz | 28.74 | 730.1 | 29.99 | 761.8 | 56.1 | 13.4 | 44 | SSE | | | 2 | | 7 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.56 | 725.4 | 29.99 | 761.8 | 52.9 | 11.6 | 47 | NW | | | 4 | | 5 | | | 0.163 | 4.15 | Raining | Prof. A. Gottschling. |
| Kremsmünster | 28.65 | 727.6 | 30.00 | 761.9 | 49.6 | 9.8 | 63 | WSW | | | 4 | | 5 | | | 0.051 | 1.3 | | Prof. C. Wagner. |
| Lemberg | 28.84 | 732.4 | 29.84 | 758.0 | 39.0 | 3.9 | 87 | NW | | | 1 | | 10 | | | | | | Dr. T. Stanecki. |
| Pola | 30.02 | 762.5 | 30.13 | 765.3 | 55.4 | 13.0 | 70 | W | | | 1 | | 5 | | | 0.039 | 1.0 | | I.R.Hydrographic Office. |
| Szathmar | 29.51 | 749.6 | 29.98 | 761.5 | 50.4 | 10.2 | 67 | W | | | 3 | | 8 | | | 0 | 0 | | Julius Osics, S. J. |
| Szegedin | | | | | | | | | | | | | | | | | | | Karl Stancel. |
| Trieste | | | | | | | | | | | | | | | | | | | P. Busin. |
| Vienna | 30.04 | 763.1 | 30.15 | 765.7 | 58.6 | 12.0 | 72 | Calm | | | 0 | | 4 | | | 0 | 0 | | I. R. Central Met. Obs'y. |
| | 29.26 | 743.2 | 29.97 | 761.3 | 57.0 | 13.9 | 39 | W | | | 4 | | 8 | | | 0 | 0 | | |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.95 | 760.7 | 30.16 | 766.0 | 39.7 | 4.3 | 77 | NE | | | 1 | | 10 | | NE | 0 | 0 | | Royal Observatory |
| Furnes | 30.10 | 764.6 | 30.13 | 765.2 | 43.3 | 6.3 | 79 | ENE | | | 2 | | 10 | | | 0 | 0 | | M. E. de Cae |
| Maeseyck | 30.05 | 763.3 | 30 18 | 766.5 | 37.0 | 2.8 | 83 | N | | | 2 | | 10 | | | 0 | 0 | | M. Pierrot |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:9, instead of 0:54, p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.07 | 763.8 | 30.18 | 766.6 | 36.4 | 2.4 | ..... | SSE | 14 | 6.3 | ..... | ..... | 7 | ..... | ..... | 0.025 | 0.63 | D. clouds | W. Boswell. |
| Ardrossan | 29.99 | 761.7 | 30.01 | 762.2 | 37 | 2.8 | ..... | ESE | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Snowing | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.88 | 758.9 | 33.5 | 0.8 | ..... | NE | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.97 | 761.2 | 38.5 | 3.6 | ..... | ESE | 32 | 14.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 30.03 | 762.8 | 36.0 | 2.2 | ..... | E | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | Thomas Mackereth. |
| Bradford, Yorkshire | 29.69 | 754.1 | 30.08 | 764.0 | 36.1 | 2.3 | ..... | E | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.09 | 2.3 | Overcast | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.92 | 760 0 | 29.96 | 761.0 | 83.5 | 28.6 | ..... | NE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | Gloomy | Pvt. G. Surgener, A. H. C. |
| Cambridge, Observatory | ..... | ..... | 30.12 | 765.0 | 43.0 | 6.1 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | H. Todd. |
| Cardington | ..... | ..... | 30.07 | 763.8 | 43.0 | 6.1 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 30.00 | 762.0 | 30.13 | 765.3 | 42.7 | 5.9 | ..... | NE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Corpl. Daly, R. E. |
| Dartmoor | 28.47 | 723 1 | 29.96 | 761.0 | 44.0 | 6.7 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Rain and fog | Alexander Watt. |
| Donaghadee | 29.89 | 759.2 | 29.93 | 760.2 | 36 | 2.2 | ..... | SSE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | J. Mac Gowan. |
| Dover | 30.10 | 764.5 | 30.13 | 765.3 | 43 | 6.1 | ..... | ESE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy | J. Costello. |
| Falmouth, Observatory | 29.75 | 755.6 | 29.98 | 761.5 | 52.5 | 11.4 | ..... | S | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.33 | 694.2 | 29.65 | 753.1 | 86.2 | 30.1 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.69 | 754.1 | 29.92 | 760.0 | 86 | 30.0 | ..... | Calm? | ..... | ..... | 2? | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.81 | 757.2 | 40 | 4.4 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.81 | 757.2 | 29.87 | 758.7 | 59.9 | 15.5 | ..... | E | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.83 | 757.7 | 30.03 | 762.8 | 36.7 | 2.6 | ..... | NE | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast | D. G. Maclean. |
| Great Yarmouth | 30.15 | 765.8 | 30.16 | 766.1 | 38 | 3.3 | ..... | ESE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.93 | 760.2 | 30.11 | 764.8 | 42.7 | 5.9 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff, for G. B. Airy. |
| Guernsey | 29.83 | 757.7 | 30.05 | 763.3 | 50 | 10.0 | ..... | SSE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F.R.S. |
| Helston | 30.03 | 762.8 | 30.05 | 763.3 | 54 | 12.2 | ..... | S | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy | M. P. Moyle. |
| Holyhead | 29.81 | 757.2 | 29.87 | 758.7 | 46 | 7.8 | ..... | SSE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.5 | 13. | Drizzling | John Tilston. |
| Jersey | 29.80 | 756.9 | 30.10 | 764.5 | 44.1 | 6.7 | ..... | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | J. Fisher. |
| Kew, Observatory | 30.07 | 763.8 | 30.11 | 764.8 | 45.0 | 7.2 | ..... | ESE | 15 | 6.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty | The Meteorological Of. |
| Leicester, Museum | 29.82 | 757.4 | 30.08 | 764.0 | 39.2 | 4.0 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.99 | 761.7 | 30.06 | 763.5 | 61 | 16.1 | ..... | NE | ..... | ..... | 3 | ..... | 4k | ..... | ..... | ..... | ..... | D. clouds | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 30.00 | 762.0 | 30.09 | 764.3 | 37 | 2.8 | ..... | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.06 | 763.5 | 72.2 | 22.3 | ..... | SE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.91 | 759.7 | 30.11 | 764.8 | 38.3 | 3.5 | ..... | SE | ..... | ..... | 3 | ..... | 10d | SE | ..... | 0.021 | 0.54 | Overcast | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.52 | 749.8 | 30.06 | 763.5 | 38.3 | 3.5 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.05 | 763.3 | 44 | 6.7 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | H. E. Bellamy. |
| Plymouth | 29.91 | 759.7 | 29.99 | 761.7 | 51.4 | 10.8 | ..... | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Merrifield. |
| Roche's Point | 29.81 | 757.2 | 29.86 | 758.4 | 49 | 9.4 | ..... | NNW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded | W. Kennedy. |
| Saint Ann's Head | 29.73 | 755.1 | 29.89 | 759.2 | 47 | 8.3 | ..... | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 30.04 | 763.0 | 36.2 | 2.3 | ..... | SSE | 7 | 3.1 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 30.09 | 764.3 | 54.6 | 12.6 | ..... | SSW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | W. H. Lyne. |
| Sheffield | 29.83 | 757.7 | 30.12 | 765.0 | 37.1 | 2.8 | ..... | ESE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.15 | 3.8 | Overcast | W. F. Cooper. |
| Silloth Rectory | 29.98 | 761.5 | 30.01 | 762.2 | 35.0 | 1.7 | 80 | E | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.167 | 4.24 | Snowing | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.64 | 752.8 | 30.05 | 763.3 | 35.3 | 1.8 | ..... | SW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. S. J. Perry. |
| Stratfield Turgiss | 29.88 | 758.9 | 30.11 | 764.8 | 43.4 | 6.3 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | C.H.Griffith, F..M.S. |
| Thurso | 30.19 | 766.8 | 30.15 | 765.8 | 37 | 2 8 | ..... | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | John Trotter. |
| Truro, Royal Institution | 29.88 | 758.9 | 29.93 | 760.2 | 55 | 12.8 | ..... | SW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy | W. Newcombe. |
| Valencia, Observatory | 29.84 | 757.9 | 29.87 | 758.7 | 50.2 | 10.1 | ..... | SW | 2 | 0.9 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.11 | 764.8 | 30.15 | 765.8 | 68.5 | 20.3 | 39 | S | 9 | 4.0 | ..... | 0 | 8 | ..... | ..... | 0 | 0 | Fine | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.97 | 761.2 | 52.0 | 11 0 | 100 | SE | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0 | 0 | Covered | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 30.11 | 764.8 | 35.9 | 2.2 | ..... | SE | ..... | ..... | 3 | ..... | 10k | ..... | ..... | 0.11 | 2.8 | Cloudy | Andrew Gibb. |
| Mauritius, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Meldrum. |
| Melbourne, Observatory | 29.88 | 758.9 | 29.97 | 761.2 | 56.6 | 13.7 | 67 | SE | 6 | 2.7 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | Fine | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 30.03 | 762.8 | 36 | 2.2 | ..... | ESE | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.06 | 763.5 | 38 | 3.3 | ..... | NW | ..... | ..... | 4 | 5 | 5 | W | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

## British Marine Series.

| Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 36° 04', E. 19° 00' | ..... | ..... | 30.09‡ | 764.3‡ | 59.2 | 15.1 | ..... | ESE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| Barque Belle Isle, N. 31° 49', W. 74° 10' | ..... | ..... | 30.18‡ | 765.3‡ | 66 | 18.9 | ..... | SE | ..... | ..... | 5 | ..... | 8 | ..... | ..... | 4 | Con-fused. | D. clouds | Capt. B. Boyes. |
| Ship British Commodore, N. 38° 45', W. 63° 2' | ..... | ..... | 30.29 | 769.4 | 60 | 15.6 | ..... | SE | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 3 | SE | Blue sky | Capt. A. J. Brown. |
| —— City of Agra, N. 16° 03', W. 41° 48' | ..... | ..... | 30.15‡ | 765.8‡ | 78 | 25.6 | ..... | ENE | ..... | ..... | 5 | ..... | 6 | ..... | ..... | ..... | N | Squally | Capt. J. W. Thorne. |
| Barque Commewyne, N. 33° 49' W. 53° 49' | ..... | ..... | 30.26‡ | 768.6‡ | 66.3 | 19.1 | ..... | SE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Capt. Thos. Young. |
| Barque Fedalina, N. 49° 10', W. 6° 40' | ..... | ..... | 29.90 | 759.4 | 55 | 12.8 | ..... | SW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 3 | WSW | D. clouds | Capt. A. Buchan. |
| Barque Mertole, Off Holyhead, England | ..... | ..... | 29.81‡ | 757.2‡ | 44.9 | 7.2 | ..... | SSE | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Capt. H. L. Fox. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Strathleven, N. 24° 35', E. 36° 00' | ..... | ..... | 29.90‡ | 759.4‡ | 72 | 22.2 | ..... | NNW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Capt. Barlow. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.23 | 666.2 | 29.95 | 760.7 | 64.0 | 17.8 | 80 | SE | ..... | ..... | 2 | 1cs | ..... | ..... | ..... | 0 | 0 | ..... | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.02 | 762.4 | 30.06 | 763.6 | 30.9 | — 0.6 | 57 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 30.13 | 765.4 | 30.15 | 765.9 | 30.6 | — 0.8 | 79 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.52 | 749.8 | 29.56 | 750.9 | 28.6 | — 1.9 | 92 | WSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Farõe) | 30.06 | 763.4 | 30.09 | 764.3 | 37.9 | 3.3 | 80 | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | |
| Vestervig | 29.91 | 759.6 | 30.08 | 763.9 | 36.0 | 2.2 | 93 | W | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.56 | 750.9 | 30.11 | 764.9 | 50.4 | 10.2 | 76 | S | ..... | ..... | 1 | ..... | 5 | ..... | W | 0 | 0 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 30.06 | 763.6 | 30.17 | 766.4 | 55.8 | 13.2 | 72 | SW | ..... | ..... | 1 | ..... | 8 | ..... | E | 0 | 0 | Very cloudy | Bonvallet, Director. |
| Avignon, Normal School | 30.06 | 763.4 | 30.13 | 765.4 | 58.5 | 14.7 | 67 | NE | ..... | ..... | 1 | ..... | ..... | ..... | SW | 0.12 | 3. | ..... | M. Giraud, Director. |
| Bar-sur-Seine | 29.53 | 750.1 | 30.09 | 764.3 | 56.3 | 13.5 | 45 | S | ..... | ..... | 1 | ..... | 2k | ..... | W | 0 | 0 | Slightly cl'dy | C. Saillard, Director. |
| Beauvais, Normal School | 29.53 | 757.6 | 30.11 | 764.9 | 56.7 | 13.7 | 64 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | SSW | 0 | 0 | Covered | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.23 | 742.5 | 30.13 | 765.2 | 56.3 | 13.8 | 60 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.23 | 742.4 | 30.15 | 765.9 | 59.0 | 15 | 66 | W | ..... | ..... | 1 | ..... | 2k | ..... | W | 0 | 0 | Slightly cl'dy | M. Mariot, Director. |
| Bourges, Normal School | 29.53 | 750.0 | 30.08 | 764.0 | 57.2 | 14 | 71 | SE | ..... | ..... | 2 | ..... | 5 | SE | SE | 0 | 0 | Fair | A. Waquet, Director. |
| Brest, Naval Observatory | 29.72 | 755.0 | 29.97 | 761.2 | 58.6 | 14.8 | 65 | SW | ..... | ..... | 1 | ..... | 3 | ..... | SW | 0.020 | 0.50 | ..... | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.67 | 753.6 | 30.08 | 764.1 | 60.1 | 15.6 | 66 | E | ..... | ..... | 2 | ..... | 2 | E | E | 0 | 0 | Slightly cl'dy | September, Director. |
| Caen, Normal School | 30.02 | 762.4 | 30.09 | 764.3 | 57.4 | 14.1 | 63 | S | ..... | ..... | 1 | ..... | 8 | ..... | S | 0.01 | 1. | Very cloudy | M. Lair, Director. |
| Chartres, Normal School | 29.52 | 749.7 | 30.08 | 764.1 | 58.6 | 14.8 | 91 | E | ..... | ..... | 1 | ..... | 5 | ..... | E | 0 | 0 | Cloudy | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.83 | 757.7 | 30.15 | 765.8 | 56.3 | 13.5 | 66 | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Slightly cl'dy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.68 | 728.5 | 30.02 | 762.4 | 61.7 | 16.5 | 37 | S | ..... | ..... | 1 | ..... | 8 | ..... | WSW | 0.024 | 0.6 | ..... | Allnard, Director. |
| Commercy, Normal School | 29.24 | 742.8 | 30.12 | 765.0 | 49.5 | 9.7 | ..... | W | ..... | ..... | 3 | ..... | 8kn | ..... | W | .0 | 0 | Cloudy | Dr. Coulet, Director. |
| Commune de Grésque* | 29.09 | 736.6 | 30 14 | 765.6 | 56.3 | 13.5 | 58 | SW | ..... | ..... | 2 | ..... | 8 | SW | W | 0 | 0 | ¾ covered | M. Kina, Director. |
| Grenoble, Normal School | 29.31 | 744.5 | 30.08 | 763.9 | 59.7 | 15.4 | 47 | NW | ..... | ..... | 1 | ..... | 5k | ..... | ..... | 0 | 0 | Cloudy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.84 | 757.8 | 30.06 | 763.4 | 56.8 | 13.8 | 76 | NNE | ..... | ..... | 1 | ..... | 5 | ..... | SW | 0 | 0 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.77 | 756.1 | 30.08 | 764.0 | 54.7 | 12.6 | 59 | S | ..... | ..... | 3 | ..... | 8 | ..... | WSW | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.15 | 740.5 | 30.09 | 764.2 | 59.5 | 15.3 | 42 | NNE | ..... | ..... | 1 | ..... | 2 | ..... | NW | 0 | 0 | Slightly cl'dy | Baudry, Director. |
| Lorient, Naval Observatory | 29.98 | 761.0 | 30.08 | 764.1 | 55.8 | 13.2 | 75 | S | ..... | ..... | 1 | ..... | ..... | SW | S | 0 | 0 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Mirecourt, Normal School | 29.07 | 738.4 | 30.17 | 766.4 | 53.6 | 12 | 67 | WSW | ..... | ..... | 1 | ..... | k | ..... | ENE | 0 | 0 | ..... | M. Barbier, Director. |
| Nimes, Normal School | 29 91 | 759.8 | 30.11 | 764.7 | 61.2 | 16 2 | 56 | S | ..... | ..... | 1 | ..... | 8 | ..... | S | 0.069 | 1.75 | Very cloudy | Boyer, Director. |
| Privas, Normal School | 29.00 | 736.6 | 30.06 | 763.5 | 59.0 | 15 | 58 | S | ..... | ..... | 1 | c | ..... | S | S | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 25.17 | 639.4 | ..... | ..... | 37.6 | 3.1 | 89 | ESE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.035 | 0.9 | Very cloudy | Allnard, Director. |
| Rochefort, Naval Obs'y | 30.03 | 762.7 | 30.06 | 763.5 | 60.1 | 15.6 | 67 | E | ..... | ..... | 1 | ..... | 5 | E | E | 0 | 0 | ½ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.99 | 761.8 | 30.08 | 764.0 | 55.8 | 13.2 | 67 | W | ..... | ..... | 1 | ..... | 8 | ..... | S | 0.079 | 2.0 | Very cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 30.03 | 762.8 | 30.06 | 763.6 | 55.0 | 12.8 | 66 | SSW. | ..... | ..... | 3 | ..... | 1 | SSE | SSE | 0.100 | 2.54 | Solar halo | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.93 | 760.2 | 30.10 | 764.4 | 58.6 | 14.8 | 41 | SW | ..... | ..... | 1 | ..... | ..... | W | SE | 0 | 0 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.83 | 732.3 | 29.91 | 759.7 | 53.6 | 12 | 65 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Huguet, Director. |
| Versailles Observatory | 29.60 | 751.8 | 30.09 | 764.3 | 57.4 | 14.1 | ..... | SW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Fair | Dr. A. Rérieny, Director |
| Villefranche-sur-Saone, N.S. | 29.43 | 747.5 | 30.19 | 766.7 | 53.6 | 12 | 70 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Nicot, Director. |
| Sub-Stations. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.94 | 760.6 | 29.97 | 761.3 | 75.2 | 24 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.08 | 2. | ..... | L'Abbé Marel 6si. |
| Lyons Obs'y, (Park Station) | 29.48 | 748.7 | 30.09 | 764.3 | 58.5 | 14.7 | 64 | SSW | ..... | ..... | 1 | ..... | 1 | ..... | SW | 0.006 | 0.15 | Clear | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 24.83 | 630.7 | 30.15 | 765.7 | 44.6 | 7.0 | 69 | SSE | 13.0 | 5.8 | ..... | ..... | 3 | ..... | S | 0.217 | 5.5 | ..... | M. Cave. |
| Nice | ..... | ..... | 30.11 | 764.7 | 61.2 | 16.2 | 58 | ESE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.82 | 757.3 | ..... | ..... | 55.4 | 13.0 | 45 | Calm | ..... | ..... | 0 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Marié Davy, Director. |
| Perpignan | 29.97 | 761.3 | 30.08 | 764.0 | 57.7 | 14.3 | 74 | SE | 18.6 | 8.3 | ..... | ..... | 1 | ..... | ..... | 0 102 | 2.6 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.48 | 570.1 | ..... | ..... | 30.4 | — 0.9 | ..... | E | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0 | 0 | Fair | Gen'l de Nansouty. |
| Toulouse, Observatory | 29.34 | 745.1 | 30.06 | 763.5 | 58.6 | 14.8 | 70 | SSE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | M. Mercadier Juller. |
| Tours | 29.87 | 758.8 | 30.07 | 763.8 | 58.6 | 14.8 | 52 | W | ..... | ..... | 1 | ..... | 3 | ..... | WNW | 0 | 0 | ..... | Cousin-Marquete. |
| Zi-Ka-Wei, (near Shanghai) | 30.24 | 768.2 | 30.27 | 768.2 | 43.3 | 6.3 | 53 | N | 7.6 | 3.4 | ..... | ..... | 10 | ..... | ..... | 0.457 | 11.6 | Covered | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grésque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-12. | Clouds. Amount. Up'er 0-10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.17 | 740.8 | 30.01 | 762.2 | 47.5 | 8.6 | 63 | W | | | 4 | | 4 | W | | 0.020 | 0.5 | | Prof. Dr. Hoh. |
| Berlin | 29.71 | 754.7 | 29.89 | 759.2 | 38.3 | 3.5 | 84 | NW | | | 4 | | 10 | | | 0.666 | 16.9 | Rain & snow | Prof. Arndt. |
| Breslau | 29.37 | 746.1 | 29.90 | 759.5 | 42.4 | 5.8 | 88 | W | | | 2 | | 10 | | | 0.177 | 4.51 | Rainy | Royal University Obs'y |
| Carlsruhe | 29.64 | 752.8 | 30.08 | 764.0 | 40.3 | 4.6 | 63 | SW | | | 2 | | 10 | NW | | 0 | 0 | | Albert Sens. |
| Cassel | 29.44 | 747.8 | 30.05 | 763.3 | 34.7 | 1.5 | 77 | NW | | | 6 | | 10 | NW | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.99 | 761.8 | 30.15 | 765.9 | 36.5 | 2.5 | 74 | N | | | 3 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.72 | 754.9 | 30.10 | 764.4 | 50.9 | 10.5 | | NW | | | 2 | | 5 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.66 | 728.0 | 30.12 | 765.0 | 49.3 | 9.6 | 76 | S | | | 3 | | 9 | SW | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 30.01 | 762.3 | 30.09 | 764.2 | 32.7 | 0.4 | 73 | NE | | | 5 | | 8k | | | 0.252 | 6.4 | | Captain F. Hegemann. |
| Kiel | 30.11 | 764.7 | 30.12 | 765.1 | 31.1 | — 0.1 | 81 | NE | | | 5 | | 0 | | | 0.184 | 4.67 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.95 | 760.6 | 30.03 | 762.8 | 29.3 | — 1.5 | 71 | E | | | 2 | | 0 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 29.95 | 760.7 | 34.5 | 1.4 | | Calm | | | 0 | | 1 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.55 | 750.5 | 29.98 | 761.5 | 38.5 | 3.6 | 75 | W | | | 4 | | 9 | WNW | | 0.130 | 3.3 | | Prof. Bruhns, Privy Counsellor. |
| Memel, Naval School | 29.96 | 761.0 | 30.01 | 762.2 | 33.6 | 0.9 | 77 | SW | | | 1 | | 10s | | | | | | Skalweit. |
| Neufahrwasser | 30.01 | 762.3 | 30.03 | 762.7 | 30.6 | — 0.8 | 73 | NE | | | 2 | | 1 | | | 0.020 | 0.5 | | A. Lothes. |
| Posen | 29.67 | 753.6 | 29.97 | 761.3 | 32.0 | 0.0 | 88 | NE | | | 4 | | 10 | | | 0.173 | 4.4 | Snowing | Dr. Magener. |
| Strassburg (in Alsace) | 29.56 | 750.9 | 30.11 | 764.9 | 55.9 | 13.3 | 52 | Calm | | | 0 | | 10 | W | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 29.11 | 739.5 | 30.06 | 763.5 | 54.5 | 12.5 | 44 | W | | | 3 | | 9 | W | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | | | | | | | | | | | | | | | | | | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.53 | 724.7 | 30.06 | 763.6 | 46.0 | 7.8 | 76 | WNW | 13 | 6 | | | 10 | | W | | | | Dr. Van Bebber. |
| Wustrow, Naval School | 30.02 | 762.5 | 30.04 | 763.1 | 31.3 | — 0.4 | 94 | NE | | | 4 | | 3s | | | 0 | 0 | Light rain | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.76 | 756.0 | 30.16 | 766.0 | 57.4 | 14.1 | | SW | | | 1.5 | | | | | | | ⅛ Clear | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.90 | 759.6 | 29.96 | 760.9 | 75.2 | 24.0 | 48 | NW | 11 | 4.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.40 | 746.7 | 29.87 | 758.7 | 83.8 | 28.8 | 24 | W | 9.4 | 4.2 | | | 1 | WSW | | 0 | 0 | D. clouds | |
| Bombay | 29.82 | 757.5 | 29.86 | 758.5 | 81.5 | 27.5 | 56 | NNW | 31 | 13.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.17 | 740.8 | 29.93 | 760.2 | 69.7 | 20.9 | 42 | NW | 2.1 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.31 | 693.7 | 29.78 | 756.4 | 89.9 | 33.2 | 21 | Calm | 0 | 0 | | | 3 | | | 0 | 0 | | |
| Roorkee | 28.96 | 735.6 | 29.89 | 759.1 | 66.2 | 19.0 | 43 | NW | 5.4 | 2.4 | | | 7 | | | 0 | 0 | Gloomy | |
| Agra | 29.36 | 745.7 | 29.93 | 760.3 | 74.7 | 23.7 | 30 | W | | | | | | | | 0 | 0 | | |
| Nagpur | 28.78 | 731.0 | 29.81 | 757.1 | 86.6 | 30.3 | 22 | NW | 5.5 | 2.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.46 | 748.4 | 29.85 | 758.1 | 74.8 | 23.8 | 50 | NW | 3.5 | 1.6 | | | 4 | | NE | 0 | 0 | D. clouds | |
| Allahabad | 29.54 | 750.2 | 29.85 | 758.1 | 80.0 | 26.7 | 31 | NW | 6.5 | 2.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.58 | 751.4 | 29.76 | 756.0 | 86.2 | 30.1 | 23 | W | 2.6 | 1.2 | | | 4 | W | W | 0 | 0 | D. clouds | |
| Hazaribagh | 27.77 | 705.4 | 29.77 | 756.2 | 80.0 | 26.7 | 21 | NNW | 6.4 | 2.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.67 | 753.5 | 29.75 | 755.5 | 91.6 | 33.1 | 32 | SW | 3.4 | 1.5 | | | | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.72 | 754.8 | 29.74 | 755.3 | 84.0 | 28.9 | 40 | NW | 1.5 | 0.7 | | | 0 | | | 0 | 0 | D. clouds | |
| Goalpara | 29.26 | 743.1 | 29.64 | 752.8 | 85.4 | 29.7 | 17 | W | 5.8 | 2.6 | | | 1 | W | | 0 | 0 | Misty | |
| Chittagong | 29.72 | 755.0 | 29.82 | 757.3 | 81.1 | 27.3 | 85 | SSE | 8.0 | 3.6 | | | 0 | | | 0 | 0 | D. clouds | |
| Sibsagar | 29.30 | 744.2 | 29.63 | 752.7 | 75.6 | 24.2 | 70 | SW | 2.1 | 0.9 | | | 5 | | SW | 0 | 0 | Blue sky | |
| Jubbulpore | 28.49 | 723.7 | 29.86 | 758.4 | 80.8 | 27.1 | 24 | N | 5.8 | 2.6 | | | 0 | | | 0 | 0 | | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instru'm'tal error and temperature. Inches. | Barometer. Corrected for instru'm'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.72 | 754.8 | 30.13 | 765.4 | 52.5 | 11.4 | 51 | SW | 2.5 | 1.1 | ..... | ..... | 4 | .. ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.60 | 751.8 | 30.13 | 765.2 | 54.9 | 12.7 | 48 | SW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 30.03 | 762.8 | 30.14 | 765 6 | 52.2 | 11.2 | 65 | S | 2.5 | 1.1 | ..... | ..... | 5 | SW | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 29.20 | 741.6 | 30.11 | 764.9 | 52.5 | 11.4 | 45 | SSE | 1.8 | 0.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.94 | 760.5 | 30.13 | 765.4 | 55.4 | 13.0 | 64 | Calm | 0 | 0 | ..... | ..... | 10 | SW | ..... | 0.004 | 0.1 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 29.84 | 758.0 | 30.13 | 765.4 | 55.4 | 13.0 | 64 | WNW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 28.17 | 715.6 | 30.11 | 764.8 | 49.1 | 9.5 | 45 | N | 6.9 | 3.1 | ..... | ..... | 9 | SW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 30.09 | 764.3 | 30.14 | 765.6 | 51.1 | 10.6 | 80 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.004 | 0.1 | ..... | Cav. F. Meucci |
| Leghorn | 29.86 | 758.5 | 30.12 | 765.1 | 59.9 | 15.5 | 72 | SE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.079 | 2.0 | ..... | Prof. P. Monte. |
| Rome | 30.01 | 762.2 | 30.09 | 764.8 | 57.9 | 14.4 | 77 | SW | 4.9 | 2.2 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.96 | 761.0 | 30.14 | 765.5 | 62.2 | 16.8 | 57 | NE | 3.8 | 1.7 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.93 | 760.1 | 30.18 | 766.0 | 58.1 | 14.6 | 43 | NW | 1.8 | 0.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.23 | 742.5 | 30.13 | 765.2 | 59.4 | 15.2 | 70 | SE | ..... | ..... | 2 | ..... | 10 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.87 | 758.6 | 30.06 | 763.5 | 57.2 | 14.0 | 89 | NE | 5.6 | 2.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.86 | 758.5 | 30.12 | 765.0 | 57.6 | 14.2 | 72 | ENE | 3.8 | 1.7 | ..... | ..... | 9 | E | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.59 | 751.6 | 30.15 | 765.7 | 61.2 | 16.2 | 58 | SW | 3.1 | 1.4 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.08 | 764.0 | 30.10 | 764.5 | 43.1 | 6.2 | 82 | N | 1.6 | 0.7 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.88 | 758.9 | 30.09 | 764.3 | 46.0 | 7.8 | 74 | NNE | 5.1 | 2.3 | ..... | ..... | 10n | ..... | ..... | 0.020 | 0.51 | Light rain | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 30.00 | 762.0 | 30.07 | 763.8 | 39.9 | 4.4 | 85 | SSE | 3.3 | 1.5 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | SW | ..... | ..... | 1 | 4 | .. ..... | SW | ..... | 0 | 0 | ½ clouded | P. Ceballos. |
| Guadalajara | 25.06 | 636.6 | 30.15 | 765 7 | 46.0 | 7.8 | 44 | NW | ..... | ..... | 1 | 4c | 0 | SW | ..... | 0 | 0 | ..... | Prof. L. Perez. |
| Leon | 24.43 | 620.5 | 30.12 | 765.1 | 57.0 | 13.9 | 64 | Calm | 0 | 0 | .. ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.07 | 586.0 | 30.15 | 765.9 | 49.5 | 9.7 | 58 | NNE | ..... | ..... | 1 | 9ck | 0 | SW | ..... | 0 | 0 | Clear | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 55.4 | 13.0 | 60 | SE | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. V. de Leon, M. E. |
| Tlacotalpam | 29.76 | 756.0 | 29.78 | 756.3 | 73.8 | 23.2 | 87 | W | ..... | ..... | 1 | 8 | 0 | W | ..... | 0 | 0 | Misty | M. M. Cházaro. |
| San Luis Potosi | 24.17 | 613.1 | 30.25 | 768.3 | 59.0 | 15.0 | 38 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.41 | 594.5 | 30.17 | 766.3 | 48.2 | 9.0 | 54 | N | 1.3 | 0.6 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.37 | 720.6 | 30.03 | 762.8 | 72.7 | 22.6 | 62 | NE | ..... | ..... | 1 | 0 | 1 | ..... | W | 0 | 0 | Clear | R. Randa, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,893 m., or 6,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,201m., or 7,220.9 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 682 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.19 | 766.7 | 30.19 | 766.7 | 41.0 | 5.0 | ..... | ENE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 30.12 | 765.1 | 30.18 | 766.5 | 35.8 | 2.1 | ..... | NE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0.091 | 2.3 | ..... | |
| Helder | 30.19 | 766.7 | 30.19 | 766.7 | 35.4 | 1.9 | ..... | NNE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 30.18 | 766.6 | 30.18 | 766.0 | 37.0 | 2.8 | 72 | ENE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.16 | 766.0 | 30.21 | 767.2 | 36.5 | 2.5 | 65 | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Millimeters. | Reduced to sea-level. Inches. | Millimeters. | Temperature of the Air. Fahrenheit. | Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Velocity. Miles per hour. | Meters per second. | Force. 0—10. | Clouds. Amount. Up'er 0—10. | Low'r 0—10. | Direction. Upper. From— | Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Millimeters. | Weather. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.01 | 762.3 | 30.07 | 763.7 | 32.0 | 0.0 | 63 | SE | 6.7 | 3.0 | ..... | ..... | 1 | ..... | ..... | 0.197 | 5.0 | ..... | |
| Brōno | 29.52 | 749.9 | 29.56 | 750.9 | 33.1 | 0.6 | 61 | NNW | 9 | 4 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.75 | 755.7 | 29.91 | 759.6 | 33.1 | 0.6 | 49 | SW | 2 | 1 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.31 | 744.5 | 29.36 | 745.6 | 26.6 | −3.0 | 78 | SW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | 0.177 | 4.5 | Light snow.. | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| STATIONS. | Bar. corr. Inches. | Millimeters. | Reduced Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | Wind from— | Miles per hour. | Meters per second. | Force. | Clouds Up'er. | Low'r. | Dir. Upper. | Lower. | Rain Inches. | Millimeters. | Weather. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.00 | 761.9 | 30.19 | 766.9 | 50.4 | 10.2 | 84 | WNW | 8.1 | 3.6 | ..... | ..... | 7 | ..... | ..... | 0.315 | 8.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.89 | 733.8 | 29.92 | 760.0 | 59.7 | 15.4 | 61 | ESE | 13.7 | 6.1 | ..... | ..... | 7 | SE | ..... | 0 | 0 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 29.71 | 754.6 | 29.80 | 756.8 | 61.0 | 16.1 | 64 | W | 8.1 | 3.6 | ..... | ..... | 9 | ..... | ..... | 0.087 | 2.2 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.52 | 749.8 | 29.88 | 759.0 | 56.8 | 13.8 | 68 | SSE | 8.7 | 3.9 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.10 | 764.4 | 30.17 | 766.2 | 58.3 | 14.6 | 63 | N | 16.1 | 7.2 | ..... | ..... | 4 | ..... | ..... | 0.244 | 6.2 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| PORTUGUESE NAVAL SERIES. VESSELS. | Bar. corr. Inches. | Millimeters. | Reduced Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | Wind from— | Miles per hour. | Meters per second. | Force. | Clouds Up'er. | Low'r. | Dir. Upper. | Lower. | Sea or swell. Height scale | Direction from | Weather. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | ..... | ..... | 29.90 | 759.5 | 85.6 | 29.8 | ..... | SW | ..... | ..... | 2 | ..... | 2 | ..... | SW | 2 | SW | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da SilvaCosta. Porto de S. Jose de Bissao, Senegambia | ..... | ..... | 29.96 | 761.0 | 81.5 | 27.5 | ..... | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 1 | NE | Blue sky | A. Ferreira, 2d Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | 29.80 | 756.8 | 87.3 | 30.7 | ..... | NNW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | [illegible] Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 30.06 | 763.5 | 66.2 | 19.0 | ..... | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 1 | ..... | Blue sky | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| STATIONS. | Bar. corr. Inches. | Millimeters. | Reduced Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | Wind from— | Miles per hour. | Meters per second. | Force. | Clouds Up'er. | Low'r. | Dir. Upper. | Lower. | Rain Inches. | Millimeters. | Weather. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.49 | 749.0 | 29.93 | 760.2 | 34.8 | 1.3 | 75 | ENE | 7 | 3 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.56 | 750.9 | 30.00 | 762.1 | 27.1 | −2.7 | 65 | NW | 4 | 2 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.67 | 753.5 | 29.92 | 760.0 | 23.4 | −4.8 | 76 | W | 7 | 3 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.80 | 757.0 | 29.82 | 757.4 | 23.4 | −4.8 | 74 | SW | 11 | 5 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.25 | 742.9 | 29.91 | 759.8 | 30.0 | −1.1 | 90 | SE | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing.... | Physical Cabinet. |
| Nikolaiev | 29.89 | 759.2 | 29.96 | 761.0 | 49.8 | 9.9 | 53 | SW | 9 | 4 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.06 | 763.5 | 30.08 | 764.0 | 45.5 | 7.5 | 66 | S | 9 | 4 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.41 | 746.0 | 29.99 | 761.8 | 18.0 | −7.8 | 54 | SSE | 7 | 3 | ..... | ..... | 2ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.74 | 755.5 | 29.96 | 760.9 | 32.0 | 0.0 | 94 | NE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 29.74 | 755.4 | 29.76 | 755.9 | 19.0 | −7.2 | 87 | SSW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Ssellwerstow. |
| Tiflis | 28.90 | 734.1 | 30.36 | 771.2 | 46.6 | 8.1 | 24 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.32 | 770.2 | 30.24 | 768.1 | 39.9 | 4.4 | 42 | SW | 11 | 5 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.53 | 750.0 | 30.03 | 762.8 | 25.9 | −3.4 | 63 | S | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Cand. Fatjanow. |
| Kasan | 29.61 | 752.2 | 29.90 | 759.4 | 20.8 | −6.2 | 73 | SE | 4 | 2 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 28.98 | 736.0 | 30.00 | 761.9 | 21.2 | −6.0 | 59 | NNE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Meteorological Obs. |
| Nukuss | 30.15 | 765.9 | 30.40 | 772.1 | 41.0 | 5.0 | 29 | NW | 16 | 7 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.52 | 724.3 | 30.20 | 767.0 | 65.7 | 18.7 | 30 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | ..... | Blank | Blank | ..... | Teich, A. M. |
| Barnaul | 29.66 | 753.3 | 30.18 | 766.5 | 34.2 | 1.2 | 62 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.12 | 765.1 | 30.43 | 772.9 | 30.6 | −0.8 | 60 | E | 2 | 1 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 30.17 | 766.4 | 30.32 | 770.0 | 39.4 | 4.1 | 55 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455 ? m., or 1,492.7 ? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165.2 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| STATIONS. | Bar. corr. Inches. | Millimeters. | Reduced Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | Wind from— | Miles per hour. | Meters per second. | Force. | Clouds Up'er. | Low'r. | Dir. Upper. | Lower. | Rain Inches. | Millimeters. | Weather. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.96 | 761.0 | 30.07 | 763.7 | 56.7 | 13.7 | 62 | E | 2.9 | 1.28 | ..... | ..... | 1ks | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 29.91 | 759.6 | 29.96 | 761.0 | 68.2 | 20.1 | 52 | SE | 2.3 | 1.02 | ..... | 3 | 6 | S | ..... | 0 | 0 | Almost cov'd | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.02 | 686.2 | ..... | ..... | 50.9 | 10.5 | 86 | SE | 4.2 | 1.88 | ..... | 0 | 7 | ..... | ..... | 0.079 | 2.0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Oservatory | 27.73 | 704.3 | ..... | ..... | 56.1 | 13.4 | 57 | SE | 8.9 | 4.00 | ..... | 0 | 9 | ..... | ..... | Inap. | Inap. | Almost cov'd | The Staff. |
| Murcia, Met. Obs'y | 29.85 | 758.3 | 29.97 | 761.1 | 66.4 | 19.1 | 64 | NE | 3.6 | 1.61 | ..... | 3 | 6 | ESE | ..... | 0 | 0 | Almost cov'd | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.98 | 736.1 | 29.87 | 758.6 | 59.2 | 15.1 | 45 | SE | 2.5 | 1.1 | ..... | 0 | 9 | ..... | ..... | 0 | 0 | Almost cov'd | R. Gil Villanueva, Dir. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.93 | 760.1 | 29.99 | 761.8 | 69.8 | 21.0 | 79 | SE | 1.3 | 0.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.79 | 756.7 | 29.84 | 758.0 | 82.7 | 28.2 | 65 | SSE | 5.6 | 2.5 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.79 | 756.7 | 29.89 | 759.2 | 63.7 | 17.6 | 58 | ESE | 15.5 | 6.9 | ..... | 0 | 5 | ..... | SE | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I. | 29.93 | 760.1 | 30.02 | 762.4 | 76.3 | 24.6 | 87 | SW? | 0 | 0 | ..... | 0 | 1k | ..... | SW | 0 | 0 | Clear. | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upper. 0—10. | Clouds. Amount. Lower. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.54 | 750.2 | 29.58 | 751.2 | 14.0 | —10.0 | ..... | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.50 | 749.4 | 29.56 | 750.7 | 31.6 | — 0.2 | 89 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.70 | 754.4 | 29.75 | 755.7 | 34.5 | 1.4 | 74 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.69 | 754.0 | 29.86 | 758.5 | 34.3 | 1.3 | 86 | SW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.85 | 758.3 | 29.91 | 759.8 | 28.4 | — 2.2 | 80 | W | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.75 | 755.6 | 29.82 | 757.5 | 32.0 | 0.0 | 86 | SW | 10.3 | 4.6 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Nils Ekholm. |

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.67 | 728.1 | 30.11 | 764.8 | 47.8 | 8.8 | 75 | N | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | Cloudy | The Observatory. |
| Zurich | 28.47 | 723.2 | 30.12 | 765.0 | 51.4 | 10 8 | 69 | E | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | Cloudy | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—At Geneva the corresponding departures from the normal values are: Barometer, +3.5 mm.; Thermometer, +0.9 Cent.; Relative Humidity, +14 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.14 | 765.6 | 51.8 | 11.0 | 60 | S | 7 | 3.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.39 | 772.0 | 73.4 | 23.0 | ..... | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 30.15 | 765.7 | 56.7 | 13.7 | ..... | W | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.98 | 761.5 | 30.10 | 764.5 | 64.0 | 17.8 | 59 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. C.V. A. Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.22 | 767.6 | 30.29 | 769.4 | 7.4 | —13.7 | 77 | Calm | 0 | 0 | ..... | 0 | 4n | ..... | ..... | 0 | 0 | Fair | Hon. J. Ferguson. |
| Brockville, Ontario | 29.69 | 754.1 | 30.02 | 762.5 | 13 | —10.6 | ..... | NE | 5 | 2.2 | ..... | ..... | 10n | ..... | NE | 0.08 | 2.0 | Light snow | W. R. Bigg. |
| *Chatham, N B | 30.25 | 768.8 | 30.32 | 770.1 | 13 | —10.6 | 87 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 30.28 | 769 1 | 30.32 | 770.1 | 21 | — 6.1 | 66 | NW | 3 | 1.3 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | H. J. Cundall, C. |
| Cornwall, Ontario | 29.76 | 755.9 | 29.97 | 761.2 | 15.7 | — 9.1 | 95 | N | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0.03 | 0.8 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 30.08 | 764.0 | 30.12 | 765.0 | 37.1 | 2.8 | 91 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. Bevis. |
| *Father Point, Quebec | 30.16 | 766.1 | 30.18 | 766.6 | 9 | —12.8 | 87 | Calm | 0 | 0 | ..... | 2cs | 5ks | Calm | Calm | 0.16 | 2.5 | Fair | J. McWilliams |
| Fredericton, N. B | 30.25 | 768.8 | 30.32 | 770.1 | 17.1 | — 8.3 | 87 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | ..... | 0.80 | 20.3 | Overcast | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.27 | 743.4 | 30.23 | 767.8 | —18 | —27.8 | 100 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Stewart. |
| Granton, Ontario | 28.78 | 731.0 | 29.97 | 761.2 | 17 | — 8 3 | ..... | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | Inap. | Inap. | Overcast | James Grant |
| *Halifax, N. S | 30.16 | 766.1 | 30.31 | 769.9 | 26 | — 3.3 | 91 | E | 1 | 0.4 | ..... | 1 | 10cs | 0 | N | 0.07 | 1.8 | Snowing | Geo. Dickson, M. A. |
| Hamilton, Ontario | 29.58 | 751.3 | 29.98 | 761.5 | 19.7 | — 6.8 | 89 | N | ..... | ..... | ..... | ..... | 10n | ..... | S | 0.020 | 0.51 | Cloudy | F. Allison, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Geo. Weedon. |
| *Kingston, Ontario | 29.61 | 752 1 | 29.97 | 761.2 | 15 | — 9.4 | 91 | N | 23 | 10.3 | ..... | ..... | 10n | ..... | N | 0.06 | 1.5 | Light snow | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.33 | 770.4 | 30.37 | 771.4 | 28.0 | — 2.2 | 89 | W | 4 | 1.8 | ..... | 8k | 0 | W | ..... | 0.37 | 9.4 | Cloudy | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 29.83 | 757.7 | 30.04 | 763 0 | 12 | —11.1 | 90 | N | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Light snow | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.27 | 743.4 | 30.04 | 763.0 | 2 | —16.7 | 75 | NE | 5 | 2.2 | ... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | 29.08 | 738.6 | 29.88 | 758.9 | 13.7 | —10.2 | 73 | NW | ..... | ..... | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.10 | 741.4 | 29.93 | 760.2 | 19 | — 7.2 | 84 | N | 9 | 4.0 | ..... | ..... | 10n | ..... | NW | 0.10 | 2.5 | Light snow | H. Morgan. |
| Port Hastings, N. S | 30.26 | 768.6 | 30.31 | 769.9 | 27.7 | — 2.4 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0.30 | 7.6 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.28 | 743.7 | 29.97 | 761.2 | 20 | — 6.7 | 88 | NW | 5 | 2.2 | ..... | ..... | 10n | ..... | SW | 0.06 | 1.5 | Light snow | M. Payne. |
| *Quebec, Quebec | 29.53 | 757.7 | 30.18 | 766.6 | 5 | —15.0 | 75 | NE | ..... | ..... | 1 | ..... | 10n | ..... | NE | 0.01 | 0.3 | Cloudy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.56 | 751.3 | 30.11 | 764.8 | —12 | —24.4 | 70 | NW | 4 | 1.8 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 30.19 | 766.8 | 30.25 | 768.3 | 25 | — 3.9 | 57 | E | ..... | ..... | 3 | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| St. John, N. B | 30.13 | 765.3 | 30.30 | 769.6 | 23 | — 5.0 | 100 | W | 6 | 2.7 | ..... | ..... | 10ks | ..... | ..... | 0.71 | 18.0 | Overcast | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.22 | 742.2 | 29.89 | 761.7 | 12 | —11.1 | 92 | SE | 7 | 3.1 | ..... | ..... | 10ks | ..... | ..... | 0.02 | 0.5 | Cloudy | K. Stewart. |
| Stayner, Ontario | 29.13 | 739.9 | 29.97 | 761 2 | 10 | —12.2 | 66 | Calm | 0 | 0 | ..... | 8ck | 0 | W | ..... | 0 | 0 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.58 | 725.9 | 29.96 | 761.0 | 14.4 | — 9.8 | 91 | N | 4.0 | 1.8 | ..... | 10s | ..... | ..... | ..... | 0 | 0 | Overcast | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.31 | 769.9 | 30.36 | 771.1 | 27 | — 2.8 | 67 | NW | 8 | 3.6 | ..... | 10s | ..... | SW | ..... | 0.01 | 0.3 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.55 | 750.6 | 29.96 | 761.0 | 17 | — 8.3 | 92 | N | 15 | 6.7 | ..... | 10n | ..... | Calm | 0.06 | 1.5 | Light snow | Magnetic Observatory. |
| Windsor, N. S | 30.22 | 767.6 | 30.32 | 770.1 | 25.0 | — 3.9 | 87 | ..... | ..... | ..... | ..... | 10n | ..... | ..... | ..... | 0.03 | 0.8 | Overcast | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 26.5 | — 3.1 | 100 | S | ..... | ..... | ..... | 5k | 5s | ..... | ..... | 0 | 0 | Fair | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUD. Amount. Up'er 0—10. | CLOUD. Amount. Low'r 0—10. | CLOUD. Direction. Upper. From— | CLOUD. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.70 | 754.4 | 29.94 | 760.5 | 23 | — 5.0 | 93 | N | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.34 | 8.6 | Heavy snow | |
| Alpena, Michigan | 29.32 | 744.7 | 30.03 | 762.8 | 5 | —15.0 | 75 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Atlanta, Georgia | 28.72 | 729.5 | 29.85 | 758.2 | 55 | 12.8 | 80 | S | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.15 | 3.8 | Light rain | |
| Atlantic City, New Jersey | 29.78 | 756.4 | 29.80 | 756.9 | 45 | 7.2 | 84 | S | 19 | 8.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Augusta, Georgia | 29.76 | 755 9 | 29.94 | 760.5 | 56 | 13.2 | 63 | S | 2 | 0.9 | ..... | 5cs | Haze | S | Calm | 0 | 0 | Fair | |
| Baltimore, Maryland | 29.71 | 754.6 | 29.76 | 755.9 | 45 | 7.2 | 92 | E | 1 | 0.4 | ..... | 8k | 8s;fog | W | Calm | 0.03 | 0.8 | Foggy | |
| Barnegat, New Jersey | 29.76 | 755.9 | 29.79 | 756.7 | 44 | 6.7 | 92 | S | 15 | 6.7 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Bismarck, Dakota | 28.33 | 719.6 | 30.19 | 766.8 | — 9 | —19.4 | 100 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boerne, Texas | 28.47 | 723.1 | 29.81 | 757.2 | 42 | 5.6 | 66 | N | 24 | 10.7 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.20 | 690.9 | 30.16 | 766.1 | 42 | 5.6 | 66 | NE | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boston, Massachusetts | 29.90 | 759.4 | 30.06 | 763.5 | 30 | — 1.1 | 100 | E | 18 | 8.0 | ..... | ..... | 10n | ..... | Calm | 0.18 | 4.6 | Heavy snow | |
| Brackettville, Texas | 28.90 | 734.0 | 29.96 | 761.0 | 43 | 6.1 | 67 | N | 22 | 9.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 29.13 | 739.9 | 30.27 | 768.8 | — 3 | —19.4 | 68 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Brownsville, Texas | 29.74 | 755.4 | 29.79 | 756.7 | 72 | 22.2 | 90 | SE | 2 | 0.9 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.13 | 739.9 | 29.86 | 758.4 | 21.5 | — 5.8 | 93 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.14 | 3.6 | Light snow | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 44 | 6.7 | 61 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.71 | 754.6 | 30.02 | 762.5 | 21 | — 6.1 | 86 | E | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light snow | |
| Cairo, Illinois | 29.82 | 757.4 | 30.25 | 768 3 | 22 | — 5.6 | 86 | NW | 14 | 6 3 | ..... | ..... | 10s | ..... | NW | 0.66 | 16.8 | Cloudy | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.16 | 639.0 | 29.96 | 761.0 | 64 | 12.2 | 24 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 38 | 3.3 | 38 | SE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.47 | 697.7 | 30.04 | 763.0 | 47 | 8.3 | 92 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Cape Hatteras, N. Carolina | 30.04 | 763 0 | 30.05 | 763.3 | 56 | 13.3 | 87 | S | 13 | 5.8 | ..... | Haze | 2s | ..... | S | 0 | 0 | Hazy | |
| Cape Henry, Virginia | 29.98 | 761.5 | 30.00 | 762.0 | 60 | 15.6 | 71 | S | 25 | 11.2 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Hazy | |
| Cape Lookout, N. Carolina | 30.03 | 762.8 | 30.05 | 763.3 | 56 | 13.3 | 87 | SW | 12 | 5.4 | ..... | 10k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 29.76 | 755.9 | 29.79 | 756.7 | 46 | 7.8 | 84 | S | 30 | 13.4 | ..... | 10cs | Haze | SW | ..... | 0.01 | 0.3 | Cloudy | |
| Castroville, Texas | 29.14 | 740.1 | 29.86 | 758.4 | 47 | 8.3 | 62 | N | 9 | 4.0 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 29.93 | 760.2 | 29.99 | 761.7 | 60 | 15.6 | 82 | SW | 4 | 1.8 | ..... | 7ck | 0 | SW | ..... | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 28.97 | 608.8 | 29.91 | 759.7 | 14 | —10.0 | 82 | NE | 4 | 1.8 | ..... | 0 | 8s | ..... | NE | 0.11 | 2.8 | Cloudy | |
| Chicago, Illinois | 29.83 | 745.0 | 30.07 | 763.8 | 17 | — 8.3 | 83 | NW | 5 | 2.2 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Cincinnati, Ohio | 29.35 | 745.5 | 30.04 | 763 0 | 26 | — 3.3 | 75 | NW | 10 | 4.5 | ..... | ..... | 9n | ..... | NW | 0.61 | 15.5 | Light snow | |
| Cleveland, Ohio | 29.17 | 740.9 | 29.93 | 760 2 | 23 | — 5.0 | 86 | N | 16 | 7.2 | ..... | ..... | 10n | ..... | Calm | 0.12 | 3.0 | Light snow | |
| Coleman City, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Columbus, Ohio | 29.08 | 738.6 | 29.96 | 761.0 | 26 | — 3.3 | 88 | NW | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.11 | 2.8 | Light snow | |
| Corpus Christi, Texas | 28.18 | 715.8 | 29.95 | 760.7 | 28 | — 2.2 | 44 | NW | 10 | 4.5 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Corsicana, Texas | 29.59 | 751.6 | 30.09 | 764.3 | 34 | 1.1 | 70 | N | 17 | 7.6 | ..... | ..... | 10s | ..... | N | 0.06 | 1.5 | Cloudy | |
| Davenport, Iowa | 29.50 | 749.3 | 30.20 | 767.1 | 13 | —10.6 | 81 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0 3 | Clear | |
| Deadwood, Dakota | 25.40 | 645.2 | ..... | ..... | — 5 | —20.6 | 63 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Decatur, Texas | 28.97 | 735.8 | 30.23 | 767.8 | 26 | — 3.3 | 75 | N | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.33 | 745.0 | 30.18 | 766.6 | 27 | — 2.8 | 76 | N | 14 | 6.3 | ..... | ..... | 10s | ..... | N | Inap. | Inap. | Cloudy | |
| Denver, Colorado | 24.76 | 628.9 | 29.08 | 761.5 | 19 | — 7.2 | 100 | NW | 8 | 3.6 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Des Moines, Iowa | 29.34 | 745.2 | 30.31 | 769.9 | 8 | —13.3 | 78 | NW | 3 | 1.3 | ..... | 0 | Sm'e | ..... | Calm | 0.15 | 3.8 | Clear | |
| Detroit, Michigan | 29.25 | 742.9 | 29.96 | 761.0 | 21 | — 6.1 | 100 | N | 4 | 1.8 | ..... | 5c | 8s | NW | Calm | 0.01 | 0.3 | Cloudy | |
| Dodge City, Kansas | 27.60 | 701.0 | 30.09 | 764.3 | 16 | — 8.9 | 83 | NE | 6 | 2 7 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.43 | 747.5 | 30.20 | 767.1 | 11 | —11.7 | 60 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Duluth, Minnesota | 29.40 | 746.7 | 30.16 | 766.1 | 0 | —17.8 | 70 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.12 | 739.6 | 29.86 | 758.4 | 55 | 12.8 | 50 | NE | 14 | 6.3 | ..... | 0 | 2s | ..... | NE | 0 | 0 | Fair | |
| Eastport, Maine | 30.18 | 766.6 | 30.25 | 768.3 | 25 | — 3.9 | 62 | E | 12 | 5.4 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 69 | 20.6 | 95 | S | ..... | ..... | 1 | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.16 | 664.4 | ..... | ..... | 50 | 10.0 | 18 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.13 | 739.9 | 29.88 | 758.9 | 23 | — 5.0 | 100 | N | 9 | 4.0 | ..... | ..... | 10n | ..... | Calm | 0.33 | 8.4 | Light snow | |
| Escanaba, Michigan | 29.34 | 745.2 | 30.09 | 764.3 | — 7 | —21.7 | 59 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.50 | 723.9 | 30.10 | 764.5 | 47 | 8.3 | 41 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 28.17 | 715.5 | ..... | ..... | — 8 | —22.2 | 56 | NW | 1 | 0.4 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Fort Craig, New Mexico | 25.45 | 646.4 | 29.52 | 749.8 | 41 | 5.0 | 32 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.14 | 638.5 | 30.10 | 764.5 | 32 | 0.0 | 69 | E | 5 | 2.2 | ..... | 2k | 0 | W | ..... | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.66 | 753.4 | 30.24 | 768.1 | 25 | — 3.9 | 75 | N | 16 | 7.2 | ..... | 5ck | 0 | NW | ..... | 0.02 | 0.5 | Fair | |
| Fort Griffin, Texas | 28.88 | 733.5 | 30.24 | 768.1 | 26 | — 3.3 | 63 | N | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.66 | 702.6 | ..... | ..... | 4 | —15.6 | 74 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort McKavett, Texas | 27.78 | 705.6 | 29.80 | 756.9 | 30 | — 1.1 | 68 | N | 16 | 7.2 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.96 | 735.6 | 30.16 | 766.1 | 23 | — 5.0 | 86 | N | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Stevenson, Dakota | 28.32 | 719.3 | ..... | ..... | —13 | —25.0 | 74 | W | 10 | 4.5 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fredericksburg, Texas | 28 26 | 717.8 | 29.87 | 758.7 | 40 | 4.4 | 56 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 29.84 | 757.9 | 29.88 | 758.9 | 58 | 14.4 | 100 | NW | 24 | 10.7 | ..... | ..... | 10n | ..... | Calm | 0.20 | 5.1 | Light rain | |
| Graham, Texas | 29.09 | 738.9 | 30.22 | 767.6 | 26 | — 3.3 | 52 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.34 | 745.2 | 30.03 | 762.8 | 21 | — 6.1 | 71 | E | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light snow | |
| Indianapolis, Indiana | 29.24 | 742.7 | 30.07 | 763.8 | 21 | — 6.1 | 71 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 0.38 | 9.7 | Cloudy | |
| Indianola, Texas | 29.82 | 757.4 | 29.85 | 758.2 | 63 | 17.2 | 94 | NE | 28 | 12.5 | ..... | ..... | 10s | ..... | NE | 0.04 | 1.0 | Threatening | |
| Jacksboro, Texas | 29.00 | 736.6 | 30.22 | 767.6 | 25 | — 3.9 | 62 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.97 | 761.2 | 29.99 | 761.7 | 63 | 17.2 | 67 | SE | 12 | 5.4 | ..... | 2ck | Haze | Calm | Calm | 0 | 0 | Fair | |
| Keokuk, Iowa | 29.55 | 750 6 | 30.23 | 767.8 | 10 | —12.2 | 79 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.17 | 4.3 | Clear | |
| Key West, Florida | 29.97 | 761.2 | 30.00 | 762.0 | 73 | 22.8 | 67 | SE | 15 | 6.7 | ..... | 5k;hz | 0 | 8E;Calm | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 29.94 | 760.5 | 29.96 | 761.0 | 57 | 13.9 | 87 | SW | 22 | 9.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Knoxville, Tennessee | 28.84 | 732.5 | 29.84 | 757.9 | 50 | 10.0 | 97 | W | 9 | 4.0 | ..... | ..... | 10n | ..... | SW | 0.33 | 8.4 | Light rain | |
| La Crosse, Wisconsin | 29.36 | 745.7 | 30.16 | 766.1 | 12 | —11.1 | 61 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.01 | 660 6 | 30.16 | 766.1 | 39 | 3.9 | 46 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.32 | 745.0 | 29.66 | 753.4 | 73 | 22.8 | 72 | SW | 3 | 1.3 | ..... | 10ck | 0 | W | ..... | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29 40 | 746.7 | 30.33 | 770.4 | 14 | —10.0 | 82 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.73 | 755.1 | 30.08 | 764.0 | 55.0 | 12.8 | 87 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Louisville, Kentucky | 29.48 | 748.8 | 30.07 | 763.8 | 25 | — 3.9 | 62 | NW | 10 | 4.5 | ..... | 8k | 2s | NW | Calm | 0.66 | 16.8 | Cloudy | |
| Lynchburg, Virginia | 29.10 | 739.1 | 29.78 | 756.4 | 47 | 8.3 | 77 | SW | 2 | 0.9 | ..... | 0 | 8ks | ..... | W | 0 | 0 | Cloudy | |
| Madison, Wisconsin | 29.05 | 737.9 | 30.12 | 765.0 | 12 | —11.1 | 61 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.26 | 743.2 | 30.03 | 762.8 | 4 | —15.6 | 48 | W | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 29.40 | 746.7 | 30.24 | 768.1 | 33 | 0.6 | 79 | N | 15 | 6.7 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.82 | 757 4 | 30.17 | 766.3 | 28 | — 2.2 | 88 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.79 | 20.1 | Cloudy | |
| Milwaukee, Wisconsin | 29.30 | 744.2 | 30.10 | 764.5 | 11 | —11.7 | 89 | W | 10 | 4.5 | ..... | 2c | 1s | W | Calm | 0 | 0 | Fair | |
| Mobile, Alabama | 29.81 | 757.2 | 29.85 | 758.2 | 59 | 15.0 | 97 | N | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | 0.39 | 9.9 | Light rain | |
| Montgomery, Alabama | 29.65 | 753.1 | 29 88 | 758.9 | 60 | 15.6 | 88 | S | 5 | 2.2 | ..... | ..... | 10n | ..... | W | 0.76 | 19.3 | Light rain | |
| Morgantown, West Virginia | 28.70 | 729.0 | 29.78 | 756.4 | 33 | 0.6 | 89 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.11 | 2.8 | Light snow | |
| Mt. Washington, N. H. | 23.53 | 597.6 | 29.89 | 759.2 | 11 | —11.7 | 100 | NW | 60 | 26.8 | ..... | ..... | Fog | ..... | NW | 0 | 0 | Foggy | |
| Nashville, Tennessee | 29.54 | 750.3 | 30.10 | 764.5 | 30 | — 1.1 | 78 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 1.76 | 44.7 | Cloudy | |
| New Haven, Connecticut | 29.81 | 757.2 | 29.93 | 760.2 | 34 | 1.1 | 85 | E | 16 | 7.2 | ..... | ..... | 10n | ..... | E | 0.35 | 8.9 | Light rain | |
| New London, Connecticut | 29.94 | 760.5 | 29.99 | 761.7 | 34 | 1.1 | 90 | NE | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.3 | Light rain | |
| New Orleans, Louisiana | 29.77 | 756.1 | 29.83 | 757.7 | 64 | 17.8 | 83 | N | 6 | 2.7 | ..... | 0 | 8s | ..... | NW | 0.03 | 0.8 | Fair | |
| Newport, Rhode Island | 29.96 | 761.0 | 30.02 | 762.5 | 34 | 1.1 | 100 | E | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.08 | 2.0 | Light snow | |
| New York, New York | 29.66 | 753.4 | 29.84 | 757.9 | 38 | 3.3 | 90 | E | 15 | 6.7 | ..... | ..... | 10n | ..... | Calm | 0.37 | 9.4 | Light rain | |
| Norfolk, Virginia | 29.86 | 758.4 | 29.91 | 759.7 | 57 | 13.9 | 87 | S | 18 | 8.0 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.25 | 692.1 | 30.02 | 762.5 | 17 | — 8.3 | 83 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.06 | 1.5 | Cloudy | |
| Olympia, Washington Ter. | 30.07 | 763.8 | 30.11 | 764.8 | 36.0 | 2.2 | 90 | Calm | 0 | 0 | ..... | 0 | 10s | ..... | Calm | 0 | 0 | Clear | |
| Omaha, Nebraska | 29.11 | 739.4 | 30.34 | 770.6 | 7 | —13.9 | 77 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.19 | 4.8 | Clear | |
| Oswego, New York | 29.57 | 751.1 | 29.90 | 759.4 | 26 | — 3.3 | 88 | NE | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.80 | 7.6 | Heavy snow | |
| Pembina, Dakota | 29.26 | 743.2 | 30.22 | 767.6 | —16 | —26.7 | 100 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pa | 29.71 | 754.6 | 29 76 | 755.9 | 43 | 6.1 | 92 | E | 3 | 1.3 | ..... | ..... | 10ks | ..... | SW | 0.20 | 5.1 | Cloudy | |
| Phœnix, Arizona | 28.82 | 732.0 | 30.65 | 778.5 | 50 | 10.0 | 45 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.52 | 445.0 | 29.74 | 755.4 | 4 | —15.6 | 74 | W | 24 | 10.7 | ..... | 5k | 0 | W | ..... | 0.02 | 0.5 | Fair | |
| Ploche, Nevada | 24.00 | 609.6 | 29.77 | 756.1 | 40 | 4.4 | 81 | NW | 2 | 0.9 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 28.97 | 735.8 | 29.80 | 756.9 | 29 | — 1.7 | 89 | NW | 9 | 4.0 | ..... | ..... | 10n | ..... | Calm | 0.45 | 11.4 | Light snow | |
| Port Huron, Michigan | 29.24 | 742.7 | 29.94 | 760.5 | 20 | — 6.7 | 85 | NW | 4 | 1.8 | ..... | ..... | 10ks | ..... | NW | Inap. | Inap. | Cloudy | |
| Portland, Maine | 30.09 | 764.3 | 30.14 | 765.5 | 32 | 0.0 | 89 | E | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.08 | 2.0 | Light snow | |
| Portland, Oregon | 30.05 | 763.3 | 30.16 | 766.1 | 42.3 | 5.7 | 97 | N | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Prescott, Arizona | 24.71 | 627.6 | 30.07 | 763.8 | 40 | 4.4 | 65 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Punta Rassa, Florida | 29.99 | 761.7 | 30.01 | 762.2 | 67 | 19.4 | 69 | SE | 15 | 6.7 | ..... | 5cs | 5s | Calm | Calm | 0 | 0 | Cloudy | |
| Red Bluff, California | 29.66 | 753.4 | 30.02 | 762.5 | 53 | 11.7 | 86 | Calm | 0 | 0 | ..... | 2c | 2s | Calm | Calm | 0 | 0 | Fair | |
| Rio Grande City, Texas | 29.61 | 752.1 | 29.82 | 757.4 | 70 | 21.1 | 90 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Rochester, New York | 29.24 | 742.7 | 29.88 | 758.9 | 22 | — 5.6 | 93 | E | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.40 | 10.2 | Heavy snow | |
| Roseburg, Oregon | 29.53 | 750.0 | 30.11 | 764.8 | 40.0 | 4.4 | 96 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sacramento, California | 29.95 | 760.7 | 30.04 | 763.0 | 51 | 10.6 | 90 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.63 | 752.6 | 30.26 | 768.6 | 17 | — 8.3 | 83 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.29 | 7.4 | Clear | |
| St. Marks, Florida | 29.92 | 760.0 | 29.93 | 760.2 | 65 | 18.3 | 84 | S | 14 | 6.3 | ..... | 0 | 8s | ..... | S | 0 | 0 | Fair | |
| St. Paul, Minnesota | 29.25 | 742.9 | 30.16 | 766.1 | 7 | —13.9 | 54 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.61 | 650.5 | 29.94 | 760.5 | 43 | 6.1 | 36 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| San Antonio, Texas | 29.21 | 741.9 | 29.80 | 756.9 | 49 | 9.4 | 57 | N | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0.05 | 1.3 | Cloudy | |
| San Diego, California | 30.06 | 763.5 | 30.13 | 765.3 | 57 | 13.9 | 81 | NW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.27 | 743.4 | 29.98 | 761.5 | 24 | — 4.4 | 87 | N | 16 | 7.2 | ..... | ..... | 10n | ..... | Calm | 0.12 | 3.0 | Light snow | |
| Sandy Hook, New Jersey | 29.77 | 756.1 | 29.81 | 757.2 | 39 | 3.9 | 100 | SE | 26 | 11.6 | ..... | ..... | 10s | ..... | W | 0.30 | 7.6 | Cloudy | |
| San Francisco, California | 30.01 | 762.2 | 30.08 | 764.0 | 52.3 | 11.3 | 83 | W | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Santa Fé, New Mexico | 23.15 | 588.0 | 29.69 | 754.1 | 27 | — 2.8 | 53 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.90 | 759.4 | 29.99 | 761.7 | 63 | 17.2 | 78 | SW | 10 | 4.5 | ..... | 8cs | Sm'e | W | Calm | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.78 | 756.4 | 30.01 | 762.2 | 42 | 5.6 | 83 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 0.75 | 19.1 | Cloudy | |
| Silver City, New Mexico | 24.23 | 615.4 | 30.47 | 773.9 | 40 | 4.4 | 40 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.01 | 762.2 | 30.04 | 763.0 | 59 | 15.0 | 94 | S | 12 | 5.4 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 29.87 | 758.7 | 30.01 | 762.2 | 28 | — 2.2 | 100 | NE | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | 0.46 | 11.7 | Heavy snow | |
| Stockton, Texas | 27.06 | 687.3 | 30.06 | 763.5 | 32 | 0.0 | 79 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Thatcher's Island, Mass | 30.04 | 763.0 | 30.09 | 764.3 | 32 | 0.0 | 79 | SE | 29 | 13.0 | ..... | ..... | 10n | ..... | SE | 0.25 | 6.3 | Light rain | |
| Toledo, Ohio | 29.26 | 746.2 | 29.98 | 761.5 | 25 | — 3.9 | 87 | NW | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | Light snow | |
| Tucson, Arizona | 27.53 | 699.2 | 30.08 | 764.0 | 48 | 8.9 | 42 | E | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.79 | 756.7 | 30.28 | 769.1 | 48.0 | 8.9 | 43 | E | 6 | 2.7 | ..... | 0 | 5s | ..... | E | 0 | 0 | Fair | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 31 | — 0.6 | 100 | SE | ..... | ..... | 4 | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Uvalde, Texas | 29.06 | 738.1 | 29.90 | 759.4 | 47 | 8.3 | 62 | N | 12 | 5.4 | ..... | 2c | 5s | Calm | N | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.78 | 756.1 | 30.00 | 762.0 | 43 | 6.1 | 92 | NE | 12 | 5.4 | ..... | ..... | 10s | ..... | NE | 0.48 | 12.2 | Cloudy | |
| Virginia City, Montana | 24.22 | 615.2 | 29.70 | 754.4 | 20 | — 6.7 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.65 | 753.1 | 30.02 | 762.5 | 48.3 | 9.1 | 89 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 29.04 | 752 8 | 29.75 | 755.6 | 46 | 7.8 | 77 | S | 5 | 2.2 | ..... | ..... | 10ks | ..... | SW | Inap. | Inap. | Cloudy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 44 | 6.7 | 60 | Calm | ..... | ..... | 0 | 2cs | 0 | W | ..... | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 29.92 | 760.0 | 30.00 | 762.0 | 64 | 17.8 | 78 | S | 14 | 6.3 | ..... | 10c | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Winnemucca, Nevada | 25.64 | 651.2 | 30.00 | 762.0 | 35 | 1.7 | 53 | Calm | 0 | 0 | ..... | 5ck | 0 | SW | ..... | 0 | 0 | Fair | |
| Wood's Holl, Mass | 29.98 | 761.5 | 30.02 | 762.5 | 37 | 2.8 | 71 | SE | 20 | 8.9 | ..... | ..... | 10ks | ..... | SW | 0.05 | 1.3 | Threatening | |
| Yankton, Dakota | 28.98 | 736.1 | 30.42 | 772.6 | 6 | —14.4 | 76 | W | 4 | 1.8 | ..... | 10ck | 0 | NW | ..... | 0.03 | 0.8 | Cloudy | |
| Yuma, Arizona | 29.80 | 756.9 | 29.96 | 761.0 | 54 | 12.2 | 80 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.66 | 728.0 | 30.19 | 766.8 | 20 | — 6.7 | 85 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba. W. I | 29.95 | 760.7 | 30.00 | 762.0 | 71 | 21.7 | 71 | E | 2.4 | 1.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.31 | 640.3 | ..... | ..... | 65.5 | 18.6 | 85 | Calm | 0 | 0 | ..... | 8k | 4ks | ..... | ..... | 0.02 | 0.5 | ..... | Thomas Herran. |
| Navassa, W. I | 29.94 | 760.5 | 30.02 | 762.5 | 78 | 25.6 | ..... | NE | 7.3 | 3.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Partly cloudy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S.A | 30.02 | 762.5 | 30.02 | 762.5 | 82 | 27.8 | 79 | NE | ..... | ..... | 2 | 8c | 8k | E | ..... | 0 | 0 | Fair | O. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,836.3 ft., or 1,321.4 m.; Yankton, 1,275 ft.,or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.01 | 762.2 | 63 | 11.7 | 51 | 10.6 | 86 | SW | 6 | 2.7 | .... | ..... | ..... | ..... | SW | 0 | 0 | ..... | ..... | Clearing..... | |
| Navy Yard, Pensacola, Fla. | 30.00 | 762.0 | 64 | 17.8 | 64 | 17.8 | 94 | SW | 10 | 4.5 | ..... | ..... | ..... | ..... | NW | 0.50 | 12.7 | ..... | ..... | Thunder-storm.. | |
| Navy Yard, Portsmouth, N.H | 29.95 | 760.7 | 68 | 20.0 | 30 | — 1.1 | 89 | ENE | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Snowing..... | |
| Naval Hospital, Yokohama, Japan.....* | 30.10‡ | 764.5‡ | ..... | ..... | 44 | 6.7 | 79 | Calm | ..... | ..... | 0 | ..... | 10s | ..... | W | 0 | 0 | ..... | ..... | Overcast..... | |
| Adams, Panama .....* | 29.93 | 760.2 | 80 | 26.7 | 78 | 25.6 | 95 | NW | ..... | ..... | 1 | ..... | 2 | ..... | N;W | ..... | ..... | ..... | ..... | Clear..... | |
| Alaska..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Alliance, N. 44° 05′, E. 9° 07′..... | 30.11‡ | 764.8‡ | ..... | ..... | 59 | 15.0 | 65 | SSE | ..... | ..... | 1–2 | ..... | 10 | ..... | Calm | ..... | ..... | Light | S | Threatening | |
| Ashuelot, Hong-Kong, China. ..* | 29.97‡ | 761.2‡ | ..... | ..... | 65 | 18.3 | 73 | N | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Rainy ..... | |
| Canonicus, New Orleans, La.....* | 29.86 | 758.4 | 48 | 8.9 | 61 | 16.1 | 100 | NE | ..... | .... | 3 | ..... | 2 | ..... | NE | ..... | ..... | ..... | ..... | Fair..... | |
| Colorado, New York, N. Y..... | 29.80 | 756.9 | 37 | 2.8 | 36 | 2.2 | 100 | ESE | 5 | 2.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Raining..... | |
| Constitution Lisbon, Portugal..... | 29.87‡ | 758.7‡ | ..... | ..... | 59 | 15.0 | 100 | SE | ..... | ..... | 3 | ..... | 8 | ..... | SE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Despatch, Naples, Italy..... | 30.14‡ | 765.5‡ | ..... | ..... | 67 | 19.4 | 55 | NW | ..... | ..... | 2 | ..... | 5 | ..... | NW | ..... | ..... | Smooth | ..... | Fair ..... | |
| Franklin, Norfolk, Va.....* | 30.06 | 763.5 | 67 | 19.4 | 58 | 14.4 | 88 | SSW | 25 | 11.2 | ..... | ..... | 8 | ..... | Calm | 0 | 0 | ..... | ..... | Clear?..... | |
| Gettysburg, Genoa, Italy ..... | 30.01‡ | 762.2‡ | ..... | ..... | 59 | 15.0 | 76 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Overcast ..... | |
| Hartford, Montevideo, Uruguay*... | 30.03 | 762.8 | 72 | 22.2 | 75 | 23.9 | 68 | N | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair ..... | |
| Lackawana, S. 3° 10′, W. 80° 10′.... * | 29.74‡ | 755.4‡ | ..... | ..... | 78 | 25.6 | 91 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear. ..... | |
| Michigan, Erie, Pa.....† | 29.94 | 760.5 | ..... | ..... | 23 | — 5.0 | 86 | NNE | ..... | ..... | 4 | ..... | 10 | ..... | W | ..... | ..... | ..... | ..... | Overcast..... | |
| Monocacy, Shanghai, China.....* | 30.26‡ | 768.6‡ | ..... | ..... | 45 | 7.2 | 76 | NNE | ..... | ..... | 2–4 | ..... | 10 | ..... | NNE | ..... | ..... | ..... | ..... | Squally..... | |
| Monongehela, Yokohama, Japan ....* | 30.04‡ | 763.0‡ | ..... | ..... | 48 | 8.9 | 56 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Hazy..... | |
| New Hampshire, Port Royal, S. C.....* | 30.12 | 765.0 | 63 | 17.2 | 62 | 16.7 | 83 | SW | 18.0 | 8.0 | ..... | ..... | 2 | ..... | SW | 0 | 0 | ..... | ..... | Clear..... | |
| Onward, Callao, Peru.....†* | 30.03 | 762.8 | ..... | ..... | 67 | 19.4 | 95 | SSE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Palos, Tientsin, China.....* | 30.33 | 770.4 | 32 | 0.0 | 34 | 1.1 | 71 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 47 | 8.3 | 85 | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Pensacola, Valparaiso, Chili..... | 29.95‡ | 760.7‡ | ..... | ..... | 62 | 16.7 | 83 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Misty..... | |
| Plymouth, N. 35° 58′, W. 66° 15′..... | 30.17‡ | 766.3‡ | ..... | ..... | 56 | 13.3 | 100 | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Light | S;E | Drizzling..... | |
| Powhatan, St. Thomas, W. I..... | 30.01‡ | 762.2‡ | ..... | ..... | 80 | 26.7 | 66 | E | ..... | ..... | 1 | ..... | 2 | .... | E | 0.005 | 0.13 | Smooth | E | Clear..... | |
| Quinnebaug, Port Mahon, Minorca Id | 30.04‡ | 763.0‡ | ..... | ..... | 60 | 15.6 | 71 | ENE | ..... | ..... | 1 | ..... | 2 | ..... | ENE | ..... | ..... | ..... | ..... | Fair..... | |
| Ranger. Foochow, China.....* | 30.11‡ | 764.8‡ | ..... | ..... | 60 | 15.6 | 82 | ENE | ..... | ..... | 4 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy ..... | |
| Richmond, Suez Canal..... | 30.02‡ | 762.5‡ | ..... | ..... | 75 | 23.9 | 37 | W | ..... | ..... | 0–1 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Rio Bravo, Brownsville, Texas..... | 29.80 | 756.9 | 74 | 23.3 | 72 | 22.2 | 95 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | SW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md... ..... | 29.73‡ | 755.1‡ | ..... | ..... | 50 | 10.0 | 72 | S | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Saratoga, Hampton Roads, Va..... | 29.90‡ | 759.4‡ | ..... | ..... | 54 | 12.2 | 93 | S | ..... | ..... | 5 | ..... | 10 | ..... | S | 0 | 0 | ..... | ..... | Overcast..... | |
| St. Louis, League Island, Pa..... | 29.70 | 754.4 | 57 | 13.9 | 43 | 6.1 | 92 | SE | 3 | 1.3 | ..... | ..... | 10 | ..... | SW | 0.25 | 6.3 | ..... | ..... | Cloudy..... | |
| Supply, N. 40° 07′, W. 73° 33′..... | 29.80‡ | 756.9‡ | ..... | ..... | 44 | 6.7 | 92 | SE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Trenton Naples, Italy.....* | 30.15‡ | 765.8‡ | ..... | ..... | 65 | 18.3 | 73 | SW | ..... | ..... | 1–2 | ..... | 5 | ..... | Calm | 0 | 0 | Smooth | ..... | Fair ..... | |
| Tuscarora, Salinas Cruz, Mexico.. | 29.88‡ | 758.9‡ | ..... | ..... | 79 | 26.1 | 82 | S | ..... | ..... | 2 | ..... | 5 | ..... | Calm | 0 | 0 | Smooth | ..... | Clear..... | |
| Wabash, Boston, Mass..... | 30.12‡ | 765.0‡ | ..... | ..... | 31 | — 0.6 | 89 | E | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Snowing..... | |
| Wyoming. N. 34° 00′, E. 28° 33′ ...* | 30.13‡ | 765.3‡ | ..... | ..... | 59 | 15.0 | 100 | SE | ..... | ..... | 2 | ..... | 2 | ..... | SE | ..... | ..... | Smooth | ..... | Fair.. ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Whiteburv |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Granada, Capt. Austin, N. 15° 42′, W. 95° 55′ †* | | 30.14‡ | 765.5‡ | 79 | 26.1 | | WSW | | | 4 | | 0 | | | | Light | WSW | Hazy | Capt. A. Fuller. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |
| S. S. Zealandia | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; and no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, N. 22° 25′, E. 115° 23′ | | 29.94‡ | 760.5‡ | 57 | 13.9 | 81 | NE | | | 6 | | ks | | NE | | Rough | NE | Raining | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 23° 46′, E. 118° 00′ †* | | 29.94‡ | 760.5‡ | 56 | 13.3 | | NE | | | 6 | | k | | SW | | High | NE | Raining | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, Bremerhaven, Germany | | 29.88‡ | 758.9‡ | | | | NE | | | 6 | | | | N | | | | Raining | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall of melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Liverpool | | 30.00‡ | 762.0‡ | 40 | 4.4 | | ESE | | | 5 | | 8 | | ESE | Mod'ate | | | Cloudy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES.** (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, N. 33° 54', W. 76° 18' | | 29.97‡ | 761.2‡ | 69 | 20.6 | 70 | SSW | 11 | 4.9 | | | 5k | | SW | 0 | Rough | S | D. Clouds | Capt. James Jorgensen. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

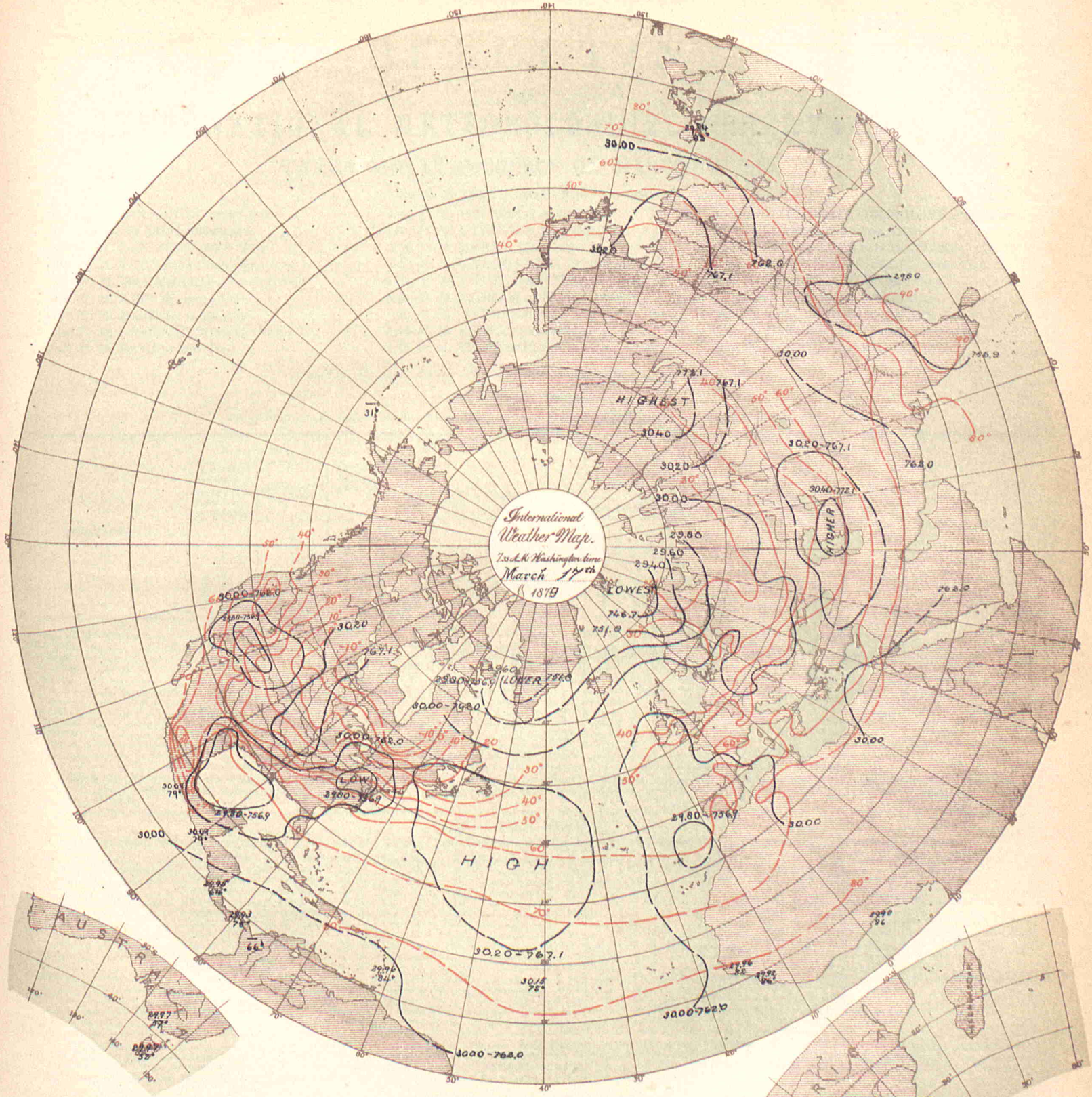
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 18, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | 29.87 | 758.8 | 60.4 | 15.8 | 78 | SW | | | 3 | | 10 | | | 0.374 | 9.5 | | |
| Nemours | | | 29.58 | 751.3 | 67.1 | 19.5 | 87 | WNW | | | 2 | | 10 | | | 0.079 | 2.0 | Covered | Kesxuche. |
| Algiers | | | 29.63 | 752.5 | 69.1 | 20.6 | 51 | ESE | | | 3 | | 5 | | | Inap | Inap | Cloudy | Tourilliere. |
| La Calle | | | 29.79 | 756.6 | 80.1 | 26.7 | 53 | ENE | | | 4 | | 5 | | | 0 | 0 | Cloudy | Foufrede. |
| Tunis | | | 29.93 | 760.1 | 76.3 | 24.6 | 30 | SW | | | 5 | | 5 | | | 0.217 | 5.5 | Cloudy | Jacques. |
| Sfax | | | 30.05 | 763.2 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 29.72 | 754.8 | 73.8 | 23.2 | 11 | S | | | 8 | | 7 | | | 0 | 0 | Foggy | Herbin. |
| Tebessa | | | 29.93 | 760.1 | 67.1 | 19.5 | 20 | S | | | 4 | | 8 | | | 0 | 0 | Very cloudy | Watrin. |
| Geriville | | | 29.77 | 756.2 | 57.7 | 14.3 | 87 | SE | | | 8 | | 5 | | | 0 | 0 | Cloudy | Brugnlaux. |
| Laghouat | | | 29.82 | 757.5 | 66.9 | 19.4 | 18 | S | | | 6 | | 5 | | | 0 | 0 | Cloudy | Bertrand. |
| Biskra | | | 29.82 | 757.4 | 72.1 | 22.3 | 30 | SE | | | 5 | | 5 | | | 0 | 0 | Cloudy. | Chanvaux. |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.51 | 749.5 | 30.06 | 763.6 | 58.2 | 11.8 | 54 | E | | | 2 | | 1 | | | 0 | 0 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.36 | 745.7 | 30.16 | 766.1 | 32.7 | 0.4 | 89 | W | | | 1 | | 10 | | | 0.039 | 1.0 | | Dr. Wierzbiski. |
| Eperies | 29.14 | 740.2 | 30.05 | 763.2 | 40.3 | 4.6 | | N | | | 3 | | 9ks | | S | 0.063 | 1.60 | | Julius Mikolik. |
| Gratz | 28.83 | 732.2 | 30.09 | 764.2 | 49.6 | 9.8 | 67 | SE | | | 3 | | 3 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.52 | 724.5 | 29.98 | 761.6 | 43.2 | 6.2 | 74 | NW | | | 3 | | 6 | | | 0.014 | 0.35 | | Prof. A. Gottschling. |
| Kremsmünster | 28.68 | 728.5 | 30.04 | 763.1 | 40.8 | 8.2 | 71 | ENE | | | 1 | | 1 | | | 0 | 0 | | Prof. C. Wagner. |
| Lemberg | 29.00 | 736.5 | 30.02 | 762.5 | 34.9 | 1.6 | 87 | NW | | | 1 | | 10 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 29.07 | 761.2 | 30.08 | 764.1 | 58.5 | 14.7 | 67 | SW | | | 1 | | 0 | | | 0 | 0 | | I.R.Hydrographic Office. |
| Szathmar | 29.56 | 750.8 | 30.03 | 762.8 | 45.1 | 7.3 | 74 | NW | | | 3 | | 8 | | | 0.134 | 3.4 | | Julius Osics, S. J. |
| Szegedin | | | | | | | | | | | | | | | | | | | Karl Stancel. |
| Trieste | 30.01 | 762.2 | 30.11 | 764.8 | 54.3 | 12.4 | 68 | Calm | | | 0 | | 5 | | | 0 | 0 | | P. Busin. |
| Vienna | 29.39 | 746.5 | 30.12 | 765.1 | 44.1 | 5.4 | 56 | NNE | | | 1 | | 0 | | | 0 | 0 | | I. R. Central Met. Obs'y. |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.76 | 755.9 | 29.96 | 761.0 | 51.6 | 10.9 | 64 | ESE | | | 1 | | 3 | | W? | 0 | 0 | | Royal Observatory |
| Furnes | | | | | | | | | | | | | | | | | | | M. E. de Cae. |
| Maeseyck | 29.88 | 758.9 | 30.01 | 762.1 | 47.1 | 8.4 | 70 | SE | | | 2 | | 0 | | | 0 | 0 | | M. Pierrot. |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.72 | 754.9 | 29.82 | 757.4 | 39.3 | 4.1 | ..... | SSE | 4 | 1.8 | ..... | ..... | 9 | ..... | ..... | 0.110 | 2.79 | Misty..... | W. Boswell. |
| Ardrossan | 29.76 | 755.6 | 29.77 | 756.1 | 40 | 4.4 | ..... | ENE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Misty..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.74 | 755.4 | 43.8 | 6.6 | ..... | ESE | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.78 | 756.4 | 49.8 | 9.9 | ..... | SE | 14 | 6.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast .... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.80 | 756.9 | 42.4 | 5.8 | ..... | S | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | Thomas Mackereth. |
| Bradford, Yorkshire | 29.37 | 746.0 | 29.77 | 756.1 | 47.5 | 8.6 | ..... | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.20 | 5.1 | Overcast..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.98 | 761.5 | 30.01 | 762.2 | 83.5 | 28.6 | ..... | E | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.83 | 757.7 | 57.0 | 13.9 | ..... | S | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | H. Todd. [C. |
| Cardington | ..... | ..... | 29.82 | 757.4 | 54.0 | 12.2 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E. | 29.74 | 755.4 | 29.88 | 758.9 | 57.5 | 14.2 | ..... | S | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Corpl. Daly, R. E. |
| Dartmoor | 28.32 | 719.3 | 29.79 | 756.7 | 47.0 | 8.3 | ..... | SW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | Fine ..... | Alexander Watt. |
| Donaghadee | 29.72 | 754.9 | 29.76 | 755.9 | 42 | 5.6 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | J. Mac Gowan. |
| Dover | 29.53 | 757.7 | 29.85 | 758.2 | 51 | 10.6 | ..... | ESE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | ¼ clouded... | J. Costello. |
| Falmouth, Observatory | 29.55 | 750.6 | 29.78 | 756.4 | 46.7 | 9.3 | ..... | SE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.51 | 698.7 | 29.63 | 752.7 | 64.0 | 17.8 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.74 | 755.4 | 29.97 | 761.2 | 86 | 30.0 | ..... | SW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | 29.61 | 752.1 | 46 | 7.8 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.54 | 750.3 | 29.60 | 751.8 | 57.2 | 14.0 | ..... | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy..... | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.67 | 751.1 | 29.78 | 756.4 | 39.0 | 3.9 | ..... | NE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | D. G. Maclean. |
| Great Yarmouth | 29.89 | 759.2 | 29.90 | 759.4 | 41 | 5.0 | ..... | SSE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | Misty..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.68 | 753.9 | 29.85 | 758.2 | 53.1 | 11.7 | ..... | SSW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff, for G. B. Airy. |
| Guernsey | 29.58 | 751.3 | 29.80 | 756.9 | 51.5 | 10.8 | ..... | SE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Blue sky..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | 29.74 | 755.4 | 29.86 | 758.4 | 54 | 12.2 | ..... | S | ..... | ..... | 2 | ..... | 6k | ..... | ..... | 0 | 0 | Fair ..... | M. P. Moyle. |
| Holyhead | 29.66 | 753.4 | 29.71 | 754.6 | 49 | 9.4 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling.... | John Tilston. |
| Jersey | 29.56 | 750.8 | 29.85 | 758.2 | 48.0 | 8.9 | ..... | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | J. Fisher. |
| Kew, Observatory | 29.82 | 757.4 | 29.86 | 758.4 | 50.2 | 10.1 | ..... | S | 5 | 2.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | The Meteorological Of. |
| Leicester, Museum | 29.56 | 750.8 | 29.82 | 757.4 | 40.6 | 4.8 | ..... | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 30.07 | 763.8 | 30.15 | 765.8 | 63 | 17.2 | ..... | NE | ..... | ..... | 2 | ..... | 4k | ..... | ..... | ..... | ..... | D. clouds.... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.70 | 754.4 | 29.84 | 758.9 | 38 | 3.3 | ..... | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 29.95 | 760.7 | 75.5 | 24.2 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast .... | C. S. Duncombe. |
| Nottingham, Observatory | 29.73 | 755.1 | 29.92 | 760.0 | 51.1 | 10.6 | ..... | SSE | ..... | ..... | 3 | ..... | 9k | S | ..... | 0.159 | 4.04 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.29 | 744.0 | 29.82 | 757.4 | 48.2 | 9.0 | ..... | SSE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.89 | 759.2 | 46 | 7.8 | ..... | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | H. E. Bellamy. |
| Plymouth | 29.71 | 754.6 | 29.79 | 756.7 | 50.8 | 10.4 | ..... | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Merrifield. |
| Roche's Point | 29.68 | 753.9 | 29.72 | 754.9 | 50 | 10.0 | ..... | SSE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | ⅝ clouded... | W. Kennedy. |
| Saint Ann's Head | 29.59 | 751.6 | 29.75 | 755.6 | 46 | 7.8 | ..... | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 29.86 | 758.4 | 35.8 | 2.1 | ..... | E | 20 | 8.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev O. Clouston, L.L.D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.99 | 761.7 | 56.0 | 13.3 | ..... | SW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | W. H. Lyne. |
| Sheffield | 29.55 | 750.6 | 29.84 | 757.9 | 50.9 | 10.5 | ..... | SSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.11 | 2.8 | Overcast..... | W. F. Cooper. |
| Silloth Rectory | 29.74 | 755.4 | 29.77 | 756.1 | 45.2 | 7.3 | 91 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.418 | 10.61 | Raining..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.39 | 746.5 | 29.79 | 756.7 | 46.3 | 7.9 | ..... | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | Rev. S. J. Perry. |
| Stratfield Turgiss | 29.66 | 753.4 | 29.86 | 758.9 | 46.8 | 8.2 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy ..... | C.H.Griffith, F.M.S. |
| Thurso | 29.78 | 756.4 | 29.84 | 757.9 | 37 | 2.8 | ..... | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | John Trotter. |
| Truro, Royal Institution | 29.71 | 754.6 | 29.76 | 755.9 | 55 | 12.8 | ..... | SE | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | 29.63 | 752.6 | 29.65 | 753.1 | 48.5 | 9.2 | ..... | SSW | 18 | 8.0 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | D. clouds..... | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.07 | 763.8 | 30.12 | 765.0 | 71.2 | 21.8 | 47 | SE | 12 | 5.4 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Fine..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.98 | 761.5 | 53.0 | 12.0 | 82 | S | ..... | ..... | 1 | ..... | 10kn | ..... | ..... | 0.04 | 1.0 | Covered..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.83 | 757.7 | 41.7 | 5.4 | ..... | E | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0.24 | 6.1 | ..... | Andrew Gibb. |
| Mauritius, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Meldrum. |
| Melbourne, Observatory | 30.08 | 764.0 | 30.17 | 766.3 | 58.0 | 14.4 | 61 | SW | 17 | 7.6 | ..... | ..... | 10 | ..... | ..... | 0.06 | 1.52 | Gloomy..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 29.77 | 756.1 | 39 | 3.9 | ..... | SE | ..... | ..... | 3 | 10 | 0 | SE | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.96 | 761.0 | 38 | 3.3 | ..... | E | ..... | ..... | 3 | 4 | 7 | NE | ..... | ..... | ..... | Snowing..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

| British Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 36° 23′, E. 22° 11′ | ..... | ..... | 30.04‡ | 763.0‡ | 61 | 16.1 | ..... | NW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle Isle, N. 33° 20′, W. 71° 02′ | ..... | ..... | 29.98‡ | 761.6‡ | 67 | 19.4 | ..... | SE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 5 | SE | Overcast..... | Capt. A. J. Brown. |
| Ship British Commodore, N. 39° 10′, W. 67° 00′ | ..... | ..... | 29.93 | 760.2 | 55 | 12.8 | ..... | SSW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 4 | S,NW | Lightning... | Capt. J. W. Thorne. |
| —— City of Agra, N. 19° 15′ W. 42° 50′ | ..... | ..... | 30.29‡ | 769.4‡ | 75.8 | 24.3 | ..... | ENE | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | Threatening | Capt. Thos. Young. |
| Barque Commewyne, N. 35° 33′, W. 50° 58′ | ..... | ..... | 30.39‡ | 771.9‡ | 65 | 18.3 | ..... | SE | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | Misty..... | Capt. A. Buchan. |
| Barque Fedalina, N. 48° 55′, W. 8° 30′ | ..... | ..... | 29.74‡ | 755.4‡ | 57 | 13.9 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | ..... | Blue sky..... | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven, N. 27° 31′, E. 34° 01′ | ..... | ..... | 29.80‡ | 756.9‡ | 70 | 21.1 | ..... | Calm | ..... | ..... | 0 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | | | | | | | | | | | | | | | | | | | Mr. Ansart. |
| San José | 26.27 | 667.2 | 29.99 | 761.7 | 65.3 | 18.5 | 84 | SE | | | 1 | 2c;ks | | | | Inap. | Inap. | | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.99 | 761.8 | 30.04 | 763.0 | 33.4 | 0.8 | 85 | WNW | | | 2 | | 10 | | | | | | |
| Fanöe | 30.05 | 763.2 | 30.07 | 763.7 | 33.6 | 0.9 | 79 | SW | | | 2 | | 10 | | | | | | |
| Godthaab, (Greenland) | 29.85 | 758.3 | 29.90 | 759.4 | 23.4 | — 4.8 | 90 | WSW | | | 4 | | 10 | | | | | | Snowing. |
| Stykkisholm, (Iceland) | | | | | | | | | | | | | | | | | | | |
| Thorshavn, (Faröe) | 29.96 | 760.9 | 29.99 | 761.8 | 37.0 | 2.8 | 60 | E | | | 4 | | 10 | | | | | | |
| Vestervig | 29.87 | 758.8 | 30.04 | 763.1 | 34.6 | 1.4 | 93 | W | | | 4 | | 8 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.37 | 746.1 | 29.93 | 760.1 | 51.1 | 10.6 | 84 | E | | | 1 | | 2 | S | S | 0 | 0 | Slightly cld'y | Collignon, Director. |
| Amiens, Normal School | 29.68 | 753.9 | 29.79 | 756.7 | 45.7 | 7.6 | 79 | NE | | | 1 | | 0 | | | 0 | 0 | Clear | Bouvallet, Director. |
| Avignon, Normal School | 29.93 | 760.1 | 30.00 | 762.1 | 62.2 | 16.8 | 63 | N | | | 1 | | 5 | | SE | 0 | 0 | Cloudy | M. Giraud, Director. |
| Bar-sur-Seine | 29.38 | 746.2 | 29.93 | 760.1 | 60.6 | 15.9 | 32 | S | | | 1 | | 2c | | S | 0 | 0 | Slightly cl'dy | C. Saillard, Director. |
| Beauvais, Normal School | 29.63 | 752.6 | 29.91 | 759.8 | 57.7 | 14.3 | 52 | SE | | | 1 | | 2 | | | 0 | 0 | Slightly cl'dy | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.08 | 738.7 | 29.98 | 761.4 | 55.4 | 13 | 58 | N | | | 1 | | 0 | | | 0 | 0 | Clear | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.05 | 737.9 | 29.96 | 761.1 | 58.6 | 14.8 | 48 | S | | | 1 | | 2c | S | S | 0 | 0 | Slightly cl'dy | M. Marlot, Director. |
| Bourges, Normal School | 29.34 | 745.1 | 29.90 | 759.0 | 59.7 | 15.4 | 50 | E | | | 2 | | 0 | | | 0 | 0 | Clear | A. Waquet, Director. |
| Brest, Naval Observatory | 29.51 | 749.6 | 29.76 | 755.8 | 62.6 | 17.0 | 70 | SW | | | 1 | | 7 | | SW | 0.020 | 0.50 | | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.51 | 749.5 | 29.92 | 759.9 | 59.7 | 15.4 | 64 | E | | | 3 | | 2 | NE | E | 0 | 0 | Slightly cl'dy | September, Director. |
| Caen, Normal School | 29.76 | 756.0 | 29.84 | 758.0 | 57.2 | 14 | 67 | NNE | | | 2 | | 2 | | SSW | 0 | 0 | Fair | M. Lair, Director. |
| Chartres, Normal School | 29.27 | 743.5 | 29.83 | 757.7 | 63.3 | 17.4 | 92 | E | | | 2 | | 0 | | | 0 | 0 | Clear | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.67 | 753.6 | 29.98 | 761.6 | 58.5 | 14.7 | 68 | ESE | | | 3 | | 0 | | | | | Clear | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.62 | 724.4 | 29.85 | 758.1 | 62.6 | 17.0 | 28 | SE | | | 2 | | 0 | | | 0 | 0 | | Alluard, Director. |
| Commercy, Normal School | 29.12 | 739.7 | 30.00 | 761.9 | 47.5 | 8.6 | 70 | E | | | 1 | | 0 | | | 0 | 0 | Clear | Dr. Coulet, Director. |
| Commune de Gréasque* | 28.84 | 732.6 | 30.02 | 762.6 | 62.6 | 17.0 | 46 | SE | | | 3 | | 8 | | SE | 0 | 0 | ¾ covered | M. Kina, Director. |
| Grenoble, Normal School | 29.19 | 741.5 | 29.95 | 760.8 | 59.0 | 15.0 | 47 | NNW | | | 1 | | 1k | | | 0 | 0 | | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.67 | 753.8 | 29.89 | 759.2 | 54.3 | 12.4 | 76 | NW | | | 1 | | 0 | | | 0 | 0 | Clear | Mouillot, Director. |
| Le Mans, Normal School | 29.58 | 751.3 | 29.88 | 759.0 | 60.3 | 15.7 | 55 | S | | | 3 | | 8 | | S | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.02 | 737.0 | 29.94 | 760.5 | 57.9 | 14.4 | 50 | NW | | | 1 | | 0 | | | 0 | 0 | Clear | Baudry, Director. |
| Lorient, Naval Observatory | 29.73 | 755.2 | 29.83 | 757.6 | 57.2 | 14.0 | 80 | SE | | | 1 | | | | S | 0.028 | 0.7 | | Lt T. Carré, Director. |
| Mâcon, Normal School | | | | | | | | | | | | | | | | | | | M. Galzin, Director |
| Mirecourt, Normal School | 28.95 | 735.2 | 30.04 | 763.1 | 48.4 | 9.1 | 83 | NW | | | 1 | | k | | SE | 0 | 0 | | M. Barbier, Director. |
| Nismes, Normal School | 29.78 | 756.4 | 29.98 | 761.5 | 62.6 | 17 | 55 | SW | | | 1 | | 5 | | S | 0 | 0 | Cloudy | Boyer, Director. |
| Privas, Normal School | 28.89 | 733.7 | 29.94 | 760.6 | 59.0 | 15 | 58 | N | | | 1 | | n | N | N | 0 | 0 | | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 25.05 | 636.2 | | | 40.6 | 4.8 | 60 | S | | | 2 | | 2 | | | 0 | 0 | Slightly cl'dy | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.82 | 757.5 | 29.85 | 758.3 | 63.3 | 17.4 | 57 | SSE | | | 1 | | 0 | | | 0 | 0 | Clear | Lt. Decante, Director. |
| Rouen, Normal School | 29.79 | 756.6 | 29.87 | 758.8 | 61.7 | 16.5 | 48 | SSE | | | 1 | | 0 | | | 0 | 0 | Clear | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.78 | 756.3 | 29.81 | 757.1 | 57.7 | 14.3 | 64 | WNW | | | 1 | | 8 | WNW | WNW | 0.124 | 3.14 | Very cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.74 | 755.5 | 29.91 | 759.7 | 63.1 | 17.3 | 37 | S | | | 1-2 | | | WSW | SSW | 0 | 0 | | E. Renou, Director. |
| Tarbes, Normal School | 28.91 | 734.3 | 29.96 | 760.9 | 64.4 | 18 | 44 | W | | | 4 | | 0 | | | 0 | 0 | Clear | T. Huguet, Director. |
| Versailles Observatory | 29.40 | 746.7 | 29.89 | 759.2 | 61.3 | 16.3 | | S | | | 3 | | 0 | | | 0 | 0 | Very fine | Dr. A. Rérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.26 | 743.3 | 29.98 | 761.5 | 60.8 | 16 | 79 | N | | | 1 | | 0 | | | 0 | 0 | Clear | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.96 | 761.0 | 29.99 | 761.7 | 75.9 | 24.4 | | | | | | | | | | 0.04 | 1. | | L'Abbé Marcl ésl. |
| Lyons Obs'y, (Park Station) | 29.34 | 745.1 | 29.94 | 760.4 | 63.3 | 17.4 | 35 | SSE | | | 2 | | 1 | | SSE | 0 | 0 | Clear | Mr. Jays. |
| Marseilles, Observatory | | | | | | | | | | | | | | | | | | | The Staff. |
| Mont-Louis | 24.70 | 627.4 | 30.02 | 762.4 | 44.5 | 7.0 | 70 | E | 15.0 | 6.7 | | | 3 | | NE | 0.059 | 1.5 | | M. Cave. |
| Nice | | | 30.06 | 763.4 | 59.4 | 15.2 | 68 | E | | | 4 | | 2 | | | 0 | 0 | Slightly cov. | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.62 | 752.4 | | | 63.3 | 17.4 | 38 | SE | | | 2 | | 1 | | | 0 | 0 | | Marié Davy, Director. |
| Perpignan | 29.84 | 758.0 | 29.95 | 760.7 | 56.7 | 13.7 | 72 | SE | 18.6 | 8.3 | | | 6 | | SE | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.31 | 566.6 | | | 30.2 | — 1.0 | | S | | | 2 | | 4 | | | 0 | 0 | Fair | Gen'l de Nansouty. |
| Toulouse, Observatory | 29.16 | 740.6 | 29.88 | 758.9 | 57.9 | 14.4 | 69 | SSE | | | 6 | | 1 | | | 0 | 0 | | M. Mercadier Juller. |
| Tours | 29.74 | 755.5 | 29.86 | 758.5 | 61.0 | 16.1 | 50 | SE | | | 2 | | 0 | | | 0 | 0 | Clear | Cousin-Marquete. |
| Zi-Ka-Wei, (near Shanghai) | 30.22 | 767.5 | 30.24 | 768.2 | 41.2 | 5.1 | 75 | N | 6.0 | 2.7 | | | 7 | | | 0 | 0 | Cloudy | Marc Dechevrens. |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Greasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.22 | 742.3 | 30.07 | 763.8 | 38.5 | 3.6 | 63 | SW | | | 2 | | 2 | W | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 30.00 | 761.9 | 30.17 | 766.4 | 39.2 | 4.0 | 63 | SW | | | 2 | | 4 | | | 0.016 | 0.4 | | Prof. Arndt. |
| Breslau | 29.65 | 753.1 | 30.19 | 766.7 | 33.6 | 0.9 | 82 | NNW | | | 2 | | 8 | | | 0.164 | 4.17 | | Royal University Obs'y |
| Carlsruhe | 29.60 | 751.8 | 30.03 | 762.8 | 46.0 | 7.8 | 72 | NE | | | 1 | | 0 | | | 0 | 0 | | Albert Senz. |
| Cassel | 29.45 | 748.0 | 30.06 | 763.5 | 42.1 | 5.6 | 63 | S | | | 3 | | 0 | SE | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.85 | 758.2 | 30.01 | 762.3 | 46.4 | 8.0 | 56 | S | | | 4 | | 7 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.71 | 754.7 | 30.09 | 764.2 | 46.0 | 7.8 | | SE | | | 2 | | 2 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.56 | 725.5 | 30.02 | 762.4 | 47.5 | 8.6 | 77 | N | | | 4 | | 0 | | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 30.04 | 763.1 | 30.12 | 765.0 | 35.4 | 1.9 | 69 | SE | | | 3 | | 10cs | | | 0 | 0 | | Captain F. Hegemann. |
| Kiel | 30.09 | 764.2 | 30.10 | 764.6 | 35.1 | 1.7 | 65 | SW | | | 1 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.91 | 759.8 | 30.00 | 762.0 | 32.4 | 0.2 | 78 | W | | | 5 | | 10 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 30.04 | 763.1 | 30.0 | — 1.1 | | W | | | 2 | | 1 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.57 | 751.0 | 30.00 | 762.1 | 35.4 | 1.9 | 66 | SE | | | 1 | | 10 | | | 0.035 | 0.9 | | Prof. Bruhns, Privy Councelor. |
| Memel, Naval School | 29.89 | 759.1 | 29.93 | 760.3 | 36.7 | 2.6 | 72 | W | | | 4 | | 7s | | | | | | Skalweit. |
| Neufahrwasser | 30.02 | 762.4 | 30.03 | 762.8 | 36.0 | 2.2 | 65 | W | | | 5 | | 4 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.88 | 758.9 | 30.19 | 766.7 | 30.9 | — 0.6 | 72 | NW | | | 5 | | 1 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.50 | 749.4 | 30.07 | 763.8 | 41.5 | 5.3 | 78 | ENE | | | 1 | | 4 | | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 29.07 | 738.4 | 30.03 | 762.7 | 46.4 | 8.0 | 69 | N | | | 1 | | 0 | | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | | | | | | | | | | | | | | | | | | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.53 | 724.7 | 30.08 | 764.0 | 41.4 | 5.2 | 72 | W | 7 | 3 | | | 0 | | | 0 | 0 | | Dr. Van Bebber. |
| Wustrow, Naval School | 30.08 | 764.1 | 30.11 | 764.7 | 32.0 | 0.0 | 100 | WSW | | | 4 | | 8s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.66 | 753.4 | 30.06 | 763.4 | 59.9 | 15.5 | | SW | | | 1.5 | | | | | | | ½ Clear | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.90 | 759.4 | 29.95 | 760.8 | 75.0 | 23.9 | 51 | WSW | 20 | 8.9 | | | 1 | | | 0 | 0 | D. clouds | |
| Deesa | 29.42 | 747.3 | 29.90 | 759.3 | 82.7 | 28.2 | 14 | NW | 8.0 | 3.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.85 | 758.2 | 29.89 | 759.1 | 83.5 | 28.6 | 38 | NNW | 22 | 9.8 | | | 10 | N | WNW | 0 | 0 | Overcast | |
| Lahore | 29.18 | 741.0 | 29.94 | 760.4 | 70.5 | 21.4 | 43 | Calm | 1.9 | 0.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.32 | 693.8 | 29.80 | 756.8 | 87.2 | 30.7 | 38 | W | 18 | 8.0 | | | 9 | | | 0 | 0 | D. clouds | |
| Roorkee | 28.97 | 735.8 | 29.88 | 759.0 | 70.8 | 21.6 | 29 | NW | 3.1 | 1.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Agra | 29.34 | 745.1 | 29.90 | 759.5 | 79.7 | 26.5 | 29 | W | | | | | 5 | | W | 0 | 0 | | |
| Nagpur | 28.78 | 731.0 | 29.82 | 757.3 | 84.6 | 29.2 | 22 | Calm | 3.2 | 1.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.48 | 748.8 | 29.86 | 758.5 | 75.3 | 24.1 | 37 | NW | 2.4 | 1.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.56 | 750.8 | 29.88 | 758.8 | 79.1 | 26.2 | 27 | NW | 5.0 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.65 | 753.0 | 29.83 | 757.6 | 79.3 | 26.3 | 28 | W | 2.8 | 1.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.86 | 707.5 | 29.87 | 758.8 | 77.0 | 25.0 | 14 | WNW | 7.2 | 3.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.78 | 756.3 | 29.86 | 758.3 | 83.5 | 28.6 | 28 | SE | 3.2 | 1.4 | | | | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.81 | 757.3 | 29.84 | 757.8 | 81.7 | 27.6 | 37 | WNW | 2.0 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.37 | 745.9 | 29.76 | 755.8 | 77.3 | 25.2 | 19 | W | 5.8 | 2.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.77 | 756.1 | 29.86 | 758.4 | 82.2 | 27.9 | 46 | Calm | 4.2 | 1.9 | | | 1 | | | 0 | 0 | Misty | |
| Sibsagar | 29.42 | 747.2 | 29.76 | 755.8 | 70.2 | 21.2 | 73 | ENE | 4.3 | 1.9 | | | 6 | SW | SW | 0 | 0 | D. clouds | |
| Jubbulpore | 28.49 | 723.8 | 29.86 | 758.4 | 82.1 | 27.8 | 25 | Calm | 3.7 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,861 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.68 | 753.9 | 30.10 | 764.5 | 53.6 | 12.0 | 58 | W | 1.8 | 0.6 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.54 | 750.4 | 30.07 | 763.8 | 57.2 | 14.0 | 52 | E | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.98 | 761.6 | 30.10 | 764.4 | 54.8 | 12.4 | 67 | S | 1.8 | 0.8 | ..... | ..... | 9 | W | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 29.15 | 740 3 | 30.06 | 763.5 | 55.6 | 13.1 | 51 | SSE | 3.1 | 1.4 | ..... | ..... | 1 | NNW | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.77 | 756.2 | 30.08 | 764.1 | 58.6 | 14.7 | 59 | SW | 1.8 | 0.8 | ..... | ..... | 10 | S | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 28.12 | 714.3 | 30.06 | 763.4 | 54.1 | 12.3 | 51 | SE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 30.03 | 762.7 | 30.08 | 764.0 | 53.6 | 12.0 | 88 | N | 10.5 | 4.7 | ..... | ..... | 4 | SW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.81 | 757.1 | 30.07 | 763.7 | 61.9 | 16.6 | 47 | SE | ..... | ..... | 2 | ..... | 10 | SW | ..... | 0.083 | 2.1 | ..... | Cav. F. Meucci |
| Leghorn | 29.97 | 761.1 | 30.05 | 763.2 | 59.7 | 15.4 | 66 | ENE | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 29.90 | 759.4 | 30.08 | 763.9 | 60.1 | 15.6 | 66 | S | 1.8 | 0.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.84 | 757.9 | 30.10 | 764.4 | 59.9 | 15.5 | 45 | ENE | 3.1 | 1.4 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.17 | 741.0 | 30.07 | 763.8 | 62.1 | 16.7 | 77 | NW | 1.3 | 0.6 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.74 | 755.4 | 29.93 | 760.3 | 61.3 | 16.3 | 70 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0.059 | 1.5 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.82 | 757.4 | 30.08 | 763.9 | 59.5 | 15.3 | 72 | NE | 6.3 | 2.8 | ..... | ..... | 10 | NNE | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 30.02 | 762.4 | 30.09 | 764.2 | 58.5 | 14.7 | 81 | S | 6.3 | 2.8 | ..... | ..... | 9 | SSE | ..... | 0.079 | 2.0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.56 | 750.7 | 30.11 | 764.8 | 60.6 | 15.9 | 66 | WSW | 1.8 | 0.8 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.05 | 763.3 | 30.07 | 763.8 | 42.5 | 5.8 | 68 | NNE | 10.1 | 4.5 | ..... | ..... | 1ck | ..... | ..... | 0 | 0 | Clear | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.86 | 758.4 | 30.07 | 763.8 | 45 1 | 7.3 | 64 | N | 8.1 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0.010 | 0.25 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.91 | 759.7 | 29.98 | 761.5 | 42.1 | 5.6 | 86 | ENE | 5.4 | 2.4 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Raining | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | | | | | | | | | | | | | | | | | | | P. Ceballos. |
| Guadalajara | 25.05 | 636.3 | 30.14 | 765.6 | 43.7 | 6.5 | 45 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. L. Perez. |
| Leon | 24.43 | 620.7 | 30.15 | 765.5 | 55.9 | 13.3 | 64 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.06 | 585.6 | 30.13 | 765.3 | 49.6 | 9.8 | 58 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 46.0 | 7.8 | 57 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | M. V. de Leon, M. E. |
| Tlacotalpam | 30.01 | 762.2 | 30.02 | 762.5 | 75.2 | 24 | 81 | N | ..... | ..... | 3 | 10 | 0 | N | ..... | 0 | 0 | Threatening | M. M. Cházaro. |
| San Luis Potosi | 24.17 | 613.1 | 30.14 | 765.6 | 55.0 | 12.8 | 77 | E | ..... | ..... | 1 | ..... | 10 | ..... | S | 0 | 0 | Covered | G. Barroeta, M. D. |
| Vera-Cruz | | | | | | | | | | | | | | | | | | | Prof. J. Rossell. |
| Zacatecas | | | | | | | | | | | | | | | | | | | |
| Puebla, (Catholic Institute) | 23.40 | 594.3 | 30.16 | 766.1 | 45.7 | 7.6 | 45 | NNW | 4.5 | 2.0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Prof. P. Spina. |
| Durango | | | | | | | | | | | | | | | | | | | M. V. de Leon, C. E. |
| Colima | 28.35 | 720.0 | 30.00 | 762.0 | 73.4 | 23 0 | 62 | NE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | | | | | | | | | | | | | | | | | | | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,893 m., or 6,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,201m., or 7,220.9 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | | | | | | | | | | | | | | | | | | | |
| Groningen | 29.97 | 761.2 | 29.97 | 761.2 | 43.5 | 6.4 | ..... | ESE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.99 | 761.8 | 30.05 | 763.2 | 36.5 | 2.5 | ..... | S | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.063 | 1.6 | ..... | |
| Hellevoetsluis | 29.97 | 761.3 | 29.97 | 761.3 | 40.3 | 4.6 | ..... | ESE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Utrecht | 29.97 | 761.2 | 29.97 | 761.2 | 44.1 | 6.7 | 74 | E | ..... | ..... | 2 | ..... | ..... | ..... | ..... | | | | |
| | 29.96 | 761.0 | 30.01 | 762.2 | 44.2 | 6.8 | 62 | NNE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | Slightly cl'dy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer: Corrected for instrumental error and temperature. Inches. | Barometer: Corrected for instrumental error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.92 | 759.9 | 29.97 | 761.3 | 35.6 | 2.0 | 51 | NNW | 4.3 | 1.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.69 | 754.1 | 29.73 | 755.1 | 32.7 | 0.4 | 92 | WNW | 22 | 10 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.75 | 755.7 | 29 90 | 759.5 | 39.0 | 3.9 | 47 | SW | 0 | 0 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.47 | 748.5 | 29.61 | 749.6 | 25.5 | 3.6 | 82 | SW | 4 | 2 | ..... | ..... | 1 | ..... | ..... | 0.150 | 3.8 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.04 | 763.1 | 30.24 | 768.0 | 57.9 | 14.4 | 82 | WNW | 6.3 | 2.8 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.68 | 728.4 | 29.72 | 755.0 | 50.9 | 10.5 | 84 | NNE | 8.1 | 1.4 | ..... | ..... | 10 | ..... | ..... | 0.067 | 1.7 | Light rain... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 29.76 | 756.0 | 29.85 | 758.2 | 59.2 | 15.1 | 69 | SW | 15.0 | 6.7 | ..... | ..... | 8 | ..... | ..... | 0.921 | 23.4 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.34 | 745.3 | 29.71 | 754.5 | 53.8 | 12.1 | 86 | ENE | 8.7 | 3.9 | ..... | ..... | 10 | ..... | ..... | 0.055 | 1.4 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.16 | 766.0 | 30.23 | 767.8 | 62.2 | 16.8 | 68 | N | 19.9 | 8.9 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Sea or swell: Height scale 0-9 | Sea or swell: Direction from— | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | ..... | ..... | 29.91 | 759.8 | 85.1 | 29.5 | ..... | SW | ..... | ..... | 2 | ..... | 2 | ..... | SW | 2 | SW | D. clouds.... | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto de S. Jose de Bissao, Senegambia | ..... | ..... | 29.97 | 761.3 | 78.8 | 26 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | ..... | Blue sky..... | A. Ferreira, 2d Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | 29.80 | 756.9 | 79.7 | 26.5 | ..... | WSW | ..... | ..... | 2 | ..... | 10 | ..... | WSW | ..... | ..... | Raining..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 30.07 | 763.8 | 66.4 | 19.1 | ..... | ENE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 1 | ..... | Blue sky..... | J. M. F. Guimaraes, Com'd't. |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.67 | 753.5 | 30.11 | 764.7 | 30.9 | — 0.6 | 68 | WSW | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.51 | 749.6 | 29.95 | 760.7 | 30.0 | — 1.1 | 62 | SW | 4 | 2 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.50 | 749.3 | 29.75 | 755.7 | 32.5 | 0.3 | 89 | WSW | 7 | 3 | ..... | ..... | 8n;k | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.60 | 751 7 | 29.61 | 752.1 | 30.9 | — 0.6 | 83 | SW | 9 | 4 | ..... | ..... | 9n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.34 | 745.2 | 30.00 | 762.1 | 30.9 | — 0.6 | 85 | SE | 7 | 3 | ..... | ..... | 10ks;s;n | ..... | ..... | ..... | ..... | Light snow.. | Physical Cabinet. |
| Nikolaiev | 29.90 | 759.4 | 29.97 | 761.2 | 50.2 | 10.1 | 63 | NE | 13 | 6 | ..... | ..... | 1s | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.01 | 762.2 | 30.03 | 762.7 | 49.8 | 9.9 | 75 | S | 11 | 5 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.42 | 747.3 | 30.01 | 762.2 | 21.2 | — 6.0 | 61 | S | 9 | 4 | ..... | ..... | 2ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.74 | 755.4 | 29.96 | 760.9 | 27.7 | — 2.4 | 81 | N | 9 | 4 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.78 | 756.5 | 29.80 | 757.0 | 13.6 | —10.2 | 90 | E | 4 | 2 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | Capt. Sselliwerstow. |
| Tiflis | 28.69 | 728.8 | 30.12 | 765.1 | 53.4 | 11.9 | 36 | NW | 13 | 6 | ..... | ..... | 2c | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.20 | 767.0 | 30.11 | 764.9 | 48.4 | 9.1 | 50 | SW | 9 | 4 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.45 | 748.1 | 29.96 | 760.9 | 23.5 | — 4.7 | 65 | WNW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light snow.. | Cand. Fatjanow. |
| Kasan | 29.64 | 752.9 | 29.93 | 760.1 | 19.9 | — 6.7 | 60 | SW | 4 | 2 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 28.80 | 731.6 | 29.82 | 757.3 | 20.3 | — 6.5 | 68 | W | 45 | 20 | ..... | ..... | 7ck | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 30.11 | 764.7 | 30.35 | 770.8 | 47.7 | 8.7 | 6 | E | 22 | 10 | ..... | ..... | 2c | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.74 | 730.1 | 30.51 | 774.9 | 45.5 | 7.5 | 73 | SE | 13 | 6 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Teich, A. M. |
| Barnaul | 29.84 | 757.8 | 30.36 | 771.2 | 29.3 | — 1.5 | 94 | SW | 6 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.95 | 760.8 | 30.25 | 768.4 | 36.9 | 2.7 | 47 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 30.20 | 767.1 | 30.34 | 770.7 | 38.5 | 3.6 | 38 | NW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.98 | 761.5 | 30.06 | 764.0 | 24.3 | 4.3 | 75 | Calm | 0 | ..... | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | 29.61 | 752.0 | 29.69 | 754.2 | 19.4 | 7.0 | 62 | Calm | 0 | ..... | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455 m., or 1,492.7 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165.2 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.79 | 756.6 | 29.90 | 759.4 | 55.4 | 13 | 73 | ENE | 8.8 | 3.95 | ..... | ..... | 5k;ks | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 29.74 | 755.3 | 29.79 | 756.7 | 65.7 | 18.7 | 60 | SE | 4.4 | 1.95 | ..... | 3 | 2 | S | ..... | 0 | 0 | Cloudy..... | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.09 | 688.1 | ..... | ..... | 51.8 | 11.0 | 77 | NE | 4.0 | 1.78 | ..... | 0 | 8 | ..... | ..... | 0 | 0 | Cloudy..... | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.52 | 699.0 | ..... | ..... | 52.2 | 11.2 | 68 | E | 10.4 | 4.66 | ..... | 0 | 10 | ..... | ..... | ..... | ..... | Raining ..... | The Staff. |
| Murcia, Met. Obs'y | 29.56 | 750.9 | 29.72 | 754.8 | 59.9 | 15.5 | 78 | E | 6.3 | 2.83 | ..... | 4 | 6 | NE | ..... | 0 | 0 | Covered..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.77 | 730.7 | 29.65 | 753.2 | 64.6 | 18.1 | 43 | SE | 0 | 0 | ..... | 0 | 3 | ..... | ..... | 0 | 0 | Light clouds | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.91 | 759.6 | 29.97 | 761.3 | 74.5 | 23.8 | 86 | E | 5.4 | 2.4 | ..... | 10cp | 2k | ..... | ..... | 0 | 0 | Cloudy..... | Benito Vines, S. J. |
| Manilla, Philippine Islands. | 29.78 | 756.4 | 29.83 | 757.7 | 85.0 | 29.7 | 79 | SSW | 11.2 | 5.0 | ..... | 3kn | 3kn | E | E | 0 | 0 | Covered..... | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.56 | 750 6 | 29.66 | 753.3 | 53.8 | 12.1 | 88 | SSW | 8.6 | 3.9 | ..... | 0 | 10 | ..... | SW | 0.730 | 18.5 | Raining..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I. | 29.97 | 761.3 | 30.06 | 763.6 | 75.6 | 24.2 | 86 | S | 0 | 0 | ..... | 0 | 1k | ..... | S | 0 | 0 | Clear..... | Leonardo de Tejeda, Ch'f Eng'r. |

Note.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. | | Barometer. Reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. Direction. | Wind. Velocity. | | Wind. Force. | Clouds. Amount. | | Clouds. Direction. | | Rain-fall or melted snow in the past 24 hours. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | Inches. | Millimeters. | | |
| Haparanda | 29.54 | 750.3 | 29.58 | 751.3 | 19.8 | — 6.8 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0.118 | 3.0 | ..... | |
| Umea | 29.56 | 750.7 | 29.61 | 752.0 | 33.4 | 0.8 | 96 | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0.051 | 1.3 | ..... | |
| Hernosand | 29.61 | 752.2 | 29.67 | 753.5 | 37.4 | 3.0 | 44 | WNW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.61 | 752.2 | 29.79 | 756.7 | 35.8 | 2.1 | 43 | S | ..... | ..... | 6 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.75 | 755.7 | 29.81 | 757.2 | 33.4 | 0.8 | 82 | W | ..... | ..... | 6 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.70 | 754.4 | 29.78 | 756.3 | 34.2 | 1.2 | 65 | NW | 7.4 | 3.3 | ..... | ..... | 7 | ..... | WNW | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.55 | 725.1 | 29.98 | 761.5 | 52.8 | 11.3 | 51 | N | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Zurich | 28.35 | 720.2 | 30.00 | 761.9 | 53.2 | 11.8 | 62 | NE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | Fair | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +0.5 mm.; Thermometer, +3.3 Cent.; Relative Humidity, —10 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.04 | 763.0 | 55.2 | 12.9 | 57 | S | 7 | 3.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.35 | 761.0 | 71 6 | 22.0 | ..... | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| Valona | ..... | ..... | 30.09 | 764.3 | 59.2 | 15.1 | ..... | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.78 | 756.4 | 29.89 | 759.3 | 70.0 | 21.1 | 70 | SW | ..... | ..... | 2 | 10cs | ..... | ..... | ..... | 0 | 0 | Overcast | Prof. C.V. A.Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.20 | 5.1 | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.70 | 754.4 | 30.02 | 762.5 | 21 | — 6.1 | ..... | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.20 | 5.1 | Clear | W. R. Bigg. |
| *Chatham, N B | 29.81 | 757.2 | 29.87 | 758.7 | 23 | — 5.0 | 93 | SW | 3 | 1.3 | ..... | ..... | 10ks | ..... | Calm | 0.64 | 16.3 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 29.77 | 756.1 | 29.81 | 757.2 | 38 | 3.3 | 99 | W | 7 | 3.1 | ..... | ..... | 10n | ..... | ..... | 1.00 | 25.4 | Light rain | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.85 | 758.2 | 30.06 | 763.5 | 13.0 | —10.6 | 93 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.35 | 8.9 | Clear | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 29.85 | 758.2 | 29.90 | 759.4 | 46.3 | 7.9 | 84 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. Bevis. |
| *Father Point, Quebec | 29.82 | 757.4 | 29.85 | 758.2 | 21 | — 6.1 | 96 | SW | 25 | 11.2 | ..... | 8k | 2ks | W | W | 0.40 | 10.2 | Clearing | J. McWilliams. |
| Fredericton, N. B | 29.87 | 758.7 | 29.94 | 760.5 | 22.0 | — 5.6 | 56 | NW | 10 | 4.5 | ..... | 0 | d | ..... | ..... | 0.10 | 2.5 | Clear | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.32 | 744.7 | 30.28 | 769.1 | —16 | —26.7 | 100 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Stewart. |
| Granton, Ontario | 28.91 | 734.3 | 30.10 | 764.5 | 15 | — 9.4 | ..... | SW | ..... | ..... | 1 | ..... | 10n | ..... | ..... | Inap. | Inap. | Overcast | James Grant. |
| *Halifax, N. S | 29.72 | 754.9 | 29.86 | 758.4 | 41 | 5.0 | 95 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 1.28 | 32.59 | Light rain | F. Allison, M. A. |
| Hamilton, Ontario | 29.73 | 755.1 | 30.13 | 765.3 | 16.3 | — 8.7 | 88 | SW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.73 | 755.1 | 30.09 | 764.3 | 14 | —10.0 | 87 | W | 5 | 2.2 | ..... | 5ck | 2s | W | W | 0.17 | 4.3 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.84 | 757.9 | 29.89 | 759.2 | 39.2 | 4.0 | 98 | S | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0.12 | 3.0 | Raining | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 29.83 | 757.7 | 30.05 | 763.3 | 16 | — 8.9 | 83 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.65 | 16.5 | Clear | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.36 | 745.7 | 30.14 | 765.5 | — 2 | —18.9 | 60 | Calm | 0 | 0 | ..... | 2ck | 0 | W | ..... | 0.03 | 0.8 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 29.20 | 744.0 | 30.11 | 764.8 | 14.7 | — 9.6 | 56 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Fine | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.38 | 746.2 | 30.13 | 765.3 | 16 | — 8.9 | 83 | W | 2 | 0.9 | ..... | 2ck | ..... | W | ..... | 0.02 | 0.5 | Fair | H. Morgan. |
| Port Hastings, N. S | 29.84 | 757.6 | 29.89 | 759.2 | 41.5 | 5.3 | ..... | S | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0.40 | 10.2 | Cloudy | Peter Grant. |
| Port Stanley, Ontario | 29.41 | 747.0 | 30.10 | 764.5 | 21 | — 6.1 | 92 | W | 13 | 5.8 | ..... | ..... | 8ks | ..... | SW | 0.04 | 1.0 | Cloudy | M. Payne. |
| *Quebec, Quebec | 29.65 | 753.1 | 29.99 | 761.7 | 13 | —10.6 | 81 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.18 | 4.6 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.58 | 751.3 | 30.10 | 764.5 | — 7 | —21.7 | 80 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. McIntyre. |
| St. Andrews, N. B | 29.87 | 758.7 | 29.92 | 760.0 | 25 | — 3.9 | 85 | NW | ..... | ..... | 1 | 2k | 2ks | W | ..... | 0.82 | 20.8 | Fair | Dr. Gove. |
| St. John, N. B | 29.74 | 755.4 | 29.91 | 759.7 | 27 | — 2.8 | 88 | N | 11 | 4.9 | ..... | ..... | 10n | ..... | ..... | 0.17 | 4.3 | Light snow | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.38 | 746.2 | 30.16 | 766.1 | 12 | —11.1 | 80 | NE | 11 | 4.9 | ..... | 8k | 0 | W | ..... | 0.23 | 5.8 | Light snow | K. Stewart. |
| Stayner, Ontario | 29.26 | 743.2 | 30.11 | 764.8 | 11 | —11.7 | 77 | N | 4 | 1.8 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | R. J. Cole. |
| Stratford, Ontario | 28.70 | 729.0 | 30.09 | 764.3 | 12.8 | —10.7 | 92 | SW | 4.0 | 1.8 | ..... | 3c;cs | 3s | W | ..... | 0 | 0 | Fair | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.87 | 758.7 | 29.91 | 759.7 | 42 | 5.6 | 97 | SW | 18 | 8.0 | ..... | ..... | 10n | ..... | ..... | 0.79 | 20.1 | Light rain | T. C. Hill. |
| *Toronto, Ontario | 29.71 | 754.6 | 30.12 | 765.0 | 15 | — 9.4 | 73 | NW | 5 | 2.2 | ..... | 2cs | 0 | W | ..... | 0.02 | 0.5 | Clear | Magnetic Observatory. |
| Windsor, N. S | 29.74 | 755.4 | 29.84 | 757.9 | 41.0 | 5.0 | 60 | ..... | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 2.17 | 55.1 | Raining | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 32.5 | 0.3 | 100 | S | ..... | ..... | ..... | 10c;s | 10s | ..... | ..... | 0 | 0 | Cloudy | John Delahy. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrumental error and temperature. Inches. | BAROMETER. Corrected for instrumental error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.88 | 758.9 | 30.13 | 765.3 | 18 | — 7.8 | 84 | Calm | 0 | 0 | ..... | 0 | 8ks | ..... | NW | 0.56 | 14.2 | Fair | |
| Alpena, Michigan | 29.41 | 747.0 | 30.12 | 765.0 | 5 | —15.0 | 75 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | W | 0.02 | 0.5 | Fair | |
| Atlanta, Georgia | 28 86 | 733.0 | 30.05 | 763.3 | 33 | 0.6 | 69 | NW | 16 | 6.7 | ..... | 2c | 0 | NW | ..... | 0.23 | 5.8 | Clear | |
| Atlantic City, New Jersey | 30.14 | 765.5 | 30.15 | 765.8 | 28 | — 2.2 | 66 | N | 12 | 5.4 | ..... | 5c | 0 | W | ..... | 0.14 | 3.6 | Fair | |
| Augusta, Georgia | 29.85 | 758.2 | 30.03 | 762.8 | 47 | 8.3 | 70 | NE | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0.41 | 10.4 | Clear | |
| Baltimore, Maryland | 30.15 | 765.8 | 30.20 | 767.1 | 32 | 0.0 | 59 | N | 5 | 2.2 | ..... | 0 | Haze | ..... | Calm | 0.08 | 2.0 | Clear | |
| Barnegat, New Jersey | 30.10 | 764.5 | 30.12 | 765.0 | 27 | — 2.8 | 76 | N | 18 | 8.0 | ..... | 5ck | 2s | SW | N | 0.30 | 7.6 | Fair | |
| Bismarck, Dakota | 28.38 | 720.8 | 30.24 | 768.1 | — 6 | —21.1 | 100 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boerne, Texas | 28.67 | 728.2 | 30.02 | 762.5 | 36 | 2.2 | 61 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boise City, Idaho | 27.11 | 688.6 | 30.07 | 763.8 | 38 | 3.3 | 72 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boston, Massachusetts | 29.89 | 759.2 | 30.06 | 763.5 | 23 | — 5.0 | 73 | NW | 11 | 4.9 | ..... | 5ck | 2s | SW | Calm | 0.29 | 7.4 | Fair | |
| Brackettville, Texas | 29.00 | 736.6 | 30.07 | 763.8 | 40 | 4.4 | 65 | E | 2 | 0.9 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Breckenridge, Minnesota | 29.15 | 740.4 | 30.29 | 769.4 | — 3 | —19.4 | 85 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Brownsville, Texas | 30.05 | 763.3 | 30.10 | 764.5 | 44 | 6.7 | 92 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.17 | 4.3 | Clear | |
| Buffalo, New York | 29.37 | 746.0 | 30.13 | 765.3 | 14 | —10.0 | 82 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 49 | 9.4 | 24 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.77 | 756.1 | 30.08 | 764.0 | 16 | — 8.9 | 66 | S | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0.20 | 5.1 | Clear | |
| Cairo, Illinois | 29.91 | 759.7 | 30.33 | 770.4 | 28 | — 2.2 | 77 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.16 | 639.0 | 29.96 | 761.0 | 45 | 7.2 | 46 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 40 | 4.4 | 31 | S | ..... | ..... | 1 | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Campo, California | 27.44 | 697.0 | 30.01 | 762.2 | 37 | 2.8 | 90 | SW | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Cape Hatteras, N. Carolina | 30.03 | 762.8 | 30.04 | 763.0 | 42 | 5.6 | 100 | NE | 24 | 10.7 | ..... | ..... | 10n | ..... | NE | 0.82 | 20.8 | Light rain | |
| Cape Henry, Virginia | 30.12 | 765.0 | 30.14 | 765.5 | 37 | 2.8 | 71 | N | 28 | 12.5 | ..... | ..... | 10s | ..... | N | 1.06 | 26.9 | Cloudy | |
| Cape Lookout, N. Carolina | 29.98 | 761.5 | 30.00 | 762.2 | 44 | 6.7 | 92 | NE | 42 | 18.8 | ..... | ..... | 10n | ..... | NE | 0.55 | 14.0 | Light rain | |
| Cape May, New Jersey | 30.11 | 764.8 | 30.14 | 765.5 | 32 | 0.0 | 49 | N | 20 | 8.9 | ..... | ..... | 10s | ..... | NW | 0.49 | 12.4 | Cloudy | |
| Castroville, Texas | 29.36 | 745.7 | 30.09 | 764.3 | 42 | 5.6 | 58 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 29.89 | 759.2 | 29.94 | 760.5 | 50 | 10.0 | 86 | N | 16 | 7.2 | ..... | ..... | 10n | ..... | Calm | 0.50 | 12.7 | Light rain | |
| Cheyenne, Wyoming | 24.06 | 611.1 | 30.00 | 762.0 | 9 | —12.8 | 78 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Chicago, Illinois | 29.42 | 747.2 | 30.17 | 766.3 | 20 | — 6.7 | 85 | SW | 5 | 2.2 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cincinnati, Ohio | 29.58 | 751.3 | 30.28 | 769 1 | 20 | — 6.7 | 70 | W | 3 | 1.3 | ..... | 0 | Sm'e | ..... | W | Inap. | Inap. | Clear | |
| Cleveland, Ohio | 29.32 | 744.7 | 30.09 | 764.3 | 18 | — 7.8 | 53 | S | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Coleman City, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Columbus, Ohio | 29.32 | 744.7 | 30.23 | 767.8 | 17 | — 8.3 | 67 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Conroe, Texas | 28.20 | 716.3 | 29.97 | 761.2 | 31 | — 0.6 | 68 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.71 | 754.6 | 30.21 | 767.3 | 35 | 1.7 | 70 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.52 | 749.8 | 30.21 | 767.3 | 18 | — 7.8 | 84 | W | 8 | 3.6 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Deadwood, Dakota | 25.44 | 646.2 | ..... | ..... | 7 | —13.9 | 77 | SW | 3 | 1.3 | ..... | 2k | 0 | SW | ..... | 0 | 0 | Fair | |
| Decatur, Texas | 29.03 | 737.3 | 30.26 | 768.6 | 35 | 1.7 | 53 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.40 | 746.7 | 30.24 | 768.1 | 34 | 1.1 | 70 | NE | 3 | 1.3 | ..... | 2k | 2s | W | W | 0 | 0 | Fair | |
| Denver, Colorado | 24.86 | 631.9 | 30.10 | 764.5 | 23 | — 5.0 | 86 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | NW | Inap. | Inap. | Cloudy | |
| Des Moines, Iowa | 29.22 | 742.2 | 30.17 | 766.3 | 17 | — 8.3 | 83 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.03 | 0.8 | Light snow | |
| Detroit, Michigan | 29.39 | 746.5 | 30.10 | 764.5 | 21 | — 6.1 | 86 | NW | 5 | 2.2 | ..... | 5k | 0 | NW | ..... | Inap. | Inap. | Fair | |
| Dodge City, Kansas | 27.53 | 699.2 | 29.96 | 761.0 | 25 | — 3.9 | 87 | W | 8 | 3.6 | ..... | 2ck | 2s | W | W | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.44 | 747.8 | 30.20 | 767.1 | 14 | —10.0 | 64 | Calm | 0 | 0 | ..... | 5c | Fog | W | Calm | 0 | 0 | Fair | |
| Duluth, Minnesota | 29.41 | 747.0 | 30.17 | 766.3 | 0 | —17.8 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.35 | 745.5 | 30.12 | 765.0 | 44 | 6.7 | 76 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.86 | 758.4 | 29.92 | 760.0 | 27 | — 2.8 | 82 | NW | 1 | 0.4 | ..... | ..... | 10ks | ..... | SW | 0.56 | 14.2 | Cloudy | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 62 | 11.1 | 73 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| El Paso, Texas | 26.18 | 665.0 | ..... | ..... | 51 | 10.2 | 14 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.39 | 746.0 | 30.13 | 765.3 | 22 | — 5.6 | 72 | S | 2 | 0.9 | ..... | 0 | 5ks | ..... | SW | 0.10 | 2.5 | Fair | |
| Escanaba, Michigan | 29.39 | 746.5 | 30.13 | 765.3 | — 8 | —22.2 | 58 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.46 | 722.9 | 30.06 | 763.5 | 47 | 8.3 | 28 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 28.26 | 717.8 | ..... | ..... | — 8 | —22.2 | 56 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.46 | 646.7 | 29.52 | 749.8 | 36 | 2.2 | 35 | E | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.14 | 638.5 | 30.10 | 764.5 | 37 | 2.8 | 63 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.68 | 753.9 | 30.25 | 768.3 | 30 | — 1.1 | 78 | E | 6 | 2.7 | ..... | 0 | 2ks | ..... | W | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.90 | 734.0 | 30.26 | 768.6 | 30 | — 1.1 | 68 | Calm | 0 | 0 | ..... | 2ck | 0 | W | ..... | 0 | 0 | Fair | |
| Fort Keogh, Montana | 27.73 | 704.3 | ..... | ..... | 4 | —15.6 | 74 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort McKavett, Texas | 27.85 | 707.4 | 29.88 | 758.9 | 31 | — 0.6 | 58 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 29.00 | 736.6 | 30.18 | 766 6 | 30 | — 1.1 | 89 | NW | 4 | 1.8 | ..... | 8k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Fort Stevenson, Dakota | 28.39 | 721.1 | ..... | ..... | —12 | —24.4 | 100 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fredericksburg, Texas | 28.40 | 721.3 | 29.99 | 761.7 | 49 | 9.4 | 37 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 30.10 | 764.5 | 30.14 | 765.5 | 47 | 8.3 | 70 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | N | 0.09 | 2.3 | Cloudy | |
| Graham, Texas | 29.11 | 739.4 | 30.24 | 768.1 | 31 | — 0.6 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.42 | 747.2 | 30.12 | 765.0 | 22 | — 5.6 | 72 | NW | 12 | 5.4 | ..... | 0 | 5s | ..... | NW | 0.01 | 0.3 | Fair | |
| Indianapolis, Indiana | 29.39 | 746.5 | 30.23 | 767.8 | 18 | — 7.8 | 75 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianola, Texas | 30.13 | 765.3 | 30.16 | 766.1 | 48 | 8.9 | 70 | NE | 14 | 6.3 | ..... | ..... | 10s | ..... | NE | Inap. | Inap. | Cloudy | |
| Jacksboro, Texas | 29.05 | 737.9 | 30.24 | 768.1 | 35 | 1.7 | 61 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.88 | 758.9 | 29.90 | 759.4 | 63 | 17.2 | 89 | SW | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.16 | 4.1 | Light rain | |
| Keokuk, Iowa | 29.55 | 750.6 | 30.22 | 767.6 | 23 | — 5.0 | 78 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Key West, Florida | 29.85 | 758.2 | 29.88 | 758.9 | 76 | 24.4 | 69 | SW | 21 | 9.4 | ..... | ..... | 10s | ..... | SW | 0.09 | 1.5 | Cloudy | |
| Kittyhawk, North Carolina | 30.05 | 763.3 | 30.07 | 763.8 | 38 | 3.3 | 100 | NE | 36 | 16.1 | ..... | ..... | 10n | ..... | NE | 0.44 | 11.2 | Light rain | |
| Knoxville, Tennessee | 29.16 | 740.7 | 30.23 | 767.8 | 28 | — 2.2 | 72 | NE | 6 | 2.7 | ..... | 8k | 2ks | E | E | 0.03 | 0.8 | Cloudy | |
| La Crosse, Wisconsin | 29.36 | 745.7 | 30.16 | 766.1 | 14 | —10.0 | 64 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.03 | 661.2 | 30.18 | 766.6 | 40 | 4.4 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.70 | 754.4 | 30.05 | 763.3 | 42 | 5.6 | 53 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.29 | 744.0 | 30.19 | 766.8 | 24 | — 4.4 | 61 | S | 6 | 2.7 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | |
| Los Angeles, California | 29.68 | 753.9 | 30.02 | 762.5 | 55.2 | 12.9 | 87 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Louisville, Kentucky | 29.68 | 753.9 | 30.28 | 769.1 | 23 | — 5.0 | 47 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.44 | 747.8 | 30.15 | 765.8 | 37 | 2.8 | 46 | N | 2 | 0.9 | ..... | 0 | 8ks | ..... | N | 0 | 0 | Cloudy | |
| Madison, Wisconsin | 29.08 | 738.6 | 30.15 | 765.8 | 15 | — 9.4 | 65 | W | 10 | 4.5 | ..... | 0 | 1s | ..... | S | 0 | 0 | Clear | |
| Marquette, Michigan | 29.30 | 744.2 | 30.08 | 764.0 | 4 | —15.6 | 48 | SE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Mason, Texas | 28.49 | 723.6 | 30.44 | 773.2 | 36 | 2.2 | 61 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.95 | 760.7 | 30.30 | 769.6 | 29 | — 1.7 | 67 | NE | 4 | 1.8 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.37 | 746.0 | 30.16 | 766.1 | 15 | — 9.4 | 83 | W | 10 | 4.5 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Mobile, Alabama | 30.07 | 763.8 | 30.12 | 765.0 | 39 | 3.9 | 73 | N | 12 | 5.4 | ..... | 2k | 8s | W | NW | 0.01 | 0.3 | Cloudy | |
| Montgomery, Alabama | 29.90 | 759.4 | 30.14 | 765.5 | 34 | 1.1 | 79 | NW | 11 | 4.9 | ..... | 2c | 0 | NW | ..... | 0.15 | 3.8 | Clear | |
| Morgantown, West Virginia | 29.07 | 738.4 | 30.17 | 766.3 | 31 | — 0.6 | 58 | Calm | 0 | 0 | ..... | 1cs | 0 | Calm | ..... | 0.07 | 1.8 | Clear | |
| Mt. Washington, N. H. | 23.41 | 594.6 | 29.77 | 756.1 | 9 | —12.8 | 67 | NW | 36 | 16.1 | ..... | Haze | 0 | Calm | ..... | 0.25 | 6.3 | Clear | |
| Nashville, Tennessee | 29.72 | 754.9 | 30.30 | 769.6 | 27 | — 2.8 | 76 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 29.98 | 761.5 | 30.10 | 764.5 | 26 | — 3.3 | 70 | N | 9 | 4.0 | ..... | 8ck | 0 | SW | ..... | 0.23 | 5.8 | Cloudy | |
| New London, Connecticut | 30.03 | 762.8 | 30.08 | 764.0 | 26 | — 3.3 | 88 | NW | 9 | 4.0 | ..... | 4ck | 1s | SW | Calm | 0.99 | 25.1 | Fair | |
| New Orleans, Louisiana | 30.04 | 763.0 | 30.10 | 764.5 | 47 | 8.3 | 55 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.06 | 1.5 | Cloudy | |
| Newport, Rhode Island | 30.00 | 762.0 | 30.06 | 763.5 | 30 | — 1.1 | 78 | NW | 9 | 4.0 | ..... | ..... | 10s | ..... | SW | 0.84 | 21.3 | Cloudy | |
| New York, New York | 29.96 | 761.0 | 30.15 | 765.8 | 28 | — 2.2 | 67 | NW | 6 | 2.7 | ..... | 0 | 1s | ..... | Calm | 0.18 | 4.6 | Clear | |
| Norfolk, Virginia | 30.06 | 763.5 | 30.12 | 765.0 | 36 | 2.2 | 90 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | NE | 0.44 | 11.2 | Cloudy | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r —10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From—. | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.24 | 619.9 | 30.02 | 762.5 | 16 | — 8.9 | 74 | N | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.79 | 756.7 | 29.83 | 757.7 | 39.3 | 4.1 | 91 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 28.92 | 734.6 | 30.09 | 764.3 | 23 | — 5.0 | 86 | W | 4 | 1.8 | ..... | 5c | 2ks | NW | N | Inap. | Inap. | Fair | |
| Oswego, New York | 29.77 | 756.1 | 30.11 | 764.8 | 29 | — 1.7 | 78 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | W | 0.30 | 7.6 | Cloudy | |
| Pembina, Dakota | 29.30 | 744.2 | 30.26 | 768.6 | —14 | —25.6 | 100 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pa | 30.10 | 764.5 | 30.15 | 765.8 | 29 | — 1.7 | 78 | N | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Phœnix, Arizona | 28.77 | 730.7 | 30.58 | 776.7 | 51 | 10.6 | 46 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.58 | 446.5 | 29.79 | 756.7 | 1 | —17.2 | 42 | NE | 44 | 19.7 | ..... | 0 | 0 | ..... | ..... | 0.17 | 4.3 | Clear | |
| Ploche, Nevada | 23.99 | 609.3 | 29.76 | 755.9 | 36 | 2.2 | 45 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.32 | 744.7 | 30.18 | 766.6 | 25 | — 3.9 | 62 | W | 8 | 3.6 | ..... | 5k | 0 | W | ..... | Inap. | Inap. | Fair | |
| Port Huron, Michigan | 29.88 | 746.2 | 30.09 | 764.3 | 20 | — 6.7 | 85 | NW | 8 | 3.6 | ..... | 8ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Portland, Maine | 29.96 | 761.0 | 30.02 | 762.5 | 28 | — 2.2 | 66 | N | 8 | 3.6 | ..... | 1k | 0 | Calm | ..... | 1.02 | 25.9 | Clear | |
| Portland, Oregon | 29.78 | 756.4 | 29.88 | 758.9 | 53.5 | 11.9 | 40 | NE | 3 | 1.3 | ..... | 0 | 8s | ..... | ..... | 0 | 0 | Cloudy | |
| Prescott, Arizona | 24.69 | 627.1 | 30.05 | 763.3 | 34 | 1.1 | 61 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Punta Rassa, Florida | 29.86 | 758.4 | 29.88 | 758.9 | 72 | 22.2 | 76 | SW | 16 | 7.2 | ..... | 2k | 5ks | SW | SW | 0.10 | 2.5 | Fair | |
| Red Bluff, California | 29.53 | 750.0 | 29.89 | 759.2 | 54 | 12.2 | 80 | S | 8 | 3.6 | ..... | 0 | 5s | ..... | S | 0 | 0 | Fair | |
| Rio Grande City, Texas | 29.94 | 760.5 | 30.16 | 766.1 | 43 | 6.1 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rochester, New York | 29.47 | 748.5 | 30.13 | 765.3 | 19 | — 7.2 | 69 | W | 6 | 2.7 | ..... | 1k | 0 | W | ..... | 0.17 | 4.3 | Clear | |
| Roseburg, Oregon | 29.27 | 743.4 | 29.83 | 757.7 | 48.5 | 9.2 | 93 | SE | 1 | 0.4 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Sacramento, California | 29.87 | 758.7 | 29.95 | 760.7 | 52 | 11.1 | 79 | SW | 8 | 3.6 | ..... | 0 | 2s | ..... | W | 0 | 0 | Fair | |
| St. Louis, Missouri | 29.67 | 753.6 | 30.28 | 769.1 | 25 | — 3.9 | 75 | N | 4 | 1.8 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| St. Marks, Florida | 29.96 | 761.0 | 29.98 | 761.5 | 51 | 10.6 | 86 | N | 16 | 7.2 | ..... | ..... | 10s | ..... | N | 0.68 | 17.3 | Cloudy | |
| St. Paul, Minnesota | 29.24 | 742.7 | 30.15 | 765.8 | 11 | —11.7 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.63 | 651.0 | 29.96 | 761.0 | 37 | 2.8 | 45 | E | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.46 | 748.3 | 30.06 | 763.5 | 41 | 5.0 | 57 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.90 | 761.7 | 30.06 | 763.5 | 56 | 13.3 | 81 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.46 | 748.3 | 30.18 | 766.6 | 21 | — 6.1 | 71 | SW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Sandy Hook, New Jersey | 30.09 | 764.3 | 30.12 | 765.0 | 27 | — 2.8 | 64 | NW | 19 | 8.5 | ..... | 5ck | 0 | W | ..... | 0.19 | 4.8 | Clearing | |
| San Francisco, California | 29.88 | 758.9 | 29.94 | 760.5 | 56 | 13.3 | 69 | W | 5 | 2.2 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Santa Fé, New Mexico | 23.17 | 588.5 | 29.71 | 754.6 | 33 | 0.6 | 51 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.84 | 757.9 | 29.94 | 760.5 | 59 | 15.0 | 94 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | N | 0.81 | 20.6 | Cloudy | |
| Shreveport, Louisiana | 29.98 | 761.5 | 30.21 | 767.3 | 36 | 2.2 | 71 | NE | 5 | 2.2 | ..... | 2ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Silver City, New Mexico | 24.24 | 615.7 | 30.49 | 774.4 | 40 | 4.4 | 64 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 29.98 | 761.5 | 30.01 | 762.2 | 44 | 6.7 | 92 | N | 23 | 10.3 | ..... | ..... | 10n | ..... | N | 0.15 | 3.8 | Light rain | |
| Springfield, Massachusetts | 29.96 | 761.0 | 30.10 | 764.5 | 26 | — 3.3 | 75 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0.57 | 14.5 | Clear | |
| Stockton, Texas | 27.01 | 686.0 | 30.01 | 762.2 | 38 | 3.3 | 45 | SE | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.94 | 760.5 | 30.00 | 762.0 | 27 | — 2.8 | 53 | N | 20 | 8.9 | ..... | 8c | 0 | N | ..... | 0.28 | 7.1 | Fair | |
| Toledo, Ohio | 29.40 | 746.7 | 30.18 | 765.3 | 25 | — 3.9 | 76 | W | 10 | 4.5 | ..... | 0 | 2s | ..... | Calm | 0.02 | 0.5 | Clear | |
| Tucson, Arizona | 27.52 | 699.0 | 30.07 | 763.8 | 47 | 8.3 | 55 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.06 | 738.4 | 30.17 | 766.3 | 40.0 | 4.4 | 68 | SE | 8 | 3.6 | ..... | 0 | 10s | ..... | SE | 0 | 0 | Fair | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 30 | — 1.1 | 100 | Calm | ..... | ..... | 0 | ..... | 10s | ..... | SE | ..... | ..... | Cloudy | |
| Uvalde, Texas | 29.25 | 742.9 | 30.10 | 764.5 | 42 | 5.6 | 50 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.98 | 761.5 | 30.26 | 768.6 | 33 | 0.6 | 70 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Virginia City, Montana | 24.27 | 616.4 | 29.75 | 755.6 | 20 | — 6.7 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.57 | 751.1 | 29.94 | 760.5 | 47 | 8.3 | 86 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 30.07 | 763.8 | 30.19 | 766.8 | 31 | — 0.6 | 58 | N | 5 | 2.2 | ..... | 2ck;h'z | 0 | SW | ..... | 0.09 | 2.3 | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 44 | 6.7 | 60 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 29.94 | 760.5 | 30.02 | 762.5 | 42 | 5.6 | 91 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | N | 0.39 | 9.9 | Heavy rain | |
| Winnemucca, Nevada | 25.53 | 648.4 | 29.89 | 759.2 | 30 | 3.0 | 66 | NE | 10 | 4.5 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Wood's Holl, Mass | 29.90 | 761.7 | 30.03 | 762.8 | 32 | 0.0 | 55 | N | 12 | 5.4 | ..... | ..... | 10ks | ..... | E | 0.32 | 8.1 | Cloudy | |
| Yankton, Dakota | 28.91 | 734.3 | 30.35 | 770.9 | 8 | —13.3 | 78 | N | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yuma, Arizona | 29.73 | 755.1 | 29.90 | 759.4 | 53 | 11.7 | 80 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28 60 | 726.4 | 30.10 | 764.5 | 26 | — 3.3 | 40 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba. W. I | 29.93 | 760.2 | 29.98 | 761.5 | 76 | 24.4 | 81 | SE | 1.2 | 0.5 | ..... | 10c | 2n | Calm | SE | 0 | 0 | Cloudy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.24 | 641.1 | ..... | ..... | 65.5 | 18.6 | 82 | Calm | 0 | 0 | ..... | 9cs | 1s | ..... | ..... | 0.13 | 3.3 | ..... | Thomas Herran. |
| Navassa, W. I | 29.97 | 761.2 | 30.05 | 763.3 | 79 | 26.1 | ..... | E | 8 | 3.6 | ..... | ..... | ..... | ..... | ..... | 0.47 | 11.9 | Fair | W. H. W. Jones. |
| Paramaribo, D. Guiana, S.A | 30.06 | 763.5 | 30.06 | 763.5 | 81 | 27.2 | 83 | E | ..... | ..... | 2 | 3c | 5k | E | ..... | 0 | 0 | Fair | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft.,' or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,642 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,060 (?) ft., or 624.9(?) m.; Winnemucca, 4,336.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.45 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | | | | | | | | | | | | | | | | | | | | | |
| Navy Yard, Pensacola, Fla. | 30.10 | 764.5 | 44 | 6.7 | 44 | 6.7 | 68 | N | 16 | 7.2 | | | 1 | | N | 0 | 0 | | | Clear. | |
| Navy Yard, Portsmouth, N.H. | 30.17 | 766.3 | 75 | 23.9 | 22 | — 5.6 | 86 | NW | 4 | 1.8 | | | 0 | | | | | | | Clear. | |
| Naval Hospital, Yokohama, Japan *‡ | 29.98‡ | 761.5‡ | | | 44.5 | 6.9 | 72 | E | | | 4 | | 10n | | E | Light | Light | | | Light rain. | |
| Adams, Panama *‡ | 29.95 | 760.7 | 79 | 26.1 | 78 | 25.6 | 95 | NW | | | 2 | | 2 | | N; W | | | | | Clear. | |
| Alaska, San Francisco, Cal. | 29.94‡ | 760.5‡ | | | 54 | 12.2 | 87 | SW | | | 2 | | 10 | | NE | | | Smooth | | Drizzling. | |
| Alliance, Leghorn, Italy | 30.06‡ | 763.5‡ | | | 64 | 17.8 | 68 | S | | | 0–1 | | 2 | | S; E | | | | | Clear. | |
| Ashuelot, Hong-Kong, China. *‡ | 30.02‡ | 762.5‡ | | | 58 | 14.4 | 88 | NE | | | 1 | | 10 | | Calm | | | | | Rainy | |
| Canonicus, New Orleans, La. *‡ | 30.06 | 763.5 | 39 | 3.9 | 47 | 8.3 | 92 | NE | | | 4 | | 10 | | NE | | | | | Cloudy. | |
| Colorado, New York, N. Y. | 30.07 | 763.8 | 28 | — 2.2 | 27 | — 2.8 | 100 | NW | 10 | 4.5 | | | 8 | | SW | 0.04 | 1.0 | | | Hazy. | |
| Constitution Lisbon, Portugal | 29.70‡ | 754.4‡ | | | 55 | 12.8 | ?? | ENE | | | 2 | | 10 | | ENE | | | | | Overcast. | |
| Despatch, Naples, Italy | 30.08‡ | 764.0‡ | | | 70 | 21.1 | 53 | WNW | | | 1 | | 2 | | Calm | | | Smooth | | Fair. | |
| Franklin, Norfolk, Va. *‡ | 30.28 | 769.1 | 78 | 25.6 | 38 | 3.3 | 81 | N | 16.8 | 7.5 | | | 10 | | N | 0.7 | 18. | | | Overcast | |
| Gettysburg, Genoa, Italy | 29.96‡ | 760.7‡ | | | 74 | 23.3 | 63 | Calm | | | 0 | | 10 | | | 0 | 0 | | | Cloudy. | |
| Hartford, Montevideo, Uruguay *‡ | 30.05 | 763.3 | 74 | 23.3 | 72 | 22.2 | 80 | E | | | 3 | | 10 | | | 0 | 0 | Smooth | | Threatening | |
| Lackawana, S. 4° 40′, W. 81° 20′. *‡ | 29.76‡ | 755.9‡ | | | 68 | 20.0 | 90 | SE | | | 2 | | 5 | | SW | 0 | 0 | Smooth | | Fair | |
| Michigan, Erie, Pa. †‡ | 30.05 | 763.3 | | | 22 | — 5.6 | 86 | S | | | 3 | | 8 | | W | | | | | Cloudy | |
| Monocacy. Shanghai, China. *‡ | 30.27‡ | 768.8‡ | | | 43 | 6.1 | 68 | N | | | 2 | | 8 | | N | | | | | Fair. | |
| Monongehela, Yokohama, Japan *‡ | 29.96‡ | 761.0‡ | | | 43 | 6.1 | 38 | NNE | | | 2–3 | | 10 | | | 0 | 0 | | | Misty. | |
| New Hampshire, Port Royal, S. C. *‡ | 30.06 | 763.5 | 60 | 15.6 | 57 | 13.9 | 100 | NNW | 24 | 10.7 | | | 10 | | NNW | 0.41 | 10.4 | | | Overcast | |
| Onward, Callao, Peru †‡ | 30.02 | 762.5 | | | 67 | 19.4 | 95 | Calm | | | 0 | | 10 | | | | | Long | W | Misty. | |
| Palos, Tientsin, China *‡ | 30.29 | 769.4 | 40 | 4.4 | 40 | 4.4 | 48 | NW | | | 3 | | 0 | | | | | | | Clear | |
| Passaic, Washington, D. C. | | | | | 31 | — 0.6 | 89 | Calm | | | 0 | | 5 | | | | | | | Fair | |
| Pensacola, Valparaiso, Chili | 29.96‡ | 761.0‡ | | | 63 | 17.2 | 89 | Calm | 0 | 0 | | | 2 | | | 0 | 0 | | | Hazy | |
| Plymouth, N. 37° 54′, W. 64° 22′ | 30.06‡ | 763.5‡ | | | 67 | 19.4 | 100 | SSW | | | 3–4 | | 8 | | ENE | | | Long | S | Cloudy | |
| Powhatan, St. Thomas, W. I. | 30.10‡ | 764.5‡ | | | 82 | 27.8 | 66 | SE | | | 1 | | 2 | | SE | 0 | 0 | Smooth | SE | Clear. | |
| Quinnebaug, N. 39° 35′, E. 4° 08′ | 29.86‡ | 758.4‡ | | | 60 | 15.6 | 82 | SE | | | 4 | | 10 | | SE | | | Mod'ate | S; E | Cloudy. | |
| Ranger. Foochow, China *‡ | 30.10‡ | 764.5‡ | | | 54 | 12.2 | 80 | ENE | | | 2 | | 8 | | Calm | | | Smooth | | Cloudy. | |
| Richmond, N. 29° 45′, E. 32° 30′ | 29.84‡ | 757.9‡ | | | 73 | 22.8 | 43 | Calm | | | 0 | | 0 | | | 0 | 0 | Smooth | | Clear. | |
| Rio Bravo, Brownsville, Texas | 30.01 | 762.2 | 54 | 12.2 | 45 | 7.2 | 100 | NE | | | 2 | | 0 | | | | | | | Clear | |
| Santee, Annapolis, Md. | 30.18‡ | 766.6‡ | | | 34 | 1.1 | 51 | N | | | 2 | | 2 | | NNW | 0.03 | 0.8 | | | Fair | |
| Saratoga, Hampton Roads, Va. | 30.12‡ | 765.0‡ | | | 37 | 2.8 | 81 | N | | | 5 | | 10 | | | Mod'ate | Mod'ate | | | Overcast | |
| St. Louis, League Island, Pa | 30.07 | 763.8 | 56 | 13.3 | 33 | 0.6 | | N | 15 | 6.7 | | | 2 | | Calm | 0.12 | 3.0 | | | Clear | |
| Supply, New York, N. Y. | 30.13‡ | 765.3‡ | | | 28 | — 2.2 | 88 | N | | | 4 | | 2 | | N | | | | | Clear. | |
| Trenton Naples, Italy *‡ | 30.07‡ | 763.8‡ | | | 66 | 18.9 | 64 | SW | | | 1 | | 2 | | Calm | 0 | 0 | Smooth | | Fair | |
| Tuscarora, Salinas Cruz, Mexico | 29.89‡ | 759.2‡ | | | 79 | 26.1 | 82 | N | | | 1–2 | | 9 | | | 0 | 0 | Smooth | | Overcast. | |
| Wabash, Boston, Mass. | 30.07‡ | 763.8‡ | | | 25 | — 3.9 | 87 | NW | 4 | 1.8 | | | 2ck | | | | | | | Fair | |
| Wyoming, Alexandria, Egypt *‡ | 29.94‡ | 760.5‡ | | | 64 | 17.8 | 100 | NE | | | 3–4 | | 0 | | | | | Smooth | | Clear. | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From — | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | Character. | Direction from— | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | |
| S. S. Granada, Capt. Austin, Acapulco, Mexico †.. | | 30.11‡ | 764.6‡ | 75 | 23.9 | | Calm | | | 0 | | 0 | | | | | | Hazy | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, N. 35° 40', W. 128° 05' | | 29.91‡ | 759.7‡ | | | | S | | | 6 | | | | SSE | | Con-fused | S;NW | Gloomy | R. C. Ghest, 1st Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; and no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, N. 23° 48', E. 118° 11' | | 29.97‡ | 761.2‡ | 54 | 12.2 | 80 | NE | | | 7 | | ns | | NE | | Rough | | Raining | J. A. Thompson, 2d Off't |
| S. S. Gaelic, Hong-Kong, China † | | 29.95‡ | 760.7‡ | 56 | 13.3 | | NE | | | 4 | | k | | SW | Blank | High | | Overcast | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, Bremerhaven, Germany | | 29.90‡ | 759.4‡ | | | | SSE | | | 3 | | | | SE | | | | Cloudy | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Lo'wr 0—10. | Upper. From— | Lower. From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Liverpool | | 29.70‡ | 754.4‡ | 41 | 5.0 | | SE | | | 4 | | 6 | | SE | Mod'ate | | | Cloudy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
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| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| **MARINE SERIES. (Miscellaneous.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller, N. 35° 33′, W. 74° 32′ | | 29.88‡ | 758.9‡ | 48 | 8.9 | 100 | NNE | 20 | 8.9 | | | 10n | | NE | 0.22 in. or 5.6mm. | Rough | NNE | Drizzling. | Capt. James Jorgensen. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 19, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 29.95 | 760.7 | 61.2 | 16.2 | 82 | SW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.374 | 9.5 | ..... | |
| Nemours | ..... | ..... | 29.67 | 753.5 | 65.8 | 18.8 | 50 | WNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | Kesxuché. |
| Algiers | ..... | ..... | 29.63 | 752.7 | 69.1 | 20.6 | 40 | SW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | Inap. | Inap. | Clear. ..... | Tourillière. |
| La Calle | ..... | ..... | 29.72 | 755.0 | 79.9 | 26.6 | 43 | WSW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | Foufrede. |
| Tunis | ..... | ..... | 29.72 | 755.0 | 68.4 | 20.2 | 57 | SW | ..... | ..... | 8 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy ..... | Jacques. |
| Sfax | ..... | ..... | 29.91 | 759.7 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Grau. |
| Saida | ..... | ..... | 29.74 | 755.3 | 59.4 | 15.2 | 29 | W | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | Herbin. |
| Tebessa | ..... | ..... | 29.85 | 758.3 | 67.6 | 19.8 | 24 | SW | ..... | ..... | 7 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | Watrin. |
| Geriville | ..... | ..... | 29.78 | 756.4 | 59.7 | 15.4 | 96 | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | Brugnlaux. |
| Laghouat | ..... | ..... | 29.84 | 757.9 | 65.5 | 18.6 | 18 | SW | ..... | ..... | 6 | ..... | 2 | ..... | ..... | 0 | 0 | Fair..... | Bertraud. |
| Biskra | ..... | ..... | 29.75 | 755.7 | 76.5 | 24.7 | 26 | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair..... | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.41 | 747.1 | 29.95 | 760.8 | 62.6 | 17.0 | 48 | S | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.33 | 745.0 | 30.12 | 765.1 | 39.9 | 4.4 | 89 | ENE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski |
| Eperies | 29.19 | 741.5 | 30.08 | 764.1 | 48.4 | 9.1 | ..... | SE | ..... | ..... | 1 | ..... | 5cs | ..... | S | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.67 | 728.3 | 29.92 | 760.0 | 55.8 | 13.2 | 53 | SW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.67 | 728.3 | 30.13 | 765.2 | 50.0 | 10.0 | 48 | N | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. A. Gottschling. |
| Kremsmünster | 28.56 | 725.4 | 29.92 | 760.0 | 44.4 | 6.9 | 81 | ENE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner. |
| Lemberg | 29.08 | 738.5 | 30.10 | 764.6 | 34.9 | 1.6 | 71 | NE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.94 | 760.4 | 30.05 | 763.2 | 55.2 | 12.9 | 76 | SE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office. |
| Szathmar | 29.67 | 753.7 | 30.15 | 765.8 | 45.7 | 7.6 | 86 | SE | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 29.97 | 761.3 | 30.08 | 763.9 | 55.4 | 13.0 | 80 | Calm | ..... | ..... | 0 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | P. Busin. |
| Vienna | 29.26 | 743.3 | 29.98 | 761.6 | 51.4 | 10.8 | 61 | SE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | 29.58 | 751.4 | 29.78 | 756.4 | 58.6 | 14.8 | 67 | E | ..... | ..... | 1 | 0 | ..... | 0 | W | 0 | 0 | ..... | Royal Observatory |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. E. de Cae. |
| Maeseyck | 29.69 | 754.2 | 29.82 | 757.4 | 56.3 | 13.5 | 64 | NE | ..... | ..... | 2 | ..... | ..... | 1 | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:9, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instru-m't'al error and temperature. Inches. | Barometer. Corrected for instru-m't'al error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.76 | 755.9 | 29.86 | 758.4 | 39.7 | 4.3 | ..... | SE | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | 0.040 | 1.02 | Foggy | W. Boswell. |
| Ardrossan | 29.79 | 756.7 | 29.81 | 757.2 | 43 | 6.1 | ..... | NNE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.86 | 758.4 | 43.9 | 6.6 | ..... | NE | 4 | 1.8 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.78 | 756.4 | 52.4 | 11.3 | ..... | SE | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.79 | 756.7 | 49.9 | 9.9 | ..... | SSE | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Thomas Mackereth. |
| Bradford, Yorkshire | 29.39 | 746.5 | 29.79 | 756.7 | 40.1 | 9.5 | ..... | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.99 | 761.7 | 30.02 | 762.5 | 84.0 | 28.9 | ..... | E | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Surgener, A H. |
| Cambridge, Observatory | ..... | ..... | 29.76 | 755.9 | 62.0 | 16.7 | ..... | E | ..... | ..... | 1 | ..... | 1 | ..... | ..... | Blank | Blank | D. clouds | H. Todd. [O. |
| Cardington | ..... | ..... | 29.74 | 755 4 | 58.0 | 14.4 | ..... | SE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | John McLaren. |
| Chatham, School M. E. | 29.62 | 752.3 | 29.75 | 755.6 | 58.8 | 14.9 | ..... | Calm | ..... | ..... | 0 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | Corpl. Daly, R. E. |
| Dartmoor | 28.20 | 716.3 | 29.65 | 753.1 | 53.0 | 11.7 | ..... | E | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | Fine | Alexander Watt. |
| Donaghadee | 29.82 | 757.4 | 29.86 | 758.4 | 43 | 6.1 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | J. Mac Gowan. |
| Dover | 29.72 | 754.9 | 29.74 | 755.4 | 51 | 10.6 | ..... | ENE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | ¾ clouded | J. Costello. |
| Falmouth, Observatory | 29.45 | 748.0 | 29.68 | 753.9 | 51.4 | 10.8 | ..... | E | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.39 | 695.7 | 29.71 | 754.6 | 74.8 | 23.8 | ..... | NE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.72 | 754.9 | 29.95 | 760.7 | 86 | 30.0 | ..... | NW? | ..... | ..... | 0? | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.73 | 755.1 | 51 | 10.6 | ..... | E | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.63 | 750.0 | 29.59 | 751.6 | 56.4 | 13.6 | ..... | W | ..... | ..... | 3 | ..... | 9 | ..... | ..... | Blank | Blank | Gloomy | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.62 | 752.3 | 29.82 | 757.4 | 40.4 | 4.7 | ..... | E | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast | D. G. Maclean. |
| Great Yarmouth | 29.80 | 756.9 | 29.80 | 756.9 | 44 | 6.7 | ..... | ESE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.56 | 750.8 | 29.73 | 755.1 | 61.1 | 16.2 | ..... | E | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | The Staff, for G. B. Airy. |
| Guernsey | 29.42 | 747.2 | 29.61 | 752.8 | 50 | 10.0 | ..... | ESE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F.R.S. |
| Helston | 29.65 | 753.1 | 29.77 | 756.1 | 55 | 12.8 | ..... | E | ..... | ..... | 4 | ..... | 1c | ..... | ..... | 0 | 0 | Very fine | M. P. Moyle. |
| Holyhead | 29.69 | 754.1 | 29.75 | 755.6 | 42 | 5.6 | ..... | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | John Tilston. |
| Jersey | 29.38 | 746.2 | 29.67 | 753.6 | 52.2 | 11.2 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | J. Fisher. |
| Kew, Observatory | 29.69 | 754.1 | 29.73 | 755.1 | 59.5 | 15.3 | ..... | E | 12 | 5.4 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | Misty | The Meteorological Of. |
| Leicester, Museum | 29.50 | 749.3 | 29.76 | 755.9 | 58.2 | 14.6 | ..... | NW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.98 | 761.5 | 30.06 | 763.5 | 63 | 17.2 | ..... | SE | ..... | ..... | 3 | ..... | 4ck | ..... | ..... | ..... | ..... | D. clouds | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.75 | 755.6 | 29.85 | 758.2 | 40 | 4.4 | ..... | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.12 | 765.0 | 73.2 | 22.9 | ..... | N | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.58 | 751.3 | 29.77 | 756.1 | 54.9 | 12.7 | ..... | NNE | ..... | ..... | 1 | ..... | 6ck | SSE | ..... | 0.027 | 0.69 | D. clouds | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.24 | 742 7 | 29.76 | 755.9 | 53.5 | 11.9 | ..... | ENE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.73 | 755.1 | 61 | 16.1 | ..... | ENE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | H. E. Bellamy. |
| Plymouth | 29.59 | 751.6 | 29.66 | 753.4 | 56.6 | 13.7 | ..... | E | ..... | ..... | 5 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | John Merrifield. |
| Roche's Point | 29.68 | 753.9 | 29.72 | 754.9 | 49 | 9.4 | ..... | ESE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded | W. Kennedy. |
| Saint Ann's Head | 29.46 | 748.3 | 29.72 | 754.9 | 52 | 11.1 | ..... | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Misty | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 29.95 | 760.7 | 36 | 2.2 | ..... | E | 20 | 8.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 30.13 | 765.3 | 50.6 | 10.3 | ..... | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | W. H. Lyne. |
| Sheffield | 29.49 | 749.0 | 29.77 | 756.1 | 51.5 | 10.8 | ..... | E | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0 | 0 | Overcast | W. F. Cooper. |
| Silloth Rectory | 29.78 | 756.4 | 29.81 | 757.2 | 53.7 | 12.1 | 61 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.39 | 746.5 | 29.79 | 756.7 | 53.0 | 11.7 | ..... | ENE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Rev. S. J. Perry. |
| Strathfield Turgiss | 29.52 | 749.8 | 29.73 | 755.1 | 58.5 | 14.7 | ..... | SE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Foggy | C.H. Griffith, F..M.S. |
| Thurso | 29.84 | 757.9 | 29.90 | 759.4 | 38 | 3.3 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | John Trotter. |
| Truro, Royal Institution | 29.63 | 752.2 | 29.67 | 753.6 | 61 | 16.1 | ..... | E | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | W. Newcombe. |
| Valencia, Observatory | 29.68 | 753.9 | 29.71 | 754.6 | 52.7 | 11.5 | ..... | N | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.96 | 761.0 | 30.00 | 762.0 | 77.8 | 25.4 | 42 | S | 11 | 4.9 | ..... | 0 | 1 | ..... | ..... | 0.030 | 0.76 | Raining | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.14 | 765.5 | 53.0 | 11.7 | 82 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0.02 | 0.5 | Starlight | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.85 | 758.2 | 40.0 | 4.4 | ..... | NE | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | ..... | Andrew Gibb. |
| Mauritius, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Meldrum. |
| Melbourne, Observatory | 30.22 | 767.6 | 30.31 | 769.9 | 67.6 | 14.2 | 67 | ESE | 7 | 3.1 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Gloomy | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 29.87 | 758.7 | 42 | 5.6 | ..... | ENE | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.04 | 763.0 | 36 | 2.2 | ..... | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway. Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

| British Marine Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 37° 55′, E. 24° 32′ | ..... | ..... | 30.10‡ | 764.5‡ | 61.5 | 16.4 | ..... | N | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle Isle, N. 34° 14′, W. 68° 19′ | ..... | ..... | 29.67‡ | 753.6‡ | 64 | 17.8 | ..... | NNW | ..... | ..... | 8 | ..... | 5 | ..... | ..... | 7 | Confused. | D. clouds | Capt. A. J. Brown. |
| Ship British Commodore, N. 39° 00′, W. 71° 30′ | ..... | ..... | 30.14 | 765.5 | 41 | 5.0 | ..... | NNE | ..... | ..... | 6 | ..... | 2 | ..... | ..... | 4 | N | Blue sky | Capt. J. W. Thorne. |
| City of Agra, N. 22° 13′ W. 43° 38′ | ..... | ..... | 30.31‡ | 769.9‡ | 72.5 | 22.5 | ..... | ENE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | E | D. clouds | Capt. Thos. Young. |
| Barque Commewyne, N. 37° 10′, W. 47° 45′ | ..... | ..... | 30.34‡ | 770.6‡ | 64.5 | 18.1 | ..... | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Capt. A. Buchan. |
| Barque Fedalina, N. 47° 45′, W. 9° 40′ | ..... | ..... | 29.46‡ | 748.3‡ | 54 | 12.2 | ..... | ESE | ..... | ..... | 4 | ..... | 1C | ..... | ..... | 2 | Confused | Overcast | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | | | | | | | | | | | | | | | | | | | Mr. Ansart. |
| San José | 26.31 | 668.3 | 30.03 | 762.8 | 67.6 | 19.8 | 88 | S | | | 1 | | 10s | | | 0 | 0 | | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.05 | 763.2 | 30.10 | 764.4 | 35.2 | 1.8 | 67 | SSE | | | 2 | | 7 | | | | | | |
| Fanöe | 29.97 | 761.2 | 29.99 | 761.7 | 34.3 | 1.3 | 87 | E | | | 4 | | 10 | | | | | | |
| Godthaab, (Greenland) | 29.47 | 748.4 | 29.51 | 749.5 | 19.9 | — 6.7 | 78 | E | | | 2 | | 10 | | | | | | |
| Stykkisholm, (Iceland) | | | | | | | | | | | | | | | | | | | |
| Thorshavn, (Faröe) | 30.06 | 763.5 | 30.10 | 764.4 | 39.0 | 4.4 | 86 | E | | | 2 | | 7 | | | | | | |
| Vestervig | 29.82 | 757.3 | 29.98 | 761.6 | 36.0 | 2.2 | 93 | SW | | | 2 | | 10 | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.16 | 740.6 | 29.71 | 754.6 | 52.9 | 11.6 | 83 | E | | | 1 | | 10 | | | 0 | 0 | Covered | Collignon, Director. |
| Amiens, Normal School | 29.52 | 749.8 | 29.63 | 752.6 | 55.4 | 13 0 | 82 | NE | | | 1 | | 0 | | | 0 | 0 | Clear | Bouvallet, Director. |
| Avignon, Normal School | 29.63 | 752.6 | 29.71 | 754.6 | 54.0 | 12.2 | 72 | ENE | | | 1 | | 8 | | SE | 0 | 0 | Very cloudy | M. Giraud, Director. |
| Bar-sur-Seine | 29.17 | 740.9 | 29.71 | 754.7 | 61.0 | 16.1 | 26 | SSE | | | 1 | | 8kn | | SW | 0 | 0 | Very cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.46 | 748.3 | 29.74 | 755.4 | 57.4 | 14.1 | 59 | ESE | | | 1 | | 10 | | | 0 | 0 | Covered | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 28.87 | 733.4 | 29.76 | 755.8 | 55.9 | 13.3 | 65 | E | | | 1 | | 5 | | W | 0 | 0 | Cloudy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.88 | 733.6 | 29.79 | 756.7 | 55.0 | 12.8 | 67 | W | | | 1 | | 5kn | W | W | 0 | 0 | Cloudy | M. Marlot, Director. |
| Bourges, Normal School | 29.10 | 739.1 | 29.64 | 752.8 | 62.6 | 17 | 55 | SE | | | 8 | | 10 | NE | NE | 0 | 0 | Covered | A. Waquet, Director. |
| Brest, Naval Observatory | 29.32 | 744.7 | 29.56 | 750.9 | 57.2 | 14.0 | 67 | E | | | 2 | | 10 | | E | 0 | 0 | | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.19 | 741.3 | 29.60 | 751.7 | 52.2 | 11.2 | 75 | E | | | 3 | | 5 | E | E | 0.12 | 3. | Cloudy | September, Director. |
| Caen, Normal School | 29.59 | 751.6 | 29.67 | 753.5 | 55.4 | 13 | 68 | S | | | 1 | | 5 | | SSW | 0 | 0 | Cloudy | M. Lair, Director. |
| Chartres, Normal School | 29.12 | 739.5 | 29.67 | 753.7 | 56.1 | 13.4 | 95 | E | | | 1 | | 10 | | SW | 0 | 0 | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.45 | 748.1 | 29.77 | 756.1 | 61.3 | 16.3 | 55 | SE | | | 3 | | 2 | | | | | Slightly cl'dy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.31 | 719.1 | 29.65 | 753.0 | 56.8 | 13.8 | 47 | SE | | | 2 | | 10 | | SW | 0 | 0 | | Alluard, Director. |
| Commercy, Normal School | 28.92 | 734.5 | 29.77 | 756.2 | 54.9 | 12.7 | 59 | ENE | | | 3 | | 5kn | | ENE | 0 | 0 | Cloudy | Dr. Coulet, Director. |
| Commune de Grénsque* | 28.56 | 725.5 | 29.71 | 754.6 | 54.5 | 12.5 | 61 | SE | | | 10 | | 8 | | SE | 0 | 0 | Covered | M. Kina, Director. |
| Grenoble, Normal School | 28.96 | 735.6 | 29.71 | 754.6 | 58.6 | 14.8 | 50 | NE | | | 1 | | 8ck | S | | 0 | 0 | Very cloudy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.38 | 746.3 | 29.61 | 752.0 | 60.4 | 15.8 | 59 | E | | | 1 | | 8 | | E | 0 | 0 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.30 | 745.8 | 29.67 | 753.6 | 56.8 | 13.8 | 80 | E | | | 3 | | 5 | | ESE | 0 | 0 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 28.80 | 731.6 | 29.72 | 754.9 | 58.1 | 14.5 | 55 | NNW | | | 1 | | | | | 0 | 0 | Misty | Baudry, Director. |
| Lorient, Naval Observatory | 29.50 | 749.2 | 29.60 | 751.7 | 54.3 | 12.4 | 74 | E | | | 1 | | | | | 0 | 0 | | Lt T. Carré, Director. |
| Mâcon, Normal School | | | | | | | | | | | | | | | | | | | M. Galzin, Director |
| Mirecourt, Normal School | 28.73 | 729.8 | 29.82 | 757.5 | 59.7 | 15.4 | 45 | NNW | | | 1 | | k | | SSE | 0 | 0 | | M. Barbier, Director. |
| Nîmes, Normal School | 29.48 | 748.9 | 29.69 | 754.1 | 53.2 | 11.8 | 87 | NE | | | 1 | | 10 | | N | 0 | 0 | Covered | Boyer, Director. |
| Privas, Normal School | 28.65 | 727.7 | 29.70 | 754.4 | 57.2 | 14 | 67 | S | | | 1 | | n | S | S | 0 | 0 | | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.77 | 629.3 | | | 30.0 | 3.0 | 66 | SSE | | | 10 | | 10 | | | 0 | 0 | Covered | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.52 | 749.7 | 29.55 | 750.5 | 58.1 | 14.6 | 73 | ESE | | | 2 | | 10 | SSE | SSE | 0.04 | 1. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.61 | 752.0 | 29.69 | 754.2 | 58.1 | 14.5 | 52 | SE | | | 1 | | 2 | | S | 0 | 0 | Slightly cl'dy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.59 | 751.5 | 29.62 | 752.3 | 55.2 | 12.9 | 68 | SE | | | 2 | | 10 | SE | SE | 0.055 | 0.14 | Covered | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.55 | 750.6 | 29.72 | 754.8 | 60.8 | 15.7 | 48 | E | | | 1 | | | | WSW | 0 | 0 | Solar halo | E. Renou, Director. |
| Tarbes, Normal School | 28.32 | 719.4 | 29.37 | 746.1 | 59.0 | 15 | 30 | SW | | | 4 | | 0 | | | 0 | 0 | Clear | T. Huguet, Director. |
| Versailles Observatory | 29.21 | 741.9 | 29.70 | 754.4 | 56.7 | 13.7 | | SE | | | 2 | | 9 | | | 0 | 0 | Almost cov' | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.06 | 738.2 | 29.78 | 756.3 | 63.5 | 17.5 | 75 | S | | | 1 | | 2 | | S | 0 | 0 | Slightly cl'dy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.94 | 760.4 | 29.96 | 761.1 | 77.4 | 25.2 | | | | | | | | | | 0.28 | 7. | | L'Abbé Marel 6sl. |
| Lyons Obs'y, (Park Station) | 29.11 | 739.3 | 29.71 | 754.5 | 61.3 | 16.3 | 31 | SSE | | | 1 | | 8 | | | 0 | 0 | Covered | Mr. Jays. |
| Marseilles, Observatory | | | | | | | | | | | | | | | | | | | The Staff. |
| Mont-Louis | 24.71 | 627.6 | 30.02 | 762.6 | 37.8 | 3.2 | 75 | NE | 18.6 | 8.3 | | | 5 | | | 0.228 | 5.8 | | M. Cave. |
| Nice | | | 29.84 | 758.0 | 60.4 | 15.8 | 59 | ESE | | | 10 | | 10 | | | | | Raining | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.43 | 747.5 | | | 59.0 | 15.0 | 48 | SE | | | 2 | | 10 | | | 0 | 0 | | Marié Davy, Director. |
| Perpignan | 29.45 | 748.0 | 29.56 | 750.7 | 53.4 | 11.9 | 88 | SE | 28.0 | 12.5 | | | 10 | | SE | 0.343 | 8.7 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.00 | 558.9 | | | 33.4 | 0.8 | | S | | | 1 | | 10 | | | 0.350 | 8.9 | Snowing | Gen'l de Nansouty. |
| Toulouse, Observatory | 28.80 | 731.5 | 29.51 | 749.5 | 56 8 | 13.8 | 73 | SSE | | | 6 | | 9 | | | 0 | 0 | | M. Mercadier Juller. |
| Tours | 29.45 | 748.1 | 29.65 | 753.1 | 54.9 | 12.7 | 66 | ESE | | | 1 | | 10 | | S | 0 | 0 | | Cousin-Marquete. |
| Zi-Ka-Wei, (near Shanghai) | 30.13 | 765.3 | 30.15 | 765.9 | 39.9 | 4.4 | 93 | E | 2.2 | 1.0 | | | 0 | | | 0 | 0 | Clear | Marc Dechevrens. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Grenasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grènesque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.06 | 738.2 | 29.90 | 759.5 | 49.1 | 9.5 | 60 | SE | | | 4 | | 0 | | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.87 | 758.7 | 30.05 | 763.2 | 44.2 | 6.8 | 64 | S | | | 1 | | 1 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.55 | 750.6 | 30.08 | 764.1 | 41.5 | 5.3 | 75 | ESE | | | 3 | | 5 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.38 | 746.2 | 29.80 | 756.8 | 59.7 | 15.4 | 53 | N | | | 2 | | 0 | | | 0 | 0 | | Albert Sens. |
| Cassel | 29.32 | 744.6 | 29.92 | 760.0 | 52.7 | 11.5 | 67 | ESE | | | 1 | | 0 | | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.06 | 753.4 | 29.82 | 757.5 | 59.5 | 15.3 | 48 | SE | | | 2 | | 3 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.52 | 749.8 | 29.89 | 759.2 | 54.1 | 12.3 | | NE | | | 1 | | 1 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.37 | 720.7 | 29.83 | 757.6 | 43.9 | 6.6 | 83 | SW | | | 2 | | 4 | SW | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.91 | 759.7 | 29.98 | 761.5 | 41.9 | 5.5 | 64 | ESE | | | 4 | | 0 | | | 0 | 0 | Clear | Captain F. Hegemann. |
| Kiel | 30.00 | 761.9 | 30.01 | 762.3 | 37.9 | 3.3 | 70 | SE | | | 2 | | 1 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.08 | 763.9 | 30.16 | 766.1 | 34.0 | 1.1 | 81 | W | | | 3 | | 6 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 30.10 | 764.4 | 37.2 | 2.9 | | W | | | 2 | | 1 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.56 | 750.8 | 29.98 | 761.6 | 46.2 | 7.9 | 56 | E | | | 3 | | 0 | | | 0 | 0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 30.06 | 763.5 | 30.11 | 764.7 | 37.0 | 2.8 | 72 | W | | | 4 | | 2k | | | | | | Skalweit. |
| Neufahrwasser | 30.15 | 765.7 | 30.16 | 766.1 | 38.8 | 3.8 | 70 | Calm | | | 0 | | 7 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.84 | 757.8 | 30.14 | 765.5 | 34.9 | 1.6 | 70 | E | | | 5 | | 0 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.28 | 743.7 | 29.83 | 757.6 | 55.4 | 13.0 | 58 | NE | | | 1 | | 7 | | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 28.88 | 733.6 | 29.81 | 757.2 | 58.1 | 14.5 | 43 | N | | | 1 | | 0 | | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | | | | | | | | | | | | | | | | | | | Prof. Fiesch. |
| Weissenburg, (Bavaria) | 28.36 | 720.4 | 29.87 | 758.7 | 54.5 | 12.5 | 55 | E | 7 | 3 | | | 1k | | SE | 0 | 0 | | Dr. Van Bebber. |
| Wustrow, Naval School | 30.04 | 762.9 | 30.06 | 763.5 | 27.7 | — 2.4 | 78 | SE | | | 3 | | 3s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.72 | 755.0 | 30.11 | 764.9 | 64.8 | 18.2 | | SW | | | 1.0 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.90 | 759.4 | 29.95 | 760.7 | 73.1 | 22.8 | 51 | WNW | 14 | 6.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.41 | 747.0 | 29.88 | 759.1 | 82.7 | 28.2 | 11 | NNW | 10.7 | 4.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.78 | 756.5 | 29.82 | 757.4 | 80.5 | 26.9 | 44 | NNW | 31 | 13.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.11 | 739.6 | 29.86 | 758.4 | 75.7 | 24.3 | 27 | NW | 2.1 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.27 | 692.6 | 29.75 | 755.6 | 88.3 | 31.3 | 27 | W | 9.0 | 4.0 | | | 2 | | | 0 | 0 | | |
| Roorkee | 28.92 | 734.6 | 29.84 | 757.8 | 72.2 | 22.3 | 25 | NW | 4.2 | 1.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Agra | 29.36 | 745.9 | 29.93 | 760.3 | 79.7 | 26.5 | 22 | W | | | | | | | | 0 | 0 | | |
| Nagpur | 28.73 | 729.8 | 29.76 | 756.0 | 85.6 | 29.8 | 23 | W | 2.9 | 1.3 | | | 2 | | | 0 | 0 | D. clouds | |
| Lucknow | 29.46 | 748.2 | 29.84 | 757.9 | 76.3 | 24.6 | 36 | NW | 2.4 | 1.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.54 | 750.3 | 29.85 | 758.3 | 79.1 | 26.2 | 27 | NW | 3.6 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.63 | 752.5 | 29.81 | 757.1 | 81.3 | 27.4 | 30 | W | 4.8 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.91 | 708.9 | 29.93 | 760.2 | 77.8 | 25.4 | 18 | NW | 7.0 | 3.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.75 | 755.6 | 29.83 | 757.7 | 79.5 | 26.4 | 67 | NNW | 2.6 | 1.2 | | | 2 | | | 0.73 | 18.5 | D. clouds | |
| Calcutta (Alipore) | 29.80 | 756.8 | 29.82 | 757.3 | 79.7 | 26.5 | 40 | S | 2.0 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.37 | 745.9 | 29.76 | 755.8 | 79.3 | 26.3 | 17 | W | 3.3 | 1.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.75 | 755.6 | 29.84 | 757.9 | 80.7 | 27.1 | 69 | Calm | 3.2 | 1.4 | | | 1 | | | 0 | 0 | Misty | |
| Sibsagar | 29.48 | 748.8 | 29.82 | 757.5 | 69.9 | 21.1 | 77 | W | 3.5 | 1.6 | | | 4 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.44 | 722.5 | 29.80 | 756.9 | 82.8 | 28.2 | 21 | N | 3.8 | 1.7 | | | 0 | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'r 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.65 | 753.1 | 30.07 | 763.7 | 52.2 | 11.2 | 64 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.47 | 748.6 | 30.00 | 761.9 | 53.3 | 14.6 | 61 | ESE | ..... | ..... | 4 | ..... | 9 | E | ..... | 0.390 | 9.9 | ..... | Prof. Schiaparelli. |
| Padua | 29.94 | 760.4 | 30.05 | 763.2 | 54.7 | 12.6 | 73 | NE | 8.1 | 3.6 | ..... | ..... | 10 | ESE | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 29.09 | 738.8 | 30.00 | 762.1 | 50.4 | 10.2 | 73 | N | 2.5 | 1.1 | ..... | ..... | 10 | NE | ..... | 0.394 | 10.0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.78 | 756.4 | 29.98 | 761.4 | 57.2 | 14.0 | 64 | Calm | 0 | 0 | ..... | ..... | 10 | SE | ..... | 0.004 | 0.1 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 28.07 | 712.9 | 30.00 | 762.0 | 44.6 | 7.0 | 94 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.181 | 4.6 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.95 | 760.8 | 30.00 | 762.0 | 54.7 | 12.6 | 85 | NE | 13.0 | 5.8 | ..... | ..... | 10 | ..... | ..... | 0.020 | 0.5 | ..... | Prof. Luigi Guidi. |
| Florence | 29.72 | 754.9 | 29.98 | 761.5 | 50.8 | 16.0 | 50 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.86 | 758.5 | 29.95 | 760.6 | 57.7 | 14.3 | 71 | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 29.82 | 757.3 | 29.99 | 761.8 | 64.4 | 18.0 | 49 | S | 9.8 | 4.4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.86 | 758.4 | 30.11 | 764.9 | 64.4 | 18.0 | 66 | WSW | 7.4 | 3.3 | ..... | ..... | 5 | NW | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.17 | 741.0 | 30.07 | 763.7 | 61.9 | 16.6 | 73 | NW | 0 | 0 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.84 | 757.9 | 30.03 | 762.8 | 67.9 | 14.4 | 84 | SE | ..... | ..... | 6 | ..... | 10 | SE | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.67 | 753.7 | 29.93 | 760.2 | 66.7 | 19.3 | 37 | S | 6.9 | 3.1 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.99 | 761.8 | 30.07 | 763.7 | 59.7 | 15.4 | 82 | SE | 7.4 | 3.3 | ..... | ..... | 10 | SE | ..... | 0.374 | 9.5 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.46 | 748.3 | 30.02 | 762.4 | 63.5 | 17.5 | 50 | WSW | 2.5 | 1.1 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 29.87 | 758.7 | 29.89 | 759.2 | 40.5 | 4.7 | 74 | N | 2.7 | 1.2 | ..... | ..... | 1s | ..... | ..... | 0 | 0 | Clear. ..... | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.73 | 755.1 | 29.94 | 760.5 | 42.5 | 5.8 | 82 | NNW | 0.9 | 0.4 | ..... | ..... | 2s | ..... | ..... | 0 | 0 | Clear..... | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.85 | 758.2 | 29.92 | 759.9 | 40.6 | 4.8 | 82 | NE | 3.5 | 1.6 | ..... | ..... | 10s | ..... | ..... | 0.001 | 0.02 | Covered..... | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.13 | 638.4 | 30.24 | 768.2 | 43.7 | 6.5 | 43 | Calm | ..... | ..... | 0 | 5 | ..... | SW | ..... | 0 | 0 | ½ clouded... | Prof. L. Perez. |
| Leon | 24.47 | 621.6 | 30.18 | 766.7 | 55.4 | 13.0 | 64 | NW | ..... | ..... | 1 | 3c | 0 | SW | ..... | 0 | 0 | Foggy..... | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.12 | 587.3 | 30.24 | 768.1 | 48.2 | 9.0 | 51 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair..... | M. V. de Leon, M. E. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 48.7 | 9.3 | 57 | Calm | ..... | ..... | 0 | 1c | 0 | ..... | ..... | 0 | 0 | Fair..... | M. V. de Leon, M. E. |
| Tlacotalpam | 30.09 | 764.2 | 30.10 | 764.5 | 72.3 | 22.4 | 90 | E | ..... | ..... | 1 | 5 | 3 | SE | E | Inap. | Inap. | Misty..... | M. M. Cházaro.- |
| San Luis Potosí | 24.21 | 615.1 | 30.27 | 768.9 | 55.0 | 12.8 | 28 | ESE | ..... | ..... | 1 | 0 | 6 | ..... | ESE | 0 | 0 | Misty ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.46 | 596.9 | 30.22 | 767.7 | 46.4 | 8.0 | 52 | NE | 0.4 | 0.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.44 | 722.8 | 30.11 | 764.8 | 47.2 | 72.3 | 63 | NE | ..... | ..... | 1 | 0 | 1 | ..... | ..... | 0 | 0 | Clear..... | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosí, 1,893 m., or 6,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,201m., or 7,220.9 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.81 | 757.2 | 29.81 | 757.2 | 54.7 | 12.6 | ..... | E | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.85 | 758.1 | 29.90 | 759.5 | 45.7 | 7.6 | ..... | ESE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.85 | 758.1 | 29.85 | 758.1 | 45.5 | 7.5 | ..... | E | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.82 | 757.4 | 29.82 | 757.4 | 53.4 | 11.9 | 75 | E | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.80 | 757.0 | 29.85 | 758.2 | 55.2 | 12.9 | 48 | SE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | Slightlycl'dy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.00 | 761.9 | 30.05 | 763.3 | 35.2 | 1.8 | 63 | WNW | 2.9 | 1.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.92 | 760.0 | 29.96 | 761.0 | 30.2 | — 1.0 | 76 | NW | 22 | 10 | ..... | ..... | 8 | ..... | ..... | 0.217 | 5.5 | ..... | |
| Christiania | 29.93 | 760.3 | 30.09 | 764.2 | 36.1 | 2.3 | 53 | ESE | 2 | 1 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.60 | 751.9 | 29.65 | 753.0 | 28.0 | — 2.2 | 75 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | ..... | 0.193 | 4.9 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.16 | 766.1 | 30.36 | 771.1 | 53.8 | 12.1 | 74 | NNW | 4.9 | 2.2 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.46 | 722.8 | 29.49 | 749.1 | 57.6 | 14.2 | 57 | W | 9.4 | 4.2 | ..... | ..... | 7 | W | ..... | 0.232 | 5.9 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 29.88 | 759.0 | 29.97 | 761.2 | 63.0 | 17.2 | 50 | WSW | 11.9 | 5.3 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.11 | 739.5 | 29.48 | 748.7 | 52.3 | 11.3 | 77 | W | 17.4 | 7.8 | ..... | ..... | 10 | ..... | ..... | 0.280 | 7.1 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.25 | 768.4 | 30.32 | 770.2 | 54.7 | 12.6 | 70 | N | 23.0 | 10.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa Com'd.t. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | ..... | ..... | 29.93 | 760.2 | 84.6 | 29.2 | ..... | SW | ..... | ..... | 3 | ..... | 4 | ..... | SW | 2 | SW | D. clouds | A. J. de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa, Porto de S. Jose de Bissao, Senegambia | ..... | ..... | 29.94 | 760.5 | 82.4 | 28 | ..... | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | ..... | Blue sky | A. Ferreira, 2d Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | 29.78 | 756.5 | 86.9 | 30.5 | ..... | WNW | ..... | ..... | 2 | ..... | 8 | ..... | WSW | ..... | ..... | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 29.92 | 759.9 | 67.5 | 19.7 | ..... | ESE | ..... | ..... | 1 | ..... | 2 | ..... | ESE | 1 | ..... | D. clouds | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.71 | 754.7 | 30.15 | 765.9 | 34.9 | 1.6 | 64 | SE | 2 | 1 | ..... | ..... | 1c | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.63 | 752.5 | 30.06 | 763.5 | 36.3 | 2.4 | 67 | W | 7 | 3 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.66 | 753.4 | 29.91 | 759.8 | 30.4 | — 0.9 | 56 | WNW | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.72 | 755.0 | 29.74 | 755.4 | 25.2 | — 3.8 | 71 | NNW | 16 | 7 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.41 | 747.0 | 30.07 | 763.8 | 35.1 | 1.7 | 68 | NW | 11 | 5 | ..... | ..... | 10ks;s | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 30.08 | 764.0 | 30.15 | 765.8 | 44.1 | 6.7 | 58 | NNW | 13 | 6 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.08 | 764.1 | 30.10 | 764.6 | 44.6 | 7.0 | 87 | NW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.25 | 743.0 | 29.83 | 757.6 | 27.3 | — 2.6 | 85 | N | 9 | 4 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | Light snow. | Meteorological Obs. |
| Lugan | 29.83 | 757.7 | 30.04 | 763.1 | 36.0 | 2.2 | 56 | NE | 4 | 2 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.69 | 754.2 | 29.71 | 754.7 | 16.5 | — 8.6 | 73 | Calm | 0 | 0 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | Capt. Sselliwerstow. |
| Tiflis | 28.63 | 727.1 | 30.03 | 762.8 | 61.2 | 16.2 | 22 | S | 4 | 2 | ..... | ..... | 2c | ..... | ..... | ..... | ..... | Light clouds | Physical Observatory. |
| Astrakhan | 30.14 | 765.5 | 30.06 | 763.4 | 54.1 | 12.3 | 34 | S | 11 | 5 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.58 | 751.4 | 30.09 | 764.2 | 22.3 | — 5.4 | 55 | S | 2 | 1 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.71 | 754.5 | 29.99 | 761.8 | 19.4 | — 7.0 | 65 | SSE | 9 | 4 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 28.96 | 735.6 | 29.99 | 761.7 | 17.6 | — 8.0 | 80 | WSW | 22 | 10 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.97 | 761.1 | 30.20 | 767.1 | 52.3 | 11.3 | 3 | NE | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.57 | 725.6 | 30.28 | 769.0 | 56.5 | 13.6 | 50 | SW | 13 | 6 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 30.03 | 762.8 | 30.57 | 776.5 | 21.2 | — 6.0 | 75 | NE | 4 | 2 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeniseisk | 30.28 | 769.2 | 30.59 | 777.0 | 28.0 | — 2.2 | 49 | W | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 29.82 | 757.3 | 29.96 | 760.9 | 44.2 | 6.8 | 53 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.71 | 754.5 | 29.80 | 757.0 | 32.0 | 0.0 | 76 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | 29.69 | 754.1 | 29.78 | 756.3 | 19.4 | — 7.0 | 89 | Calm | 0 | 0 | ..... | ..... | 9n | ..... | ..... | ..... | ..... | Snowing | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455 m., or 1,492.7 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165.2 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.35 | 745.4 | 29.45 | 748.1 | 56.7 | 13.7 | 82 | E | 13.9 | 6.22 | ..... | ..... | 10 | ..... | ..... | 0.030 | 0.76 | Covered | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 29.35 | 745.4 | 29.40 | 746.8 | • 63.7 | 17.6 | 70 | SE | 4.4 | 1.98 | ..... | 0 | 10 | ..... | ..... | 0.075 | 1.9 | Covered | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.44 | 671.5 | ..... | ..... | 48.2 | 9.0 | 92 | N | 5.8 | 2.61 | ..... | 0 | 8 | ..... | ..... | 0.039 | 1.0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Osservatory | 27.93 | 709.4 | ..... | ..... | 48.0 | 8.9 | 91 | W | 13.5 | 6.05 | ..... | 0 | 10 | ..... | ..... | 0.787 | 20.0 | Covered | The Staff. |
| Murcia, Met. Obs'y | 29.26 | 743.2 | 29.41 | 747.1 | 59.0 | 15.0 | 80 | WSW | 8.0 | 1.33 | ..... | 5 | 5 | ESE | ..... | 0.331 | 8.40 | Raining | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.46 | 722.9 | 29.36 | 745.8 | 58.5 | 14.7 | 64 | SSW | 0 | 0 | ..... | 0 | 10 | ..... | ..... | 0 | 0 | Covered | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.09 | 764.1 | 30.15 | 765.9 | 72.1 | 22.3 | 79 | N | 10.1 | 4.5 | ..... | 2ck | 5k | W | NNE | 0.429 | 10.9 | Fair | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.75 | 755.7 | 29.80 | 757.0 | 82.7 | 28.2 | 79 | W | 11.2 | 5.0 | ..... | 2c | 3c | E | E | 0.12 | 3.4 | Covered | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.52 | 749.9 | 29.62 | 752.4 | 59.7 | 15.4 | 75 | WSW | 19.4 | 8.7 | ..... | 0 | 7 | ..... | W | 0.414 | 10.5 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I | 30.04 | 762.9 | 30.13 | 765.2 | 74.5 | 23.6 | 90 | SE | 0 | 0 | ..... | 4k | 4k | SE | SE | 0 | 0 | Cloudy | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instru-m'tal error and temperature. Inches. | Barometer. Corrected for instru-m'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From—. | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.81 | 757.2 | 29.85 | 758.2 | 9.3 | —12.6 | ..... | S | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.80 | 756.9 | 29 85 | 758.2 | 33.4 | 0.8 | 85 | NW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.85 | 758.3 | 29.91 | 759.6 | 36.7 | 2.6 | 55 | NW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.83 | 757.7 | 30.01 | 762.2 | 33.1 | 0.6 | 61 | W | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.96 | 760.9 | 30.02 | 762.4 | 38.1 | 0.6 | 78 | WNW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.91 | 759.7 | 29.98 | 761.6 | 34.9 | 1.6 | 69 | WNW | 8.9 | 4.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.35 | 720.0 | 29.78 | 756.4 | 51.8 | 10.7 | 56 | NNE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | Covered ..... | The Observatory. |
| Zurich | 28.18 | 715.7 | 29.81 | 757.2 | 55.4 | 13.0 | 49 | E | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Light clouds | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —4.6 mm.; Thermometer, +2.5 Cent.; Relative Humidity, —4 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.16 | 766.1 | 48.6 | 9.2 | 70 | NNE | 14 | 6.5 | ..... | ..... | 10 | ..... | N | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Valona | ..... | ..... | 30.12 | 765.1 | 60.1 | 15.6 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Clear.. ..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria.) Lee Obs'y | 29.75 | 755.6 | 29.86 | 758.5 | 67.3 | 19.6 | 70 | NW | ..... | ..... | 1 | 3c | ..... | ..... | ..... | 0 | 0 | D. clouds..... | Prof. C.V. A.Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale, 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.06 | 763.5 | 30.13 | 765.3 | 15.6 | — 9.1 | 66 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.87 | 758.7 | 30.20 | 767.1 | 20 | — 6.7 | ..... | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | W. R. Bigg. |
| *Chatham, N B | 30.07 | 763.8 | 30.14 | 765.5 | 0 | —17.8 | 94 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | G. A. Blair. |
| Charlottetown, P. E. Island | 30.12 | 765.0 | 30.17 | 766.3 | 22 | — 5.6 | 80 | W | 4 | 1.8 | ..... | 0 | 5s | ..... | ..... | 0.095 | 2.42 | Cloudy..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.93 | 760.2 | 30.14 | 765.5 | 12.7 | —10.7 | 98 | W | ..... | ..... | 2 | 0 | 1s | ..... | ..... | 0 | 0 | Clear..... | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | 29.62 | 752.3 | 29.67 | 753.6 | 42.6 | 5.9 | 91 | Calm | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Overcast.... | W. H. Bevis. |
| *Father Point, Quebec | 30.06 | 763.5 | 30.08 | 764.0 | 14 | —10.0 | 94 | S | 30 | 13.4 | ..... | 2k | 0 | W | ..... | 0.10 | 2.5 | Clear..... | J. McWilliams. |
| Fredericton, N. B | 30.13 | 765.3 | 30.20 | 767.1 | 2.1 | —16.6 | 100 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.26 | 743.2 | 30.21 | 767.3 | —14 | —25.6 | 100 | NW | 5 | 2.2 | ..... | 0 | 2s | ..... | W | 0 | 0 | Fair..... | James Stewart. |
| Granton, Ontario | 28.98 | 736.1 | 30.18 | 766.6 | 15 | — 9.4 | ..... | SW | ..... | ..... | 1 | 4cs | 0 | ..... | ..... | Inap. | Inap. | Fair... ..... | James Grant. |
| *Halifax, N. S | 29.93 | 760 2 | 30.07 | 763.8 | 27 | — 2.8 | 88 | Calm | 0 | 0 | ..... | ..... | 8ks | ..... | W | 0.464 | 10.26 | Fair ..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.81 | 757.2 | 30.21 | 767.3 | 19.3 | — 7.1 | 80 | SW | ..... | ..... | 1 | 5ck | 0 | SW | ..... | 0 | 0 | Fair ..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.83 | 757.7 | 30.19 | 766.8 | 14 | —10.0 | 67 | N | 2 | 0.9 | ..... | 10cs | Sm'e | Calm | NE | 0 | 0 | Cloudy..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.01 | 762.2 | 30.05 | 763.3 | 27.8 | — 2.3 | 89 | SW | 2 | 0.9 | ..... | 9k | 0 | SW | ..... | 0.08 | 2.0 | Cloudy..... | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 29.91 | 759.7 | 30.13 | 765.3 | 15 | — 9.4 | 73 | SW | 18 | 8.0 | ..... | 0 | 2s | ..... | ..... | 0 | 0 | Clear..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.37 | 746.0 | 30.15 | 765.8 | 3 | —16.1 | 68 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Rev. R. Mosley. |
| Peterboro, Ontario | 29.36 | 745.7 | 30.18 | 766.6 | 8.7 | —12.9 | 46 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | ..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.43 | 747.5 | 30.17 | 766.3 | 20 | — 6.7 | 70 | SW | 6 | 2.7 | ..... | 10n | 0 | NW | ..... | 0.04 | 1.0 | Cloudy..... | H. Morgan. |
| Port Hastings, N. S | 30.00 | 762.0 | 30.05 | 763.3 | 29.7 | — 1.3 | ..... | W | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine..... | Peter Grant. |
| Port Stanley, Ontario | 29.60 | 749.3 | 30.19 | 766.8 | 22 | — 5.6 | 78 | W | 4 | 1.8 | ..... | ..... | 8ks | ..... | W | Inap. | Inap. | Cloudy..... | M. Payne. |
| *Quebec, Quebec | 29.80 | 756.9 | 30.15 | 765.8 | 8 | —13.3 | 89 | Calm | 0 | 0 | ..... | Haze | Fog | ..... | ..... | 0 | 0 | Foggy ..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.62 | 752 3 | 30.14 | 765.5 | — 7 | —21.7 | 80 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | SW | 0 | 0 | Cloudy..... | W. H. McIntyre. |
| St. Andrews, N. B | 30.09 | 764.3 | 30.14 | 765.5 | 17 | — 8.3 | 71 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Dr. Gove. |
| St. John, N. B | 29.98 | 761.5 | 30.16 | 766.1 | 19 | — 7.2 | 69 | N | 3 | 1.3 | ..... | 0 | 1cs | ..... | ..... | 0 | 0 | Fair... ..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.35 | 745.5 | 30.12 | 765.0 | 15 | — 9.4 | 88 | S | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear..... | K. Stewart., |
| Stayner, Ontario | 29.29 | 744.0 | 30.14 | 765.5 | 16 | — 8.9 | 84 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear. ..... | R. J. Cole. |
| Stratford, Ontario | 28.78 | 731.0 | 30.18 | 766.6 | 10.4 | —12.0 | 90 | SW | 3.0 | 1.3 | ..... | 1c;cs | 2s | W | ..... | 0 | 0 | Fair ..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.03 | 762.8 | 30.07 | 763.8 | 27 | — 2.8 | 66 | N | 10 | 4.5 | ..... | 10cs | 0 | SW | ..... | 0.22 | 5.6 | Fair ..... | T. C. Hill. |
| *Toronto, Ontario | 29.77 | 756 1 | 30.18 | 766.6 | 16 | — 8.9 | 83 | W | 10 | 4.5 | ..... | 2cs | 0 | W | ..... | 0.03 | 0.8 | Clear..... | Magnetic Observatory. |
| Windsor, N. S | 30.01 | 762.2 | 30.11 | 764.8 | 25.5 | — 3.6 | 81 | ..... | ..... | ..... | ..... | 4cs | 0 | ..... | ..... | 0 | 0 | Fine..... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 39.0 | 3.9 | 100 | S | ..... | ..... | ..... | 10ks | 10s;n | ..... | ..... | 0.65 | 1.3 | Cloudy ..... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

1879.—March 19.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.98 | 761.5 | 30.23 | 767.8 | 17 | — 8.3 | 75 | W | 2 | 0.9 | ..... | 8k | Sm'e | SW | ..... | 0 | 0 | Fair | |
| Alpena, Michigan | 29.39 | 746.5 | 30.10 | 764.5 | 8 | —13.3 | 55 | W | 4 | 1.8 | ..... | 0 | 2s | ..... | W | 0 | 0 | Clear | |
| Atlanta, Georgia | 29.04 | 737.6 | 30.28 | 767.8 | 40 | 4.4 | 48 | NW | 6 | 2.7 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 30.21 | 767.3 | 30.23 | 767.8 | 28 | — 2.2 | 77 | NW | 4 | 1.8 | ..... | 10c | 0 | N | ..... | 0 | 0 | Cloudy | |
| Augusta, Georgia | 30.03 | 762 8 | 30.22 | 767.6 | 45 | 7.2 | 61 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 30.22 | 767.6 | 30.27 | 768.8 | 33 | 0.6 | 61 | N | 5 | 2.2 | ..... | 5k | Sm'e | NW | Calm | 0 | 0 | Fair | |
| Barnegat, New Jersey | 30.18 | 766.6 | 30.20 | 767.1 | 34 | 1.1 | 79 | E | 5 | 2.2 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Bismarck, Dakota | 28.16 | 715.3 | 30.02 | 762.5 | 2 | —16.7 | 86 | Calm | 0 | 0 | ..... | 1cs | 0 | NW | ..... | 0 | 0 | Clear | |
| Boerne, Texas | 28.73 | 729.7 | 30.14 | 765.5 | 32 | 0.0 | 80 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boise City, Idaho | 26.59 | 683.0 | 29.85 | 758.2 | 43 | 6.1 | 75 | SE | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.48 | 12.2 | Light rain | |
| Boston, Massachusetts | 30.03 | 762.8 | 30.20 | 767.1 | 21 | — 6.1 | 71 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Brackettville, Texas | 29.10 | 739.1 | 30.16 | 766.1 | 60 | 10.0 | 72 | SE | 8 | 3.6 | ..... | ..... | 10ks | ..... | E | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 29.07 | 738.4 | 30.17 | 766.3 | 3 | —16.1 | 88 | W | 8 | 3.6 | ..... | 5k | 2s | NW | Calm | 0 | 0 | Cloudy | |
| Brownsville, Texas | 30.12 | 765.0 | 30.16 | 766.1 | 56 | 13.3 | 94 | NE | 2 | 0.9 | ..... | 0 | 8ks | ..... | S | 0 | 0 | Fair | |
| Buffalo, New York | 29.44 | 747.8 | 30.20 | 767.1 | 17 | — 8.3 | 83 | SW | 6 | 2.7 | ..... | 5ck | Haze | SW | Calm | Inap. | Inap. | Fair | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 58 | 14.4 | 12 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.88 | 758.9 | 30.20 | 767.1 | 16 | — 8.9 | 74 | W | 4 | 1.8 | ..... | 2k | Haze | W | Calm | 0 | 0 | Fair | |
| Cairo, Illinois | 29.99 | 761.7 | 30.41 | 772.4 | 30 | — 1.1 | 68 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.14 | 638.5 | 29.94 | 760 5 | 48 | 8.9 | 29 | NE | 8 | 3.6 | ..... | 2k | 0 | Calm | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 45 | 7.2 | 31 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.46 | 697.5 | 30.03 | 762.8 | 43 | 6.1 | 100 | SW | 6 | 2.7 | ..... | ..... | Fog | ..... | SW | 0 | 0 | Foggy | |
| Cape Hatteras, N. Carolina | 30.19 | 766.8 | 30.19 | 766.8 | 40 | 4.4 | 73 | NE | 13 | 5.8 | ..... | Haze | Haze | ..... | ..... | 0.22 | 5.6 | Hazy | |
| Cape Henry, Virginia | 30.21 | 767.3 | 30.22 | 767.6 | 38 | 3.3 | 63 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.17 | 766.3 | 30.19 | 766.8 | 41 | 5.0 | 82 | NE | 12 | 5.4 | ..... | 10ck | 0 | W | ..... | 0.02 | 0.5 | Cloudy | |
| Cape May, New Jersey | 30.19 | 766.8 | 30.22 | 767.6 | 34 | 1.1 | 70 | N | 7 | 3.1 | ..... | 5cs | 5s | Calm | Calm | 0 | 0 | Cloudy | |
| Castroville, Texas | 29.42 | 747.2 | 30.16 | 766.1 | 41 | 5.0 | 65 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.12 | 765.0 | 30.18 | 766.6 | 50 | 10.0 | 79 | NW | 1 | 0.4 | ..... | 0 | Fog | ..... | Calm | Inap. | Inap. | Clear | |
| Cheyenne, Wyoming | 23.76 | 603.5 | 29.70 | 754.4 | 31 | — 0.6 | 79 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Threatening | |
| Chicago, Illinois | 29.47 | 748.5 | 30.22 | 767.6 | 19 | — 7.2 | 85 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Clear | |
| Cincinnati, Ohio | 29.61 | 752.1 | 30.31 | 769.9 | 28 | — 2.2 | 77 | W | 3 | 1.3 | ..... | 5k | 0 | W | ..... | Inap. | Inap. | Fair | |
| Cleveland, Ohio | 29.37 | 746.0 | 30.14 | 765.5 | 23 | — 5.0 | 60 | S | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Coleman City, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Columbus, Ohio | 29.38 | 746.2 | 30.27 | 768.8 | 23 | — 5.0 | 73 | S | 3 | 1.3 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Concho, Texas | 28.24 | 717.3 | 30.00 | 762.0 | 34 | 1.1 | 51 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.77 | 756.1 | 30.26 | 768.6 | 40 | 4.4 | 65 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.58 | 751.3 | 30.28 | 769.1 | 18 | — 7.8 | 68 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Deadwood, Dakota | 25.12 | 638.0 | ..... | ..... | 10 | —12.2 | 79 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Decatur, Texas | 29.05 | 737.9 | 30.28 | 769 1 | 37 | 2.8 | 38 | NE | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.45 | 748.0 | 30.29 | 769.4 | 36 | 2.2 | 61 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.61 | 622.5 | 29.73 | 755.1 | 25 | — 3.9 | 75 | SW | 4 | 1.8 | ..... | 5ck | 5s | NW | NW | 0 | 0 | Cloudy | |
| Des Moines, Iowa | 29.32 | 744.7 | 30.30 | 769.6 | 7 | —13.9 | 77 | W | 3 | 1.3 | ..... | 0 | Sm'e | ..... | Calm | 0.22 | 5.6 | Clear | |
| Detroit, Michigan | 29.45 | 748.0 | 30.17 | 766.3 | 20 | — 6.7 | 85 | SW | 4 | 1.8 | ..... | 10k | 0 | NW | ..... | Inap. | Inap. | Cloudy | |
| Dodge City, Kansas | 27.48 | 698.0 | 29.90 | 759.4 | 24 | — 4.4 | 87 | S | 8 | 3.6 | ..... | 0 | 8s | ..... | SW | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 29.49 | 749.0 | 30.25 | 768.3 | 14 | —10.0 | 64 | W | 7 | 3.1 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Duluth, Minnesota | 29.37 | 746.0 | 30.12 | 765.0 | 6 | —14.4 | 76 | SW | 2 | 0.9 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Eagle Pass, Texas | 29.41 | 747.0 | 30.18 | 766.6 | 48 | 8.9 | 63 | SE | 3 | 1.3 | ..... | 0 | 5s | ..... | SE | 0 | 0 | Fair | |
| Eastport, Maine | 30.09 | 764.3 | 30.16 | 766.1 | 21 | — 6.1 | 71 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 67 | 19.4 | 79 | Calm | ..... | ..... | 0 | ..... | 8s | ..... | S | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.18 | 665.0 | ..... | ..... | 46 | 7.8 | 33 | N | 2 | 0.9 | ..... | 1cs | 0 | N | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.44 | 747.8 | 30.20 | 767.1 | 23 | — 5.0 | 86 | Calm | 0 | 0 | ..... | 10ck | 0 | W | ..... | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.39 | 746.5 | 30.11 | 764.8 | 6 | —14.4 | 52 | W | 5 | 2.2 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| Florence, Arizona | 28.45 | 722.6 | 30.05 | 763.3 | 47 | 8.3 | 34 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.98 | 710.7 | ..... | ..... | — 2 | —18.9 | 67 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.38 | 644.6 | 29.45 | 748.0 | 49 | 9.4 | 32 | SW | 5 | 2.2 | ..... | 0 | 5s | ..... | SW | 0 | 0 | Fair | |
| Fort Davis, Texas | 25.19 | 639.8 | 30.15 | 765.8 | 46 | 7.8 | 67 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.75 | 755.6 | 30.33 | 770.4 | 28 | — 2.2 | 54 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.91 | 734.3 | 30.26 | 768.6 | 31 | — 0.6 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.35 | 694.7 | ..... | ..... | 10 | —12.2 | 79 | N | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort McKavett, Texas | 27.90 | 708.6 | 29.90 | 759.4 | 38 | 3.3 | 45 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 29.00 | 736.6 | 30.18 | 766.6 | 31 | — 0.6 | 58 | N | 4 | 1.8 | ..... | 5ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort Stevenson, Dakota | 28.18 | 715.8 | ..... | ..... | —11 | —23.9 | 70 | NW | 1 | 0.4 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fredericksburg, Texas | 29.43 | 747.5 | 30.05 | 763.3 | 42 | 5.6 | 58 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 30.20 | 767.1 | 30.25 | 768.3 | 58 | 11.7 | 67 | E | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Graham, Texas | 29.12 | 739.6 | 30.24 | 768.1 | 33 | 0.6 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.36 | 745.7 | 30.05 | 763.3 | 25 | — 3.9 | 75 | W | 15 | 6.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Indianapolis, Indiana | 29.43 | 747.5 | 30.26 | 768.6 | 25 | — 3.9 | 75 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianola, Texas | 30.21 | 767.3 | 30.24 | 768.1 | 55 | 12.8 | 74 | E | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.96 | 735.6 | 30.15 | 765.8 | 38 | 3.3 | 63 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.20 | 767.1 | 30.22 | 767.6 | 54 | 12.2 | 74 | NE | 4 | 1.8 | ..... | 0 | 5s | ..... | NE | 0.02 | 0.5 | Clearing | |
| Keokuk, Iowa | 29.61 | 752 1 | 30.28 | 769.1 | 19 | — 7.2 | 77 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Key West, Florida | 30.13 | 765.3 | 30.16 | 766.1 | 68 | 20.0 | 74 | N | 7 | 3.1 | ..... | 8k | 0 | N | ..... | 0.01 | 0.3 | Fair | |
| Kittyhawk, North Carolina | 30.17 | 766.3 | 30.19 | 766.8 | 38 | 3.3 | 72 | NE | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Knoxville, Tennessee | 29.25 | 742.9 | 30.32 | 770.1 | 32 | 0.0 | 84 | N | 1 | 0.4 | ..... | Haze | 8ks | ..... | W | 0 | 0 | Foggy | |
| La Crosse, Wisconsin | 29.39 | 746.5 | 30.19 | 766.8 | 17 | — 8.3 | 51 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.03 | 661.2 | 30.18 | 766.6 | 40 | 4.4 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.76 | 755.9 | 30.11 | 764.8 | 49 | 9.4 | 55 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.38 | 746.2 | 30.30 | 769.6 | 15 | — 9.4 | 65 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.71 | 754.6 | 30.06 | 763.5 | 53.0 | 11.7 | 90 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.07 | 1.8 | Light rain | |
| Louisville, Kentucky | 29.70 | 754.4 | 30.29 | 769.4 | 32 | 0.0 | 69 | W | 5 | 2.2 | ..... | ..... | 10n | ..... | W | Inap. | Inap. | Light snow | |
| Lynchburg, Virginia | 29.52 | 749.8 | 30.24 | 768.1 | 35 | 1.7 | 52 | N | 1 | 0.4 | ..... | 0 | 8ks | ..... | N | 0 | 0 | Cloudy | |
| Madison, Wisconsin | 29.12 | 739.6 | 30.18 | 766.6 | 17 | — 8.3 | 67 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.28 | 743.7 | 30.05 | 763.3 | 8 | —13.3 | 55 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.56 | 725.4 | 30.42 | 772.6 | 34 | 1.1 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 30.03 | 762 8 | 30.37 | 771.4 | 35 | 1.7 | 69 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29 40 | 746.7 | 30.18 | 766.6 | 21 | — 6.1 | 71 | SW | 11 | 4.9 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Mobile, Alabama | 30.26 | 768.6 | 30.31 | 769.9 | 41 | 5.0 | 74 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 30.07 | 763.8 | 30.32 | 770.1 | 42 | 5.6 | 58 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Morgantown, West Virginia | 29.13 | 739.9 | 30.23 | 767.8 | 36 | 2.2 | 61 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mt. Washington, N. H. | 23.49 | 596.6 | 29.85 | 758.2 | 4 | —15.6 | 100 | NW | 45 | 20.1 | ..... | ..... | Fog | ..... | NW | 0 | 0 | Foggy | |
| Nashville, Tennessee | 29.78 | 756.4 | 30.35 | 770.9 | 32 | 0.0 | 79 | W | 2 | 0.9 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 30.09 | 764.3 | 30.22 | 767.6 | 24 | — 4.4 | 74 | N | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New London, Connecticut | 30.17 | 766.3 | 30.22 | 767.6 | 30 | — 1.1 | 57 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Orleans, Louisiana | 30.22 | 767.6 | 30.28 | 769.1 | 49 | 9.4 | 51 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 30.13 | 765.3 | 30.18 | 766.6 | 29 | — 1.7 | 67 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New York, New York | 30.05 | 763.3 | 30.24 | 768.1 | 31 | — 0.6 | 68 | N | 4 | 1.8 | ..... | Haze | 2s | Calm | Calm | 0 | 0 | Fair | |
| Norfolk, Virginia | 30.17 | 766.8 | 30.23 | 767.8 | 37 | 2.8 | 71 | NE | 4 | 1.8 | ..... | 2cs | 5s | W | Calm | 0 | 0 | Fair | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From—. | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 26.96 | 684.8 | 29.65 | 753.1 | 22 | — 5.6 | 72 | SE | 5 | 2.2 | ..... | 2c | 0 | W | ..... .. | 0 | 0 | Clear..... | |
| Olympia, Washington Ter.. | 29.04 | 752.8 | 29.68 | 753.9 | 47.1 | 8.3 | 92 | SW | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light rain.... | |
| Omaha, Nebraska | 29.00 | 736.6 | 30.20 | 767.1 | 15 | — 9.4 | 82 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Oswego, New York | 29.86 | 758.4 | 30.20 | 767.1 | 28 | — 2.2 | 77 | W | 8 | 1.3 | ..... | 2c | 2s | W | W | 0 | 0 | Fair... ..... | |
| Pembina, Dakota | 29.24 | 742.7 | 30.20 | 767.1 | —17 | —27.2 | 100 | NW | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear..... | |
| Philadelphia, Pa | 30.18 | 766.6 | 30.23 | 767.8 | 31 | — 0.6 | 79 | N | 4 | 1.8 | ..... | 10ck | 0 | NW | ..... | 0 | 0 | Cloudy..... | |
| Phœnix, Arizona | 28.75 | 730.2 | 30.55 | 776.0 | 54 | 12.2 | 43 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Pike's Peak, Colorado | 17.46 | 443.5 | 29.67 | 753.6 | 10 | —12.2 | 18 | W | 16 | 7.2 | ..... | 8k | 0 | W | ..... | 0 | 0 | Cloudy..... | |
| Pioche, Nevada | 23.62 | 605.0 | 29.59 | 751.6 | 38.5 | 3.6 | 38 | S | 7 | 3.1 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear..... | |
| Pittsburg, Pennsylvania | 29.39 | 746.5 | 30.27 | 768.8 | 21 | — 6.1 | 71 | NW | 2 | 0.9 | ..... | 2c | Sm'e | NW | Calm | 0 | 0 | Fair..... | |
| Port Huron, Michigan | 29.45 | 748.0 | 30.16 | 766.1 | 21 | — 6.1 | 86 | SW | 4 | 1.8 | ..... | 2ck | 2ks | W | Calm | 0 | 0 | Fair..... | |
| Portland, Maine | 30.14 | 765.5 | 30.19 | 766.8 | 20 | — 6.7 | 70 | N | 3 | 1.3 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear..... | |
| Portland, Oregon | 29.70 | 754.4 | 29.80 | 756.9 | 48.5 | 9.2 | 93 | SE | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy..... | |
| Prescott, Arizona | 24.63 | 625.6 | 29.99 | 761.7 | 45 | 7.2 | 46 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Pilot Point, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Punta Rassa, Florida | 30.17 | 766.3 | 30.19 | 766.8 | 61 | 16.1 | 77 | NE | 11 | 4.9 | ..... | 5k | 0 | NE | ..... | 0 | 0 | Fair..... ..... | |
| Red Bluff, California | 29.55 | 750.6 | 29.91 | 759.7 | 49 | 9.4 | 85 | SE | 24 | 10.7 | ..... | 0 | 5ks | ..... | SE | 0.36 | 9.1 | Fair..... | |
| Rio Grande City, Texas | 30.01 | 762.2 | 30.24 | 768.1 | 56 | 13.3 | 87 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Rochester, New York | 29.53 | 750.0 | 30.19 | 766.8 | 19 | — 7.2 | 69 | SW | 7 | 3.1 | ..... | 1k | 0 | W | ..... | 0 | 0 | Clear..... | |
| Roseburg, Oregon | 29.23 | 742.4 | 29.80 | 756.9 | 43.0 | 6.1 | 98 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | Calm | 0.37 | 9.7 | Fair ..... | |
| Sacramento, California | 29.92 | 760.0 | 30.00 | 762.0 | 49.5 | 9.7 | 88 | S | 8 | 3.6 | ..... | ..... | 10n | ..... | S | 1.53 | 38.9 | Light rain.... | |
| St. Louis, Missouri | 29.76 | 755.9 | 30.38 | 771.6 | 24 | — 4.4 | 61 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| St. Marks, Florida | 30.23 | 767.8 | 30.24 | 768.1 | 48 | 8.9 | 78 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| St. Paul, Minnesota | 29.25 | 742.9 | 30.16 | 766.1 | 9 | —12.8 | 57 | SW | 4 | 1.8 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Clear..... | |
| Salt Lake City, Utah | 25.86 | 644.1 | 29.09 | 754.1 | 49 | 9.4 | 57 | NW | 4 | 1.8 | ..... | 0 | 8ks | ..... | W | 0 | 0 | Cloudy..... | |
| San Antonio, Texas | 29.51 | 749.5 | 30.12 | 765.0 | 45 | 7.2 | 63 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| San Diego, California | 30.00 | 762.0 | 30.08 | 764.0 | 55.5 | 13.1 | 81 | W | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Sandusky, Ohio | 29.51 | 749.5 | 30.23 | 767.8 | 25 | — 3.9 | 75 | SW | 10 | 4.5 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear ..... | |
| Sandy Hook, New Jersey | 30.17 | 766.3 | 30.21 | 767.3 | 30 | — 1.1 | 67 | NE | 10 | 4.5 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair... ..... | |
| San Francisco, California | 29.92 | 760.0 | 29.98 | 761.5 | 54.7 | 12.6 | 80 | W | 8 | 3.6 | ..... | ..... | 10ks | ..... | W | 0.25 | 6.3 | Cloudy..... | |
| Santa Fé, New Mexico | 28.16 | 688.2 | 29.70 | 754.4 | 32 | 0.0 | 59 | W | 1 | 0.4 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Clear..... | |
| Savannah, Georgia | 30.11 | 764.8 | 30.20 | 767.1 | 53 | 11.7 | 80 | SW | 6 | 2.7 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear..... | |
| Shreveport, Louisiana | 30.06 | 763.5 | 30.29 | 769.4 | 39 | 3.9 | 91 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Silver City, New Mexico | 24.24 | 615.7 | 30.56 | 776.2 | 35 | 1.7 | 52 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Smithville, North Carolina | 30.17 | 766.3 | 30.21 | 767.3 | 38 | 3.3 | 100 | NE | 4 | 1.8 | ..... | 8ck | Fog | SW | Calm | 0.02 | 0.5 | Cloudy..... | |
| Springfield, Massachusetts | 30.09 | 764.3 | 30.23 | 767.8 | 20 | — 6.7 | 56 | NE | 2 | 0.9 | ..... | 0 | 8ks | ..... | W | 0 | 0 | Cloudy..... | |
| Stockton, Texas | 27.00 | 685.8 | 30.00 | 762.0 | 43 | 6.1 | 67 | SE | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Thatcher's Island, Mass | 30.11 | 764.8 | 30.16 | 766.1 | 34 | 1.1 | 61 | NE | 14 | 6.3 | ..... | 1cs | 0 | NE | ..... | 0 | 0 | Clear. ..... | |
| Toledo, Ohio, | 29.46 | 748.3 | 30.18 | 766.6 | 28 | — 2.2 | 77 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Tucson, Arizona | 29.49 | 749.0 | 30.04 | 763.0 | 50 | 10.0 | 44 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Umatilla, Oregon | 29.42 | 747.2 | 29.90 | 759.4 | 45.5 | 7.5 | 88 | SW | 12 | 5.4 | ..... | ..... | 10n | ..... | SW | 0.25 | 6.3 | Light rain.... | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 32 | 0.0 | 79 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0.68 | 14.7 | Clear..... | |
| Uvalde, Texas | 29.31 | 744.5 | 30.14 | 765.5 | 45 | 7.2 | 81 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair..... | |
| Vicksburg, Mississippi | 30.08 | 764.0 | 30.35 | 770.9 | 40 | 4.4 | 66 | NE | 2 | 0.9 | ..... | 0 | 5s | ..... | SE | 0 | 0 | Clear..... | |
| Virginia City, Montana | 23.96 | 608.3 | 29.44 | 747.8 | 28 | — 2.2 | 66 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy..... | |
| Visalia, California | 29.64 | 752.8 | 30.02 | 762.5 | 48.5 | 9.2 | 87 | NW | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.29 | 7.4 | Fair ..... | |
| Washington, D. C | 30.16 | 766.1 | 30.28 | 769.1 | 31 | — 0.6 | 79 | NW | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | Inap. | Inap. | Light snow. | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 46 | 7.8 | 54 | Calm | ..... | ..... | 0 | 10cs | 10n | Haze | Calm | Calm | 0 | 0 | Cloudy..... . |
| Wilmington, N. Carolina | 30.11 | 764.8 | 30.20 | 767.1 | 37 | 2.8 | 81 | Calm | 0 | 0 | ..... | 8ck | 0 | SW | ..... | 0.02 | 0.5 | Fair ..... | |
| Winnemucca, Nevada | 25.44 | 646.2 | 29.60 | 756.9 | 36 | 2.2 | 61 | SW | 11 | 4.9 | ..... | 0 | 5s | SW | ..... | 0.07 | 1.8 | Fair..... ..... | |
| Wood's Holl, Mass | 30.13 | 765.3 | 30.17 | 766.3 | 30 | — 1.1 | 48 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Yankton, Dakota | 26.82 | 732.0 | 30.24 | 768.1 | 8 | —13.3 | 78 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear... ..... | |
| Yuma, Arizona | 29.77 | 756.1 | 29.93 | 760.2 | 68 | 14.4 | 58 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.68 | 728.5 | 30.19 | 766.8 | 25 | — 3.9 | 63 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.10 | 764.5 | 30.15 | 765.8 | 72 | 22.2 | 75 | NW | 9.6 | 4.3 | ..... | 0 | 0 | ..... | ..... | 0.40 | 10.2 | Clear. ..... | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.30 | 642.6 | ..... | ..... | 64.0 | 17.8 | 87 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.78 | 19.8 | ..... ..... | Thomas Herran. |
| Navassa, W. I | 30.02 | 762.5 | 30.10 | 764.5 | 79 | 26.1 | ..... | E | 4.6 | 2.1 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair..... | W. H. W. Jones. |
| Paramaribo, D. Guiana, S.A | 30.06 | 763.5 | 30.06 | 763.5 | 80 | 26.7 | 87 | E | ..... | ..... | 2 | 4c | 5k | E | ..... | 0.470 | 11.94 | Fair..... | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,600 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,160. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,642 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft.. or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.855 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.90 | 759.4 | 52 | 11.1 | 54 | 12.2 | 87 | SW | 25 | 11.2 | .... | ..... | 8 | ..... | SW | 0.61 | 15.5 | ..... | ..... | Cloudy | |
| Navy Yard, Pensacola, Fla. | 30.32 | 770.1 | 48 | 8.9 | 48 | 8.9 | 63 | NE | 10 | 4.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Navy Yard, Portsmouth, N.H | 30.04 | 763.0 | 69 | 20.6 | 28 | — 2.2 | 77 | NW | 4 | 1.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Naval Hospital, Yokohama, Japan | 29.91‡ | 759.7‡ | ..... | ..... | 42 | 5.6 | 79 | NNE | ..... | ..... | 2 | ..... | 10k;s | ..... | W | Light | Light | ..... | ..... | Cloudy | |
| Adams, Panama | 30.09 | 762.0 | 79 | 26.1 | 78 | 25.6 | 95 | NW | ..... | ..... | 2 | ..... | 8 | ..... | N;W | ..... | ..... | ..... | ..... | Fair | |
| Alaska, San Francisco, Cal. | 29.99‡ | 761.7‡ | ..... | ..... | 53 | 11.7 | 86 | S | ..... | ..... | 3 | ..... | 10 | ..... | N | 0.225 | 5.72 | Smooth | ..... | Raining | |
| Alliance, Leghorn, Italy | 29.96‡ | 761.0‡ | ..... | ..... | 60 | 15.6 | 65 | E | ..... | ..... | 1 | ..... | 10 | ..... | S;E | ..... | ..... | Light | S | Misty | |
| Ashuelot, Hong-Kong China | 30.02‡ | 762.5‡ | ..... | ..... | 61 | 16.1 | 55 | NNE | ..... | ..... | 3 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Overcast | |
| Canonicus, New Orleans, La. | 30.26 | 768.6 | 42 | 5.6 | 50 | 10.0 | 86 | NE | ..... | .... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Colorado, New York, N. Y. | 30.19 | 766.8 | 33 | 0.6 | 30 | — 1.1 | ..... | N | 3 | 1.3 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Constitution Lisbon, Portugal | 29.47‡ | 748.5‡ | ..... | ..... | 56 | 13.3 | 100 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Overcast | |
| Despatch, Naples, Italy | 29.99‡ | 761.7‡ | ..... | ..... | 65 | 18.3 | 58 | SSE | ..... | ..... | 2 | ..... | 8 | ..... | Calm | ..... | ..... | Smooth | ..... | Fair | |
| Franklin, Norfolk, Va. | 30.31† | 769.9† | 60 | 15.6 | 40 | 4.4 | 73 | NNE | 4.8 | 2.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Gettysburg, Genoa, Italy | 29.87‡ | 758.7‡ | ..... | ..... | 59 | 15.0 | 94 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.1 | 3. | ..... | ..... | Drizzling | |
| Hartford, Montevideo, Uruguay | 30.07 | 763.8 | 71 | 21.7 | 70 | 21.1 | 90 | SSE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.082 | 20.8 | Smooth | ..... | Cloudy | |
| Lackawana, Payta, Peru | 29.78‡ | 756.4‡ | ..... | ..... | 72 | 22.2 | 85 | ESE | ..... | ..... | 1 | ..... | 2 | ..... | S | 0 | 0 | Smooth | ..... | Clear | |
| Michigan, Erie, Pa. | 30.06 | 763.5 | ..... | ..... | 22 | — 5.6 | 86 | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy | |
| Monocacy. Shanghai, China | 30.17‡ | 766.3‡ | ..... | ..... | 42 | 5.6 | 83 | ESE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Monongahela, Yokohama, Japan | 29.88‡ | 758.9‡ | ..... | ..... | 44 | 6.7 | 54 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Hazy | |
| New Hampshire, Port Royal, S. C. | 30.22 | 767.6 | 55 | 12.8 | 54 | 12.2 | 80 | SW | 16 | 7.2 | ..... | ..... | 2 | ..... | SW | 0 | 0 | ..... | ..... | Clear | |
| Onward, Callao, Peru | 30.08 | 764.0 | ..... | ..... | 68 | 20.0 | 90 | SE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Long | W | Misty | |
| Palos, Tientsin, China | 29.97 | 761.2 | 42 | 5.6 | 42 | 5.6 | 74 | W | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Passaic, Washington, D. C. | ..... | ..... | ..... | ..... | 40 | 4.4 | 73 | SE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Fair | |
| Pensacola. Valparaiso, Chili | 29.98‡ | 761.5‡ | ..... | ..... | 61 | 16.1 | 88 | E | 4.5 | 2.0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy | |
| Plymouth. N. 37° 36′, W. 61° 18′ | 29.87‡ | 758.7‡ | ..... | ..... | 65 | 18.3 | 89 | S | ..... | ..... | 6–7 | ..... | 10 | ..... | ..... | ..... | ..... | Mod'ate | SW | Cloudy | |
| Powhatan, St. Thomas, W. I. | 30.14‡ | 765.5‡ | ..... | ..... | 82 | 27.8 | 71 | ESE | ..... | ..... | 2 | ..... | 0? | .... | ESE? | 0 | 0 | Smooth | SE | Clear | |
| Quinnebaug, N. 38° 39′, E. 2° 21′ | 29.46‡ | 748.3‡ | ..... | ..... | 57 | 13.9 | 94 | WNW | ..... | ..... | 6 | ..... | 8 | ..... | SE | ..... | ..... | Rough | S;E | Cloudy | |
| Ranger. Foochow, China | 30.11‡ | 764.8‡ | ..... | ..... | 57 | 13.9 | 81 | E | ..... | ..... | 3 | ..... | 8 | ..... | W | ..... | ..... | Smooth | ..... | Cloudy | |
| Richmond, N. 27° 10′, E. 34° 23′ | 29.77‡ | 756.1‡ | ..... | ..... | 76 | 24.4 | 52 | NNE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear | |
| Rio Bravo, Brownsville, Texas | 30.11 | 764.8 | 58 | 14.4 | 56 | 13.3 | 100 | NE | ..... | ..... | 1 | ..... | 5 | ..... | SW | ..... | ..... | ..... | ..... | Fair | |
| Santee, Annapolis, Md. | 30.22‡ | 767.6‡ | ..... | ..... | 30 | 2.2 | 46 | N | ..... | ..... | 2 | ..... | 8 | ..... | W | 0 | 0 | ..... | ..... | Cloudy | |
| Saratoga, Hampton Roads, Va. | 30.23‡ | 767.8‡ | ..... | ..... | 38 | 3.3 | 81 | N | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| St. Louis, League Island, Pa. | 30.12 | 765.0 | 54 | 12.2 | 30 | — 1.1 | ..... | ENE | 3 | 1.3 | ..... | ..... | 2 | ..... | NW | 0 | 0 | ..... | ..... | Fair | |
| Supply, New York, N. Y. | 30.23‡ | 767.8‡ | ..... | ..... | 33 | 0.6 | 89 | N | ..... | ..... | 2 | ..... | 5 | ..... | N | ..... | ..... | ..... | ..... | Fair | |
| Trenton Naples, Italy | 30.02‡ | 762.5‡ | ..... | ..... | 69 | 20.6 | 54 | S | ..... | ..... | 1–2 | ..... | 2 | ..... | SSE | 0 | 0 | ..... | ..... | Fair | |
| Tuscarora, Salinas Cruz, Mexico | 29.96‡ | 761.0‡ | ..... | ..... | 77 | 25.0 | 65 | N | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear | |
| Wabash, Boston, Mass. | 30.23‡ | 767.8‡ | ..... | ..... | 21 | — 6.1 | 86 | NW | 5 | 2.2 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Smooth | ..... | Cloudy | |
| Wyoming, Alexandria, Egypt | 30.03‡ | 762.8‡ | ..... | ..... | 63 | 17.2 | 94 | WNW | ..... | ..... | 3–4 | ..... | 2 | ..... | NW | ..... | ..... | Smooth | ..... | Fair | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | CHARACTER. | DIRECTION FROM— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Granada, Capt. Austin, Acapulco, Mexico †. | | 30.16‡ | 766.1‡ | 76 | 24.4 | | Calm | | | 0 | | 0 | | | | | | Hazy | Capt. A. Fuller. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |
| S. S. Zealandia, N. 33° 40', W. 132° 30' | | 29.97‡ | 761.2‡ | | | | WSW | | | 5–7 | | | | W | | Very rough | WSW | Raining | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; and no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Glendell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, N. 25° 39', E. 120° 50' | | 30.05‡ | 763.3‡ | 68 | 11.7 | 93 | NE | | | 6 | | ks | | NE | 0 | Mod'ate | NE | Misty | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 22° 17', E. 114° 10' †. | | 30.11‡ | 764.8‡ | | | | NE | | | 5 | | k | | SW | Blank | | | | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, Bremerhaven, Germany | | 29.89‡ | 759.2‡ | | | | E | | | 3 | | | | E | | Smooth | E | Cloudy | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Lo'wr 0—10. | Upper. From— | Lower. From— | | Character. | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Liverpool | | 29.79‡ | 756.7‡ | 43 | 6.1 | | SW | | | 1 | | 5 | | SW | Mod'ate | | | Partly cl'dy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

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| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

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| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES.** (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, N. 35° 31′, W. 74° 05′ | | 29.99‡ | 761.7‡ | 52 | 11.1 | 73 | NNE | 16 | 7.2 | | | 5k | | NE | 0.26 in. or 6.6mm. | Rough | NNE | D. Clouds... | Capt. James Jorgensen. |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

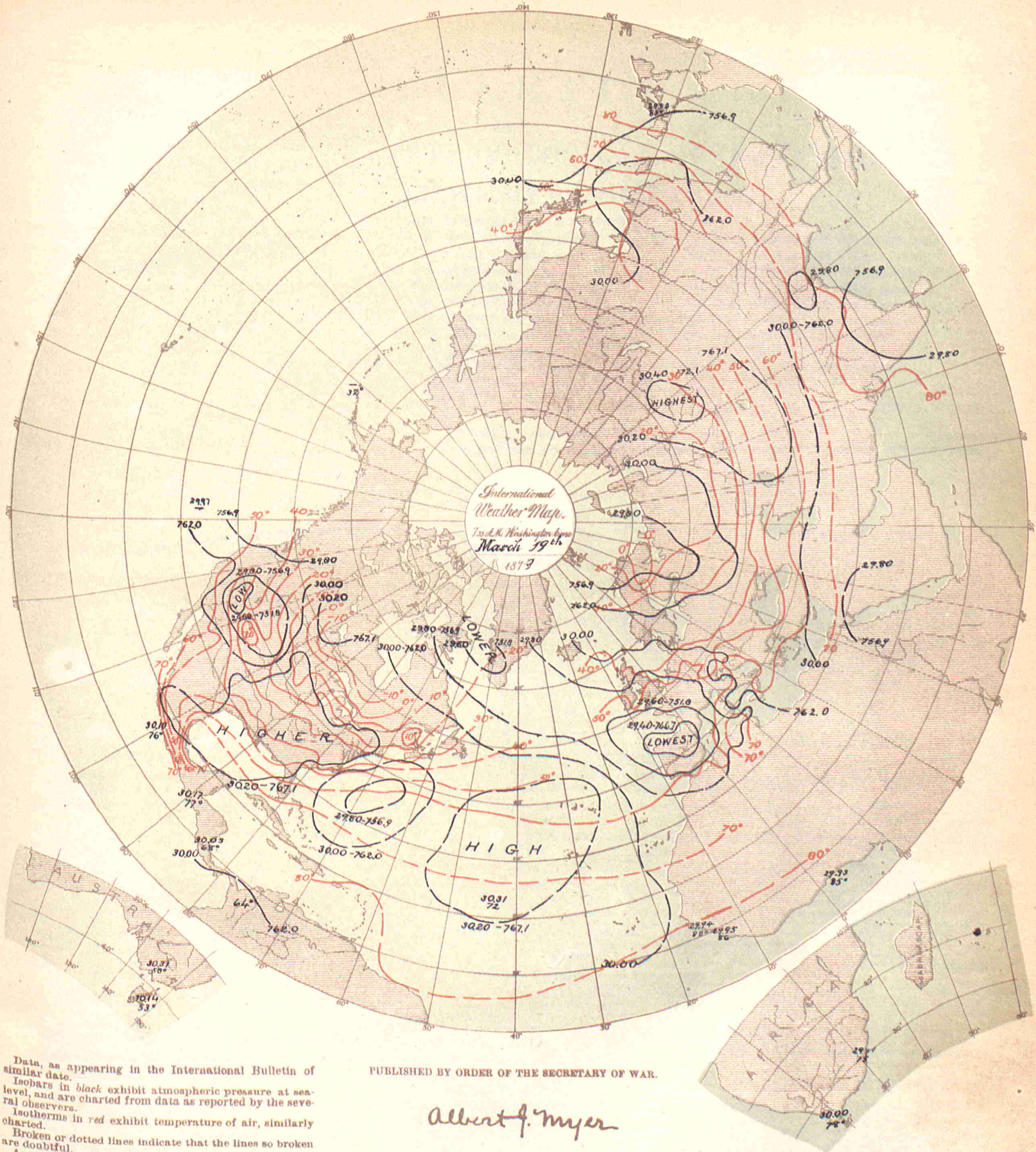
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 20, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:38 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 29.95 | 760.6 | 69.7 | 15.4 | 79 | SW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0.236 | 6.0 | Stormy | |
| Nemours | ..... | ..... | 29.78 | 755.1 | 61.7 | 16.5 | 85 | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Kesxuche. |
| Algiers | ..... | ..... | 29.72 | 754.9 | 65.1 | 18.4 | 52 | WNW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Tourillere. |
| La Calle | ..... | ..... | 29.76 | 755.8 | 72.0 | 22.2 | 63 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Foufrede. |
| Tunis | ..... | ..... | 29.87 | 758.8 | 70.7 | 21.5 | 49 | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Jacques. |
| Sfax | ..... | ..... | 29.89 | 759.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 29.80 | 756.8 | 59.0 | 15.0 | 30 | W | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Herbin. |
| Tebessa | ..... | ..... | 29.89 | 759.3 | 72.5 | 22.5 | 39 | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Watrin. |
| Geriville | ..... | ..... | 29.82 | 757.5 | 58.1 | 14.5 | 95 | S | ..... | ..... | 7 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Brugniaux. |
| Laghouat | ..... | ..... | 29.87 | 758.8 | 70.5 | 21.4 | 17 | SSW | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bertrand. |
| Biskra | ..... | ..... | 29.81 | 757.2 | 77.5 | 25.3 | 27 | SE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.23 | 742.5 | 29.78 | 756.3 | 58.6 | 14.8 | 53 | SW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stoair. |
| Cracow, I. R. Observatory | 29.06 | 738.2 | 29.83 | 757.7 | 50.0 | 10.0 | 74 | ENE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski |
| Eperies | 28.95 | 735.8 | 29.93 | 760.2 | 48.9 | 9.4 | ..... | Calm | ..... | ..... | 0 | ..... | 10s | ..... | ..... | 0.008 | 0.20 | ..... | Julius Mikolik. |
| Gratz | 28.46 | 722.8 | 29.68 | 753.9 | 61.2 | 16.2 | 45 | SW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.41 | 721.7 | 29.82 | 757.4 | 59.2 | 15.1 | 36 | E | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0.073 | 1.85 | ..... | Prof. A. Gottschling. |
| Kremsmünster | 28.38 | 720.8 | 29.71 | 754.7 | 50.0 | 10.0 | 76 | ENE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner. |
| Lemberg | 28.82 | 731.9 | 29.81 | 757.2 | 44.2 | 6.8 | 80 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.76 | 755.8 | 29.87 | 758.6 | 59.0 | 15.0 | 78 | SE | ..... | ..... | 5 | ..... | 8 | ..... | ..... | 0.154 | 3.9 | ..... | I.R.Hydrographic Office. |
| Szathmar | 29.41 | 747.1 | 29.88 | 759.0 | 50.4 | 10.2 | 89 | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 29.80 | 756.8 | 29.90 | 759.4 | 54.9 | 12.7 | 75 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | Inap | Inap | Covered | P. Busin. |
| Vienna | 29.08 | 738.1 | 29.78 | 756.3 | 52.5 | 11.4 | 60 | NE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | 29.54 | 750.4 | 29.74 | 755.4 | 55.6 | 13.1 | 83 | E | ..... | ..... | 3 | ..... | 9 | ..... | SW | 0 | 0 | ..... | Royal Observatory |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. E. de Cae. |
| Maeseyck | 29.66 | 753.4 | 29.79 | 756.6 | 54.7 | 12.6 | 62 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | M. Pierrot |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:9, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum't'al error and temperature. Inches. | Barometer. Corrected for instrum't'al error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.95 | 760.7 | 30.05 | 763.3 | 39.4 | 4.1 | ..... | ENE | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | 0.020 | 0.51 | Misty | W. Boswell. |
| Ardrossan | 29.97 | 761.2 | 29.98 | 761.5 | 42 | 5.6 | ..... | E | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | Foggy | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.01 | 762.2 | 41.9 | 5.5 | ..... | NNE | 8 | 3.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.92 | 760.0 | 46.4 | 8.0 | ..... | ENE | 15 | 6.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.90 | 759.4 | 43.4 | 6.3 | ..... | ENE | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | Thomas Mackereth. |
| Bradford, Yorkshire | 29.55 | 750.6 | 29.95 | 760.7 | 43.5 | 6.4 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | J. McLandsborough. |
| Bridgetown, (Barbados) | 30.00 | 762.0 | 30.03 | 762.8 | 82.5 | 28.0 | ..... | E | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | Gloomy | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.85 | 758.2 | 51.0 | 10.6 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | H. Todd. [C. |
| Cardington | ..... | ..... | 29.82 | 757.4 | 47.6 | 8.7 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.68 | 753.9 | 29.81 | 757.2 | 47.5 | 8.6 | ..... | NE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Corpl. Daly, R. E. |
| Dartmoor | 28.23 | 717.0 | 29.70 | 754.4 | 46.0 | 7.8 | ..... | NE | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | Squally | Alexander Watt. |
| Donaghadee | 29.95 | 760.7 | 29.99 | 761.7 | 45 | 7.2 | ..... | N | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 29.73 | 755.1 | 29.76 | 755.9 | 50 | 10.0 | ..... | ENE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy | J. Costello. |
| Falmouth, Observatory | 29.48 | 748.8 | 29.70 | 754.4 | 54.0 | 12.2 | ..... | NNE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.61 | 701.3 | 29.93 | 760.2 | 75.2 | 24.0 | ..... | E | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.74 | 755.4 | 29.97 | 761.2 | 80 | 26.7 | ..... | E | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.93 | 760.2 | 43 | 6.1 | ..... | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.60 | 751.8 | 29.65 | 753.1 | 56.9 | 13.8 | ..... | W | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.80 | 756.9 | 30.00 | 762.0 | 39.0 | 3.9 | ..... | NE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Squally | D. G. Maclean. |
| Great Yarmouth | 29.85 | 758.2 | 29.86 | 758.4 | 42 | 5.6 | ..... | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Misty | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.63 | 752.6 | 29.80 | 756.9 | 52.9 | 11.6 | ..... | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff, for G. B. Airy. |
| Guernsey | 29.41 | 747.0 | 29.64 | 752.8 | 50 | 10.0 | ..... | NE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F.R.S. |
| Helston | 29.68 | 753.9 | 29.81 | 757.2 | 57 | 13.9 | ..... | NE | ..... | ..... | 6 | ..... | 4k | ..... | ..... | 0.11 | 2.8 | Fair | M. P. Moyle. |
| Holyhead | 29.85 | 758.2 | 29.90 | 759.4 | 45 | 7.2 | ..... | NNE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | John Tilston. |
| Jersey | 29.32 | 744.7 | 29.60 | 751.8 | 55.7 | 13.2 | ..... | ENE | ..... | ..... | 5 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | J. Fisher. |
| Kew, Observatory | 29.77 | 756.1 | 29.81 | 757.2 | 50.9 | 10.5 | ..... | NNE | 17 | 7.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | The Meteorological Of. |
| Leicester, Museum | 29.63 | 752.6 | 29.89 | 759.2 | 44.8 | 7.1 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.74 | 755.4 | 29.81 | 757.2 | 65 | 18.3 | ..... | SE | ..... | ..... | 3 | ..... | 2k | ..... | ..... | ..... | ..... | Blue sky | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.95 | 760.7 | 30.05 | 763.3 | 40 | 4.4 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.24 | 768.1 | 74.2 | 23.4 | ..... | SE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.72 | 754.9 | 29.92 | 760.0 | 44.6 | 7.0 | ..... | NNE | ..... | ..... | 3 | ..... | 10k | NE | ..... | 0 | 0 | Overcast | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.35 | 745.5 | 29.89 | 759.2 | 42.9 | 6.1 | ..... | NNE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.84 | 757.9 | 47 | 8.3 | ..... | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | H. E. Bellamy. |
| Plymouth | 29.62 | 752.3 | 29.70 | 754.4 | 55.1 | 12.8 | ..... | ENE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Merrifield. |
| Roche's Point | 29.84 | 757.9 | 29.88 | 758.9 | 48 | 8.9 | ..... | NNE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded | W. Kennedy. |
| Saint Ann's Head | 29.66 | 753.4 | 29.83 | 757.7 | 49 | 9.4 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 30.10 | 764.5 | 40 | 4.4 | ..... | E | 15 | 6.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.97 | 761.2 | 54.2 | 12.3 | ..... | NE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | W. H. Lyne. |
| Sheffield | 29.68 | 753.9 | 29.97 | 761.2 | 44.0 | 6.7 | ..... | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | W. F. Cooper. |
| Silloth Rectory | 29.95 | 760.7 | 29.98 | 761.5 | 46.4 | 8.0 | 71 | E | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.54 | 750.3 | 29.94 | 760.5 | 45.5 | 7.5 | ..... | NE? | ..... | ..... | 0? | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. S. J. Perry. |
| Stratfield Turgiss | 29.60 | 751.8 | 29.81 | 757.2 | 51.1 | 10.6 | ..... | NE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | C.H.Griffith, F.M.S. |
| Thurso | 30.01 | 762.2 | 30.08 | 764.0 | 41 | 5.0 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Trotter. |
| Truro, Royal Institution | 29.66 | 753.4 | 29.70 | 754.4 | 57 | 13.9 | ..... | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | W. Newcombe. |
| Valencia, Observatory | 29.90 | 759.4 | 29.93 | 760.2 | 48.8 | 9.3 | ..... | N | ..... | ..... | 8 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.12 | 765.0 | 30.16 | 766.1 | 63.5 | 17.5 | 86 | W | 16 | 7.2 | ..... | 10 | 10 | ..... | ..... | ..... | ..... | Raining | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.97 | 761.2 | 62.0 | 16.7 | 88 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Starlight | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 30.03 | 762.8 | 39.0 | 3.9 | ..... | E | ..... | ..... | 2 | ..... | 10s | ..... | ..... | 0.14 | 3.6 | Overcast | Andrew Gibb. |
| Mauritius, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Meldrum. |
| Melbourne, Observatory | 30.15 | 765.8 | 30.24 | 768.1 | 65.0 | 18.3 | 60 | NNE | 7 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Fine | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 30.03 | 762.8 | 44 | 6.7 | ..... | E | ..... | ..... | 3 | ..... | 10 | E | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.13 | 765.3 | 40 | 4.4 | ..... | E | ..... | ..... | 2 | 5 | 5 | SE | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Barometer. Corrected for instrum't'al error and temperature. Inches. | Barometer. Corrected for instrum't'al error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 39° 50', E. 26° 08' | ..... | ..... | 29.96‡ | 761.0‡ | 55 | 12.8 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda, N. 32° 58', E. 28° 46' | ..... | ..... | 30.01‡ | 762.2‡ | 62 | 16.7 | ..... | NW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Capt. B. Boyes. |
| Barque Belle Isle, N. 34° 39', W. 65° 12' | ..... | ..... | 30.24‡ | 768.1‡ | 55 | 12.8 | ..... | N | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 7 | NW | Showery | Capt. A. J. Brown. |
| Ship British Commodore, N. 38° 40', W. 74° 10' | ..... | ..... | 30.34 | 770.6 | 41 | 5.0 | ..... | SSW | ..... | ..... | 4 | ..... | 4 | ..... | NW | 2 | W | D. clouds | Capt. J. W. Thorne. |
| —— City of Agra, N. 25° 07' W. 44° 19' | ..... | ..... | 30.35‡ | 770.9‡ | 72.8 | 22.7 | ..... | ENE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Capt. Thos. Young. |
| Barque Commewyne, N. 38° 58', W. 44° 00' | ..... | ..... | 30.30‡ | 769.6‡ | 63.5 | 17.5 | ..... | S | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Capt. A. Buchan. |
| Barque Fedalina, N. 45° 25', W. 11° 55' | ..... | ..... | 29.65‡ | 753.1‡ | 58 | 14.4 | ..... | N | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 6 | WNW; N | Showery | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam, N. 11° 27', E. 75° 04' | ..... | ..... | 29.81‡ | 757.2‡ | 81 | 27.2 | ..... | SE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.30 | 668.0 | 30.02 | 762.5 | 66.6 | 19.2 | 90 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | 0.024 | 0.6 | ..... | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.02 | 762.6 | 30.07 | 763.8 | 36.0 | 2.2 | 74 | NNE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 30.03 | 762.7 | 30.05 | 763.2 | 36 7 | 2.6 | 82 | E | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.71 | 754.5 | 29.75 | 755.6 | 21.0 | — 6.1 | 77 | Calm | ..... | ..... | 0 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 30.13 | 765.3 | 30.17 | 766.2 | 40.6 | 4.8 | 76 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.88 | 758.9 | 30.05 | 763.2 | 36.3 | 2.4 | 93 | E | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.08 | 738.1 | 29.01 | 752.1 | 68.0 | 14.8 | 80 | ENE | ..... | ..... | 1 | ..... | 5 | ..... | E | 0 | 0 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 29.62 | 752.4 | 29.65 | 753.0 | 66.6 | 19.2 | 77 | E | ..... | ..... | 1 | ..... | 8 | ..... | E | 0 | 0 | Very cloudy | Bonvallet, Director. |
| Avignon, Normal School | 29.57 | 751.0 | 29.65 | 753.0 | 62.6 | 17 | 66 | SE | ..... | ..... | 4 | ..... | ..... | ..... | SE | 0.795 | 20.2 | ..... | M. Giraud, Director. |
| Bar-sur-Seine | 29.09 | 738.8 | 29.63 | 752.5 | 60.1 | 15.6 | 44 | E | ..... | ..... | 1 | ..... | 8cn | ..... | ..... | 0 | 0 | Very cloudy | O. Saillard, Director. |
| Beauvais, Normal School | 29.41 | 746.9 | 29.69 | 754.1 | 59.2 | 15.1 | 52 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 28.76 | 730.6 | 29.64 | 752.8 | 61.7 | 16.5 | 49 | E | ..... | ..... | 2 | ..... | 2 | ..... | NW | 0 | 0 | Slightly cl'dy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.81 | 731.8 | 29.72 | 754.9 | 58.5 | 14.7 | 52 | E | ..... | ..... | 1 | ..... | 10n | S | S | 0 | 0 | Covered | M. Marlot, Director. |
| Bourges, Normal School | 29.01 | 736.9 | 29.55 | 750.5 | 63.7 | 17.6 | 61 | SE | ..... | ..... | 8 | ..... | 8 | SE | SE | 0 | 0 | Very cloudy | A. Waquet, Director. |
| Brest, Naval Observatory | 29.26 | 743.3 | 29.61 | 749.5 | 58.3 | 14.6 | 67 | NNE | ..... | ..... | 3 | ..... | 9 | ..... | NNE | 0.020 | 0.50 | ..... | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.07 | 738.4 | 29.47 | 748.6 | 63.0 | 17.2 | 61 | E | ..... | ..... | 3 | ..... | 10 | E | E | 1.50 | 38. | Covered | September, Director. |
| Caen, Normal School | 29.54 | 750.3 | 29.61 | 752.2 | 59.7 | 15.4 | 48 | NE | ..... | ..... | 4 | ..... | 5 | ..... | NE | 0 | 0 | Cloudy | M. Lair, Director. |
| Chartres, Normal School | 29.04 | 737.6 | 29.59 | 751.6 | 63.5 | 17.5 | 74 | E | ..... | ..... | 2 | ..... | 5 | ..... | SW | 0 | 0 | Cloudy | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.39 | 746.4 | 29.70 | 754.3 | 59.0 | 15.0 | 60 | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.17 | 715.6 | 29.49 | 749.0 | 57.6 | 14.2 | 49 | SE | ..... | ..... | 3 | ..... | 10 | ..... | S | 0 | 0 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.84 | 732.4 | 29.69 | 754.0 | 52.0 | 11.6 | 87 | ENE | ..... | ..... | 3 | ..... | 5kn | ..... | ENE | 0 | 0 | Cloudy | Dr. Coulet, Director. |
| Commune de Gréasque* | 28.60 | 726.5 | 29.74 | 755.5 | 54.1 | 12.3 | 87 | SE | ..... | ..... | 4 | ..... | 10 | ..... | SE | 1.291 | 32.8 | Covered | M. Kina, Director. |
| Grenoble, Normal School | 28.92 | 734.5 | 29.67 | 753.5 | 62.2 | 16.8 | 44 | SSW | ..... | ..... | 4 | ..... | 8ck | ..... | S | 0 | 0 | Very cloudy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.23 | 742.4 | 29.44 | 747.7 | 60.4 | 15.8 | 59 | E | ..... | ..... | 1 | ..... | 8 | ..... | E | 0 | 0 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.24 | 742.6 | 29.54 | 750.2 | 63.9 | 17.7 | 84 | ESE | ..... | ..... | 4 | ..... | 8 | ..... | ESE | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 28.73 | 729.7 | 29.64 | 752.9 | 64.6 | 18.1 | 36 | NNE | ..... | ..... | 1 | ..... | 1 | ..... | W | 0 | 0 | Clear | Baudry, Director. |
| Lorient, Naval Observatory | 29.39 | 746.4 | 29.49 | 749.0 | 61.5 | 16.4 | 69 | NE | ..... | ..... | 4 | ..... | ..... | SE | NE | 0.016 | 0.4 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galsin, Director |
| Mirecourt, Normal School | 28.63 | 727.1 | 29.72 | 754.8 | 55.9 | 13.3 | 53 | NE | ..... | ..... | 1 | c | ..... | ..... | SW | 0 | 0 | ..... | M. Barbier, Director. |
| Nismes, Normal School | 29.44 | 747.9 | 29.65 | 753.1 | 57.6 | 14.2 | 80 | S | ..... | ..... | 4 | ..... | 8 | ..... | S | 0.571 | 14.50 | Very cloudy | Boyer, Director. |
| Privas, Normal School | 28.55 | 725.1 | 29.60 | 751.9 | 53.6 | 12 | 76 | S | ..... | ..... | 4 | ..... | n | S | S | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs. | 24.70 | 627.3 | ..... | ..... | 40.6 | 4.8 | 83 | SE | ..... | ..... | 10 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.39 | 746.4 | 29.42 | 747.2 | 62.2 | 16.8 | 63 | ESE | ..... | ..... | 1 | ..... | 10 | SE | SE | 0.04 | 1. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.54 | 750.3 | 29.63 | 752.5 | 64.0 | 17.8 | 27 | NNE | ..... | ..... | 3 | ..... | 5 | ..... | SE | 0 | 0 | Cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.50 | 749.2 | 29.53 | 750 0 | 63.0 | 17.2 | 41 | ENE | ..... | ..... | 6 | ..... | 1 | NE | NE | 0 | 0 | Cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.48 | 748.9 | 29.66 | 753.1 | 56.1 | 13.4 | 55 | E | ..... | ..... | 1 | ..... | ..... | ..... | E | 0 | 0 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.32 | 719.4 | 29.37 | 746.1 | 59.0 | 15 | 48 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.39 | 10. | Raining | T. Huguet, Director. |
| Versailles Observatory | 29.15 | 740.4 | 29.64 | 752.9 | 55.8 | 13.2 | 52 | ESE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Lightly cov'd | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 28.92 | 734.5 | 29.65 | 753.2 | 59.0 | 15 | 78 | N | ..... | ..... | 1 | ..... | 2 | ..... | S | 0 | 0 | Slightly cl'dy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.98 | 761.4 | 30.00 | 762.1 | 77.0 | 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.31 | 8. | ..... | L'Abbé Marcl ésl. |
| Lyons Obs'y, (Park Station) | 29.03 | 737.3 | 29.62 | 752.3 | 63.0 | 17.2 | 34 | SSW | ..... | ..... | 3 | ..... | 7 | ..... | SSE | ..... | ..... | Rainy | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 24.47 | 621.5 | 29.78 | 756.5 | 35.6 | 2.0 | 80 | ESE | 24.2 | 10.8 | ..... | ..... | 10 | ..... | ..... | 0.474 | 12.0 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.84 | 757.8 | 54.3 | 12.4 | 87 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 1.575 | 40.0 | Light rain | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.37 | 746.0 | ..... | ..... | 55.4 | 13.0 | 55 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Marié Davy, Director. |
| Perpignan | 29.36 | 746.3 | 29.49 | 749.0 | 61.7 | 16.5 | 55 | SW | 39.2 | 17.5 | ..... | ..... | 4 | ..... | SE | 0.807 | 20.5 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 21.94 | 557.3 | ..... | ..... | 27.7 | — 2.4 | ..... | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.854 | 21.7 | Snowy | Gen'l de Nansouty. |
| Toulouse, Observatory | 28.71 | 729.3 | 29.42 | 747.3 | 57.6 | 14.2 | 67 | SSE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0.665 | 16.9 | Showery | M. Mercadier Juller. |
| Tours | 29.30 | 744.2 | 29.50 | 749 2 | 65.1 | 18.4 | 42 | ESE | ..... | ..... | 4 | ..... | 7 | ..... | ESE | 0.004 | 0.1 | ..... | Cousin-Marquete. |
| Zi-Ka-Wei, (near Shanghai) | 30.08 | 764.0 | 30.11 | 764.7 | 45.7 | 7.6 | 77 | SW | 8.5 | 2.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.94 | 735.0 | 29.78 | 756.3 | 50.4 | 10.2 | 57 | E | | | 6 | | 6 | E | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.78 | 756.5 | 29.96 | 761.0 | 44.6 | 7.0 | 68 | SE | | | 1 | | 1 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.37 | 746.0 | 29.90 | 759.4 | 49.8 | 9.9 | 69 | ENE | | | 2 | | 9 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.25 | 743.0 | 29.67 | 753.7 | 55.0 | 12.8 | 63 | NE | | | 2 | | 5 | SW | | 0 | 0 | | Albert Sens. |
| Cassel | 29.21 | 742.0 | 29.82 | 757.3 | 47.8 | 8.8 | 69 | E | | | 2 | | 6 | E | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.66 | 752.1 | 29.77 | 756.2 | 54.1 | 12.3 | 60 | NE | | | 4 | | 8 | | | 0 | 0 | Foggy | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.40 | 746.8 | 29.77 | 756.2 | 55.0 | 12.8 | | NNE | | | 2 | | 8 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.24 | 717.3 | 29.67 | 753.7 | 49.3 | 9.6 | 70 | SW | | | 4 | | 8 | SW | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.90 | 759.4 | 29.97 | 761.2 | 42.1 | 5.6 | 71 | ENE | | | 5 | | 0 | | | 0 | 0 | Fine | Captain F. Hegemann. |
| Kiel | 30.02 | 762.4 | 30.03 | 762.8 | 36.8 | 2.1 | 77 | E | | | 2 | | 0 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.91 | 759.7 | 30.00 | 761.9 | 36.0 | 2.2 | 71 | W | | | 5 | | 6 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 29.98 | 761.6 | 38.1 | 3.4 | | NE | | | 2 | | 1 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.48 | 748.8 | 29.92 | 759.9 | 35.2 | 1.8 | 96 | NE | | | 2 | | 10 | | | 0 | 0 | Foggy | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.95 | 760.6 | 29.99 | 761.8 | 33.6 | 0.9 | 77 | NW | | | 4–5 | | 5ks | | | | | | Skalweit. |
| Neufahrwasser | 30.01 | 762.3 | 30.03 | 762.7 | 35.2 | 1.8 | 67 | NNE | | | 1 | | 1 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.68 | 753.9 | 29.93 | 761.5 | 36.5 | 2.5 | 82 | E | | | 5 | | 0 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.16 | 740.6 | 29.71 | 754.5 | 53.8 | 12.1 | 55 | NNE | | | 2 | | 9 | | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 28.74 | 729.9 | 29.67 | 753.5 | 55.4 | 13.0 | 50 | N | | | 1 | | 3 | | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | | | | | | | | | | | | | | | | | | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.23 | 717.1 | 29.73 | 755.2 | 50.5 | 10.3 | 55 | E | 11 | 5 | | | 7ck | W | NW | 0 | 0 | Cloudy | Dr. Van Bebber. |
| Wustrow, Naval School | 30.02 | 762.6 | 30.04 | 762.9 | 37.2 | 2.9 | 78 | ENE | | | 3 | | 0 | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.63 | 752.5 | 30.02 | 762.5 | 60.8 | 16.0 | | SW | | | 1.0 | | | | | | | Covered | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.85 | 758.3 | 29.90 | 759.6 | 80.8 | 27.1 | 27 | WSW | 15 | 6.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Dessa | 29.40 | 746.9 | 29.87 | 758.8 | 85.8 | 29.9 | 11 | N | 9.0 | 4.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.74 | 755.4 | 29.78 | 756.3 | 81.5 | 27.5 | 69 | NW | 12 | 5.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.17 | 740.8 | 29.92 | 760.0 | 75.9 | 24.4 | 27 | Calm | 2.0 | 0.9 | | | 6 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.36 | 694.9 | 29.87 | 758.7 | 81.7 | 27.6 | 60 | W | 18.0 | 8.0 | | | 7 | | NE | 0 | 0 | D. clouds | |
| Roorkee | 28.98 | 736.2 | 29.90 | 759.3 | 74.4 | 23.6 | 20 | NW | 2.5 | 1.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Agra | 29.35 | 745.4 | 29.91 | 759.8 | 81.7 | 27.6 | 21 | N | | | | | | | | 0 | 0 | | |
| Nagpur | 28.79 | 731.2 | 29.82 | 757.5 | 83.6 | 28.7 | 21 | W | 8.9 | 1.7 | | | | | | 0 | 0 | Blue sky | |
| Lucknow | 29.48 | 748.9 | 29.86 | 758.5 | 79.3 | 26.3 | 29 | NW | 3.1 | 1.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.57 | 751.1 | 29.88 | 759.0 | 80.1 | 26.7 | 25 | NW | 3.8 | 1.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.63 | 752.6 | 29.81 | 757.2 | 82.5 | 28.1 | 29 | W | 3.3 | 1.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.82 | 706.8 | 29.84 | 758.0 | 77.3 | 25.2 | 16 | W | 11.7 | 5.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.76 | 756.0 | 29.84 | 758.0 | 79.0 | 26.1 | 69 | S | 1.7 | 0.8 | | | 6 | | | 0.15 | 3.8 | Drizzling | |
| Calcutta (Alipore) | 29.82 | 757.3 | 29.84 | 757.9 | 81.4 | 27.4 | 44 | WNW | 2.0 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.39 | 746.6 | 29.78 | 756.4 | 78.7 | 25.9 | 24 | WSW | 2.3 | 1.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.76 | 755.8 | 29.85 | 758.2 | 79.9 | 26.6 | 55 | WNW | 3.5 | 1.6 | | | 1 | | | 0 | 0 | Misty | |
| Sibsagar | 29.50 | 749.3 | 29.84 | 757.9 | 72.0 | 22.2 | 63 | ENE | 3.3 | 1.5 | | | 3 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.51 | 724.0 | 29.87 | 758.8 | 79.8 | 26.6 | 18 | N | 3.8 | 1.7 | | | 0 | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.5 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.48 | 748.8 | 29.90 | 759.4 | 50.4 | 10.2 | 90 | Calm | 0 | 0 | ..... | ..... | 10 | .. ..... | ..... | 0.079 | 2.0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.39 | 746.5 | 29.91 | 759.8 | 51.8 | 11.0 | 89 | SE | ..... | ..... | 2 | ..... | 10 | E | ..... | 0.138 | 3.5 | ..... | Prof. Schiaparelli. |
| Padua | 29.77 | 756.1 | 29.88 | 758.9 | 53.6 | 12.0 | 87 | NNE | 6.9 | 3.1 | ..... | ..... | 10 | ..... | ..... | 0.059 | 1.5 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.95 | 735.4 | 29.87 | 758 7 | 48.4 | 9.1 | 88 | NNW | 1.3 | 0.6 | ..... | ..... | 10 | ..... | ..... | 0.295 | 7.5 | ..... | Prof. P. F. Denza. |
| Genoa | 29.67 | 753.5 | 29.86 | 758.4 | 53.6 | 12.0 | 89 | NW | 1.3 | 0.6 | ..... | ..... | 10 | SE | ..... | 1.240 | 31.5 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.93 | 709.8 | 29.85 | 758.9 | 47.5 | 8.6 | 82 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 1.492 | 37.9 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.80 | 756.8 | 29.84 | 758.0 | 56.3 | 13.5 | 87 | E | 6.3 | 2.8 | ..... | ..... | 10 | ..... | ..... | 0.079 | 2.0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.62 | 752.3 | 29.88 | 758.9 | 59.0 | 15.0 | 65 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.177 | 4.5 | ..... | Cav. F. Meucci. |
| Leghorn | 29.74 | 755.5 | 29.83 | 757.7 | 61.0 | 16.1 | 74 | SW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.028 | 0.7 | ..... | Prof. P. Monte. |
| Rome | 29.71 | 754.5 | 29.88 | 759.0 | 63.5 | 17.5 | 63 | SW | 9.8 | 4.4 | ..... | ..... | 9 | ..... | ..... | 0.087 | 2.2 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.73 | 755.1 | 29.99 | 761.7 | 55.9 | 13.3 | 68 | S | 13.0 | 5.8 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.99 | 736.3 | 29.88 | 759.0 | 61.5 | 16.4 | 79 | NW | 0.7 | 0.3 | ..... | ..... | 9 | ..... | ..... | 0.031 | 0.8 | ..... | Prof. D. Conti. |
| Cagliari | 29.64 | 752.9 | 29.84 | 757.8 | 61.7 | 16.5 | 78 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0.031 | 0.8 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.60 | 751.8 | 29.85 | 758.3 | 63.0 | 17.2 | 54 | ENE | 4.3 | 1.9 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.78 | 756.3 | 29.85 | 758.1 | 60.4 | 15.8 | 88 | NNE | 4.9 | 2.2 | ..... | ..... | 10 | NNE | ..... | 0.020 | 0.5 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.36 | 745.6 | 29.91 | 759.7 | 61.2 | 16.2 | 57 | SSW | 5.6 | 2.5 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... ... ... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 29.76 | 755.9 | 29.78 | 756.4 | 41.1 | 5.1 | 76 | W | 1.3 | 0.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.69 | 754.1 | 29.90 | 759.4 | 49.7 | 9.8 | 60 | WSW | 13.8 | 6.2 | ..... | ..... | 2s | ..... | ..... | 0.020 | 0.51 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.61 | 752.1 | 29.68 | 753.9 | 44.4 | 6.9 | 96 | N | 7.3 | 3.3 | ..... | ..... | 10n | ..... | ..... | 0.085 | 2.16 | Raining | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | | | | | | | | | | | | | | | | | | | P. Ceballos. |
| Guadalajara | 25.18 | 639.5 | 30.30 | 769 7 | 42.4 | 5.8 | 39 | SW | ..... | ..... | 1 | 6 | .. ..... | W | ..... | 0 | 0 | ½ clouded | Prof. L. Perez. |
| Leon | 24.52 | 622.9 | 30.24 | 768.3 | 55.8 | 13.2 | 59 | NW | ..... | ..... | 1 | 4c | 0 | SW | ..... | 0 | 0 | Foggy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.14 | 587.8 | 30.24 | 768.2 | 49.6 | 9.8 | 50 | Calm | 0 | 0 | .. ..... | 4c | 0 | W | ..... | 0 | 0 | Fair | The Staff. |
| Pabellon, (Aguascalientes) | | | | | 50.0 | 10.0 | 49 | Calm | ..... | ..... | 0 | 3c | 0 | ..... | ..... | 0 | 0 | Fair | M. V. de Leon, M. E. |
| Tlacotalpam | 30.02 | 762.5 | 30.03 | 762.8 | 72.5 | 22.5 | 88 | SE | ..... | ..... | 1 | 0 | 0 | ..... | .. ..... | 0 | 0 | Foggy | M. M. Chàzaro. |
| San Luis Potosi | 24.26 | 616.1 | 30.14 | 765.6 | 60.0 | 15.6 | 68 | WSW | ..... | ..... | 1 | 6 | 0 | W | ..... | 0 | 0 | Misty | G. Barroeta, M. D. |
| Vera-Cruz | | | | | | | | | | | | | | | | | | | Prof. J. Rossell. |
| Zacatecas | | | | | | | | | | | | | | | | | | | |
| Puebla, (Catholic Institute) | 23.48 | 596.5 | 30.25 | 768.3 | 46.5 | 8.3 | 44 | NE | 1.3 | 0.6 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Prof. P. Spina. |
| Durango | | | | | | | | | | | | | | | | | | | M. V. de Leon, C. E. |
| Colima | 28.47 | 723.1 | 30.14 | 765.5 | 72.5 | 22.5 | 66 | NE | ..... | ..... | 2 | 0 | 5 | ..... | SW | 0 | 0 | ½ clouded | R. Banda, C. E. |
| San Juan E. Michapam | | | | | | | | | | | | | | | | | | | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,903 m., or 6,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,201m., or 7,220.8 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 582 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.79 | 756.7 | 29.79 | 756.7 | 53.6 | 12.0 | ..... | ENE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.85 | 758.3 | 29.91 | 759.7 | 44.1 | 6.7 | ..... | ENE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.85 | 758.3 | 29.85 | 758.3 | 41.0 | 5.0 | ..... | NE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.79 | 756.7 | 29.79 | 756.7 | 54.1 | 12.3 | 68 | ENE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | | | ..... | |
| Utrecht | 29.78 | 756.4 | 29.83 | 757.6 | 54.9 | 12.7 | 50 | E | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | Slightlyol'dy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Millimeters. | Reduced to sea-level. Inches. | Millimeters. | Temperature of the Air. Fahrenheit. | Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Velocity. Miles per hour. | Meters per second. | Force. 0—10. | Clouds. Amount. Up'er 0—10. | Low'r 0—10. | Direction. Upper. From— | Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Millimeters. | Weather | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.10 | 764.5 | 30.15 | 765.9 | 37.8 | 3.2 | 47 | SW | 1.3 | 0.6 | | | 1 | | | 0 | 0 | | |
| Brōno | 30.17 | 766.3 | 30.21 | 767.3 | 32.0 | 0.0 | 60 | SW | 18 | 8 | | | 3 | | | 0 | 0 | | |
| Christiania | 30.04 | 762.9 | 30.19 | 766.8 | 35.2 | 1.8 | 49 | SW | 7 | 3 | | | 8 | | | 0 | 0 | | |
| Tromsö | 30.03 | 762.7 | 30.07 | 763.8 | 28.8 | — 1.8 | 78 | Calm | 0 | 0 | | | 3 | | | 0 | 0 | | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| Stations | Bar. corr. Inches | mm | Red. Inches | mm | Fahr. | Cent. | Per cent | Wind from | Vel. | m/s | Force | Up'er | Low'r | Upper | Lower | Rain Inches | mm | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.03 | 762.8 | 30.23 | 767.7 | 54.9 | 12.7 | 77 | N | 3.8 | 1.7 | | | 5 | | | 0 | 0 | | Dr. J. A. Sampaio. |
| Campo Major | 28.48 | 723.5 | 29.54 | 750.2 | 47.3 | 8.5 | 83 | E | 4.9 | 2.2 | | | 9 | SE | | 0.244 | 6.2 | Light rain... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 29.87 | 758.7 | 29.96 | 760.9 | 59.4 | 15.2 | 48 | WSW | 5.6 | 2.5 | | | 6 | | | 0.020 | 0.5 | | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.14 | 740.2 | 29.50 | 749.4 | 51.8 | 11.0 | 72 | SW | 16.1 | 7.2 | | | 9 | W | | 0.291 | 7.4 | | The Staff. |
| Ponta Delgada, (Azores) | 30.27 | 768.9 | 30.34 | 770.7 | 56.1 | 13.4 | 77 | N | 19.9 | 8.9 | | | 3 | | | 0.071 | 1.8 | | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| PORTUGUESE NAVAL SERIES. VESSELS. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0—? | Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | | | | | | | | | | | | | | | | | | | A. G. da Silva Costa Com'd't. |
| D. Fernando | | | | | | | | | | | | | | | | | | | A.M.de Sande, Com'd't. |
| India | | | | | | | | | | | | | | | | | | | A. D. Pedroso, Com'd't. |
| Mindello | | | | | | | | | | | | | | | | | | | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | | | 29.01 | 759.6 | 83.3 | 28.5 | | SW | | | 2 | | 3 | | SW | 2 | SW | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | | | | | | | | | | | | | | | | | | | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto de S. Jose de Bissao, Senegambia | | | 29.96 | 760.9 | 82.8 | 28.2 | | NE | | | 1 | | 0 | | | 1 | NE | Blue sky | A. Ferreira, 2d Lt. |
| Sá da Bandeira, St. Paul de Loando | | | 29.82 | 757.3 | 90.8 | 32.4 | | WNW | | | 2 | | 3 | | WSW | | | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | | | | | | | | | | | | | | | | | | | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | | | 29.93 | 760.2 | 68.4 | 20.2 | | ENE | | | 1 | | 0 | | | 1 | | Blue sky | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| Stations | Bar. corr. Inches | mm | Red. Inches | mm | Fahr. | Cent. | Per cent | Wind from | Miles per hour | m/s | Force | Up'er | Low'r | Upper | Lower | Rain Inches | mm | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.49 | 749.0 | 29.93 | 760.1 | 37.8 | 3.2 | 63 | ENE | 4 | 2 | | | 0 | | | | | | Astronomical Obs. |
| Wilna | 29.50 | 740.4 | 29.94 | 760.5 | 30.7 | — 0.7 | 76 | WSW | 2 | 1 | | | 2 | | | | | Light clouds | Astronomical Obs. |
| Dorpat | 29.65 | 753.0 | 29.90 | 759.5 | 24.4 | — 4.2 | 81 | NE | 7 | 3 | | | 10n | | | | | Light snow. | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.95 | 760.6 | 29.96 | 761.0 | 22.6 | — 5.2 | 56 | ENE | 7 | 3 | | | 1s | | | | | | Central Physical Obs. |
| Kieff | 29.28 | 743.7 | 29.94 | 760.5 | 33.8 | 1.0 | 77 | S | 9 | 4 | | | 10ks;s | | | | | | Physical Cabinet. |
| Nikolaiev | 30.01 | 762.2 | 30.08 | 764.0 | 46.2 | 7.9 | 58 | SSW | 9 | 4 | | | 1k | | | | | | Kurdakof. |
| Kertch | 30.12 | 765.0 | 30.14 | 765 5 | 43.5 | 6.4 | 61 | SE | 7 | 3 | | | 0 | | | | | | Lagorio. |
| Moscow | 29.31 | 744.4 | 29.89 | 759.2 | *21.9 | — 5.6 | 75 | N | 9 | 4 | | | 9ks | | | | | | Meteorological Obs. |
| Lugan | 29.83 | 757.7 | 30.04 | 763.0 | 38.3 | 3.5 | 51 | SW | 9 | 4 | | | 0 | | | | | | Meteorological Obs. |
| Archangel | 29.63 | 752.7 | 29.65 | 753.2 | 14.7 | — 9.6 | 84 | WNW | 22 | 10 | | | 10 | | | | | | Capt. Sseliwerstow. |
| Tiflis | 28.55 | 725.2 | 29.95 | 760.8 | 61.0 | 16.1 | 22 | NW | 31 | 14 | | | 6k | | | | | Light clouds | Physical Observatory. |
| Astrakhan | 30.23 | 767 9 | 30.15 | 765.8 | 40.6 | 4.8 | 44 | NW | 4 | 2 | | | 1 | | | Blank | Blank | | Capt. Wisganow. |
| Krotkowo* | 29.27 | 743.4 | 29.76 | 755.8 | 28.9 | — 1.7 | 59 | S | 9 | 4 | | | 5k | | | | | | Cand. Fatjanow. |
| Kasan | 29.40 | 746.7 | 29.68 | 753.9 | 20.1 | — 6.6 | 78 | SSE | 9 | 4 | | | 10 | | | | | Light snow. | Physical Cabinet. |
| Ekaterinburg | 28.75 | 730.2 | 29.78 | 756.3 | 14.5 | — 9.7 | 81 | ESE | 9 | 4 | | | 10 | | | | | | Meteorological Obs. |
| Nukuss | 29.86 | 758.4 | 30.09 | 764.3 | 59.5 | 15.3 | 20 | SE | 9 | 4 | | | 0 | | | | | | |
| Tashkend | 28.59 | 726.2 | 30.30 | 769.5 | 59.4 | 15.2 | 28 | NW | 13 | 6 | | | 7 | | | Blank | Blank | | Teich, A. M. |
| Barnaul | 29.61 | 752.0 | 30.13 | 765.2 | 30.7 | — 0.7 | 81 | Calm | 0 | 0 | | | 10 | | | | | | Meteorological Obs. |
| Yeniseisk | 30.17 | 766.0 | 30.48 | 774.2 | 26.8 | — 2.9 | 51 | Calm | 0 | 0 | | | 0 | | | | | | |
| Irkutsk | | | | | | | | | | | | | | | | | | | Marks. |
| Peking, (China) | 29.93 | 760 2 | 30.07 | 763.8 | 52.9 | 11.6 | 17 | N | 16 | 7 | | | 0 | | | | | | Physical Observatory. |
| Nertchinsk | | | | | | | | | | | | | | | | | | | Meteorological Obs. |
| Vladivostock | 29.71 | 754.7 | 29.81 | 757.2 | 26.1 | — 3.3 | 63 | N | 13 | 6 | | | 10n | | | | | | |
| Nikolaievsk, on the Amoor | 29.97 | 761.2 | 30.06 | 763.4 | 7.9 | —13.4 | 92 | Calm | 0 | 0 | | | 0 | | | | | | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 400 meters, or 1,341.8 feet; Tashkend, 455 m., or 1,492.7 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165.2 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| Stations | Bar. corr. Inches | mm | Red. Inches | mm | Fahr. | Cent. | Per cent | Wind from | Vel. | m/s | Force | Up'er | Low'r | Upper | Lower | Rain Inches | mm | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.46 | 748.3 | 29.60 | 751.8 | 56.5 | 13.6 | 62 | SW | 10.1 | 4.52 | | | 4k;ks | | SW | 0.562 | 14.27 | | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 29.37 | 746.1 | 29.43 | 747.5 | 64.9 | 18.3 | 55 | W | 2.8 | 1.25 | | 3 | 4 | W | | 0.213 | 5.4 | Cloudy | Prof. Manuel deNaveran |
| Burgos, Met. Obs'y | 26.52 | 673.5 | | | 44.6 | 7.0 | 85 | S | 9.1 | 4.07 | | 0 | 9 | | | 0.610 | 15.5 | Almost cov'd | Domingo Martin y Perez. |
| Madrid, Royal Oservatory | 27.33 | 694.1 | | | 48.6 | 9.2 | 72 | SW | 20.9 | 9.34 | | 0 | 8 | | | 0.232 | 5.9 | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 29.50 | 749.3 | 29.65 | 753.1 | 63.5 | 17.5 | 59 | SE | 6.7 | 3.00 | | 4 | 3 | SW | | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.49 | 723.6 | 29.37 | 746.1 | 47.7 | 8.7 | 95 | S | 1.8 | 0.8 | | 0 | 10 | | | 0.492 | 12.5 | Covered | R. Gil Villanueva, Dir. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.14 | 765.5 | 30.20 | 767.2 | 67.1 | 19.5 | 89 | ESE | 2.2 | 1.0 | | 0 | 0 | | | 0 | 0 | Clear. | Benito Vines, S. J. |
| Manilla, Philippine Islands. | 29.83 | 757.7 | 29.88 | 759.0 | 84.6 | 29.0 | 78 | NE | 6.7 | 3.0 | | | 4c | | E | 0 | 0 | Covered | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.48 | 748.7 | 29.58 | 751.2 | 54.5 | 12.5 | 82 | WSW | 28.1 | 12.6 | | 0 | 10 | | SW | 0.874 | 22.2 | | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I | 30.06 | 763.6 | 30.15 | 765.9 | 76.3 | 24.6 | 89 | SE? | 0 | 0 | | 3c | 2k | SE | SE | 0 | 0 | Clear | Leonardo deTejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.05 | 763.3 | 30.09 | 764.3 | 10.4 | —12.0 | ..... | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.08 | 764.1 | 30.13 | 765.4 | 30.6 | — 0.8 | 77 | N | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.10 | 764.6 | 30.15 | 765 9 | 33.8 | 1.0 | 67 | NNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.93 | 760.2 | 30.11 | 764.7 | 28.8 | — 1.8 | 82 | ENE | ..... | ..... | 6 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.95 | 760.8 | 30.01 | 762.3 | 31.3 | — 0.4 | 70 | NNE | ..... | ..... | 7 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.06 | 763.5 | 30.13 | 765.4 | 27.9 | — 2.3 | 96 | N | 14.8 | 6.6 | ..... | ..... | 3 | ..... | N | 0.00 | 0.01 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.23 | 717.0 | 29.65 | 753.0 | 56.5 | 13 6 | 45 | N | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | The Observatory. |
| Zurich | 28.05 | 712.5 | 29.68 | 753.8 | 57.2 | 14.0 | 56 | N | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | Fair | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —7.5 mm.; Thermometer, +5.3 Cent.; Relative Humidity, —15 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.04 | 763.0 | 51.4 | 10.8 | 64 | N | 8 | 3.5 | ..... | ..... | 2 | ..... | NE | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.98 | 761.5 | 62.1 | 16.7 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.79 | 756.7 | 29.91 | 759.7 | 64.8 | 18.2 | 68 | N | ..... | ..... | 2 | ..... | 1ks | ..... | N | 0 | 0 | D. clouds | Prof. C.V. A.Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.93 | 760.2 | 30.00 | 762 0 | 10.8 | —11.8 | ..... | Calm | 0 | 0 | ..... | 0 | 4s | ..... | ..... | 0 | 0 | Fair | Hon. J. Ferguson. |
| Brockville, Ontario | 29.83 | 757.7 | 30.15 | 765 8 | 26 | — 3.3 | ..... | SW | 1 | 0.4 | ..... | 0 | 2s | ..... | SW | ..... | ..... | Clear. | W. R. Bigg. |
| *Chatham, N B | 29.96 | 761.0 | 30.03 | 762.8 | 4 | —15.6 | 92 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 29.95 | 760.7 | 30.00 | 762.0 | 21 | — 6.1 | 84 | W | 5 | 2.2 | ..... | 0 | 2s | ..... | W | Inap. | Inap. | Fair | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.89 | 759.2 | 30.10 | 764.5 | 21.0 | — 6.1 | 87 | W | ..... | ..... | 1 | 0 | 4s | ..... | ..... | 0.03 | 0.8 | Fair | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | 29.03 | 752.6 | 29.68 | 753.9 | 43.3 | 6.3 | 91 | W | ..... | ..... | ..... | 0 | 4s | ..... | ..... | 0.03 | 0.8 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 29.95 | 760.7 | 29.97 | 761.2 | 17 | — 8.3 | 87 | S | 20 | 8.9 | ..... | ..... | 4n | ..... | ..... | 0.01 | 0.3 | Light snow. | J. McWilliams. |
| Fredericton, N. B | 30.05 | 763.3 | 30.12 | 765.0 | 5.6 | —14.7 | 100 | W | 1 | 0.4 | ..... | 10ck | 0 | W | ..... | 0 | 0 | Cloudy | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.30 | 744.2 | 30.27 | 768.8 | —18 | —27.8 | 100 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Stewart. |
| Granton, Ontario | 29.02 | 737 1 | 30.19 | 766.8 | 23 | — 5.0 | ..... | W | ..... | ..... | 1 | 1k | 0 | W | ..... | Inap. | Inap. | Clear | James Grant. |
| *Halifax, N. S | 29.91 | 759.7 | 30.05 | 763.3 | 27 | — 2.8 | 86 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | F. Allison, M. A. |
| Hamilton, Ontario | 29.83 | 757.7 | 30.22 | 767.6 | 25.7 | — 3.5 | 81 | SW | ..... | ..... | 1 | 8cs | 0 | SW | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.81 | 757.2 | 30.17 | 766.3 | 18 | — 7.8 | 90 | SW | 4 | 1.8 | ..... | 8ck | Sm'e | SW | SW | 0.12 | 3.0 | Fair | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.90 | 759.4 | 29.94 | 760.5 | 25.7 | — 3.5 | 95 | W | 10 | 4.5 | ..... | 2k | 0 | W | ..... | 0 | 0 | Fair | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 29.89 | 759.2 | 30.10 | 764.5 | 22 | — 5.6 | 77 | W | 14 | 6.3 | ..... | 5c | 2s | W | ..... | 0 | 0 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.43 | 747.5 | 30.19 | 766.8 | 9 | —12.8 | 74 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.05 | 1.3 | Light snow. | Rev. R. Mosley. |
| Peterboro, Ontario | 29.39 | 746.5 | 30.21 | 767.3 | 15.6 | — 9.1 | 51 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.45 | 748.0 | 30.19 | 766.8 | 25 | — 3.9 | 87 | W | 6 | 2.7 | ..... | 10ck | 0 | NW | ..... | Inap. | Inap. | Cloudy | H. Morgan. |
| Port Hastings, N. S | 29.95 | 760.7 | 30.00 | 762.0 | 27.7 | — 2.4 | ..... | NW | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.53 | 750.0 | 30.22 | 767.6 | 26 | — 3.3 | 88 | W | 9 | 4.0 | ..... | Haze | 0 | ..... | ..... | Inap. | Inap. | Hazy | M. Payne. |
| *Quebec, Quebec | 29.74 | 755.4 | 30.09 | 764 3 | 11 | —11.7 | 80 | Calm | 0 | 0 | ..... | Haze | Haze | ..... | ..... | 0.02 | 0.5 | Hazy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.63 | 752.6 | 30.14 | 765.5 | 2 | —16.7 | 86 | W | 4 | 1.8 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 30.05 | 763.3 | 30.10 | 764.5 | 25 | — 3.9 | 82 | NW | ..... | ..... | 1 | Haze | Haze | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| St. John, N. B | 29.93 | 760.2 | 30.11 | 764.8 | 20 | — 6.7 | 85 | W | 8 | 3.6 | ..... | c | 0 | ..... | ..... | 0 | 0 | Clear. | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.42 | 747.2 | 30.19 | 766.8 | 19 | — 7.2 | 88 | NE | 6 | 2.7 | ..... | 8k | 0 | N | ..... | 0.11 | 2.8 | Clear | K. Stewart. |
| Stayner, Ontario | 29.32 | 744 7 | 30.15 | 766.8 | 20 | — 6.7 | 84 | Calm | 0 | 0 | ..... | 2ck | 0 | W | ..... | 0 | 0 | Fair | R. J. Cole. |
| Stratford, Ontario | 28.83 | 732.3 | 30.20 | 767.1 | 19.0 | — 7.2 | 89 | SW | 3.5 | 1.6 | ..... | 2cs | 2s | ..... | ..... | Inap. | Inap. | Fair | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.90 | 759.4 | 29.95 | 760.7 | 26 | — 3.3 | 52 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | T. C. Hill. |
| *Toronto, Ontario | 29.80 | 756.9 | 30.21 | 767.3 | 22 | — 5.6 | 88 | W | 4 | 1.8 | ..... | 2cs | 0 | W | ..... | Inap. | Inap. | Fair | Magnetic Observatory. |
| Windsor, N. S | 29.07 | 701.2 | 30.07 | 763.8 | 25.5 | — 3.6 | 75 | ..... | ..... | ..... | ..... | 1cs | 0 | ..... | ..... | 0 | 0 | Fair | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 32.0 | 0.0 | 100 | NE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.38 | 9.7 | Overcast | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.97 | 761.2 | 30.22 | 767.6 | 24 | — 4.4 | 61 | S | 11 | 4.9 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Alpena, Michigan | 29.50 | 749.3 | 30.21 | 767.3 | 12 | —11.1 | 80 | Calm | 0 | 0 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Atlanta, Georgia | 29.09 | 738.9 | 30.26 | 768.6 | 43 | 6.1 | 43 | S | 8 | 3.6 | ..... | 0 | Fg;smk | ..... | Calm | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 30.33 | 770.4 | 30.34 | 770.6 | 38 | 3.3 | 72 | SW | 8 | 3.6 | ..... | 10k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Augusta, Georgia | 30.16 | 766.1 | 30.34 | 770.6 | 40 | 4.4 | 82 | W | 1 | 0.4 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Baltimore, Maryland | 30.28 | 769.1 | 30.33 | 770.4 | 35 | 1.7 | 70 | W | 2 | 0.9 | ..... | 8k | Fog | W | Calm | 0 | 0 | Foggy | |
| Barnegat, New Jersey | 30.28 | 769.1 | 30.31 | 769.9 | 41 | 5.0 | 65 | SW | 12 | 5.4 | ..... | 10cs | 0 | Calm | ..... | 0.01 | 0.3 | Cloudy | |
| Bismarck, Dakota | 28.29 | 718.6 | 30.14 | 765.5 | — 9 | —22.8 | 100 | Calm | 0 | 0. | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boerne, Texas | 28.49 | 723.6 | 29.78 | 756.4 | 61 | 16.1 | 100 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Boise City, Idaho | 26.97 | 685.0 | 29.93 | 760.2 | 42 | 5.6 | 83 | SE | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.26 | 6.6 | Light rain | |
| Boston, Massachusetts | 30.06 | 763.5 | 30.22 | 767.6 | 35 | 1.7 | 61 | SW | 15 | 6.7 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Fair | |
| Bracketville, Texas | 28.84 | 732.5 | 29.84 | 757.9 | 65 | 18.3 | 89 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | Inap. | Inap. | Cloudy | |
| Breckenridge, Minnesota | 29.16 | 740.7 | 30.28 | 769.1 | — 1 | —18.3 | 85 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Brownsville, Texas | 29.92 | 760.0 | 29.97 | 761.2 | 67 | 19.4 | 95 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.47 | 748.5 | 30.21 | 767.3 | 25 | — 3.9 | 75 | SW | 11 | 4.9 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 47 | 8.3 | Inap. | S | ..... | ..... | 1 | 2c | 0 | N | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.84 | 757.9 | 30.15 | 765.8 | 23 | — 5.0 | 80 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Cairo, Illinois | 29.62 | 752.3 | 30.02 | 762.5 | 47 | 8.3 | 48 | SE | 9 | 4.0 | ..... | 2cs | 8s | Calm | SW | 0 | 0 | Cloudy | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.20 | 640.1 | 30.00 | 762.0 | 50 | 10.0 | 32 | N | 4 | 1.8 | ..... | 2k | 0 | NE | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 49 | 9.4 | 44 | S | ..... | ..... | 1 | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Campo, California | 27.52 | 699.0 | 30.09 | 764.3 | 42 | 5.6 | 53 | Calm | 0 | 0 | ..... | 5k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Cape Hatteras, N. Carolina | 30.37 | 771.4 | 30.38 | 771.6 | 45 | 7.2 | 76 | NE | 4 | 1.8 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Cape Henry, Virginia | 30.34 | 770.6 | 30.35 | 770.9 | 43 | 6.1 | 75 | SW | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.34 | 770.6 | 30.36 | 771.1 | 49 | 9.4 | 85 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape May, New Jersey | 30.29 | 769.4 | 30.32 | 770.1 | 42 | 5.6 | 66 | S | 14 | 6.3 | ..... | 2cs | Haze | W | ..... | 0 | 0 | Fair | |
| Castroville, Texas | 29.17 | 740.9 | 29.86 | 758.4 | 64 | 17.8 | 94 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | S | Inap. | Inap. | Cloudy | |
| Charleston, South Carolina | 30.24 | 768.1 | 30.30 | 769.6 | 53 | 11.7 | 80 | NE | 1 | 0.4 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 23.87 | 606.3 | 29.81 | 757.2 | 27 | — 2.8 | 76 | NW | 10 | 4.5 | ..... | 5cs | 0 | W | ..... | 0.17 | 4.3 | Fair | |
| Chicago, Illinois | 29.40 | 746.7 | 30.12 | 765.0 | 32 | 0.0 | 89 | E | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.13 | 3.3 | Light snow | |
| Cincinnati, Ohio | 29.55 | 750.6 | 30.23 | 767.8 | 33 | 0.6 | 74 | E | 3 | 1.3 | ..... | ..... | 10s | ..... | SE | Inap. | Inap. | Cloudy | |
| Cleveland, Ohio | 29.48 | 748.8 | 30.25 | 768.3 | 27 | — 2.8 | 88 | S | 7 | 3.1 | ..... | ..... | 10n | ..... | Calm | 0.03 | 0.8 | Light snow | |
| Coleman City, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Columbus, Ohio | 29.36 | 745.7 | 30.24 | 768.1 | 32 | 0.0 | 79 | SE | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Concho, Texas | 27.99 | 710.9 | 29.64 | 752.8 | 57 | 13.9 | 69 | NW | 8 | 3.6 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Corsicana, Texas | 29.45 | 748.0 | 29.91 | 759.7 | 60 | 15.6 | 82 | S | 14 | 6.3 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.38 | 746.2 | 30.04 | 763.0 | 33 | 0.6 | 79 | E | 13 | 5.8 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light snow | |
| Deadwood, Dakota | 25.23 | 640.8 | ..... | ..... | 10 | —12.2 | 79 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Decatur, Texas | 28.62 | 726.7 | 29.76 | 755.9 | 58 | 14.4 | 82 | S | 20 | 8.9 | ..... | 0 | 2s | ..... | S | 0 | 0 | Clear | |
| Denison, Texas | 29.02 | 737.1 | 29.80 | 756.9 | 58 | 14.4 | 82 | S | 14 | 6.3 | ..... | 5cs | 0 | SW | ..... | 0 | 0 | Fair | |
| Denver, Colorado | 24.66 | 626.4 | 29.82 | 758.9 | 28 | — 2.2 | 88 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Des Moines, Iowa | 29.04 | 737.6 | 29.95 | 760.7 | 31 | — 0.6 | 89 | E | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.03 | 0.8 | Heavy snow | |
| Detroit, Michigan | 29.49 | 749.0 | 30.20 | 767.1 | 26 | — 3.3 | 100 | W | 3 | 1.3 | ..... | ..... | 10n | ..... | W | Inap. | Inap. | Light snow | |
| Dodge City, Kansas | 27.31 | 693.7 | 29.68 | 753.9 | 28 | — 2.2 | 77 | N | 28 | 12.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.35 | 745.5 | 30.08 | 764.0 | 28 | — 2.2 | 88 | SE | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Light snow | |
| Duluth, Minnesota | 29.45 | 748.0 | 30.20 | 767.1 | 7 | —13.9 | 77 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.14 | 740.1 | 29.86 | 758.4 | 64 | 17.8 | 59 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Eastport, Maine | 30.05 | 763.3 | 30.12 | 765.0 | 24 | — 4.4 | 61 | W | 5 | 2.2 | ..... | 8c | Haze | W | Calm | 0 | 0 | Fair | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| El Paso, Texas | 26.21 | 665.7 | ..... | ..... | 50 | 10.0 | 18 | W | 12 | 5.4 | ..... | 0 | 1s | ..... | W | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.48 | 748.8 | 30.23 | 767.8 | 30 | — 1.1 | 89 | SW | 7 | 3.1 | ..... | Haze | 5s | Calm | W | Inap. | Inap. | Cloudy | |
| Escanaba, Michigan | 29.50 | 749.3 | 30.23 | 767.8 | 0 | —17.8 | 54 | W | 1 | 0.4 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Florence, Arizona | 28.53 | 724.6 | 30.13 | 765.3 | 50 | 10.0 | 32 | W | 1 | 0.4 | ..... | c | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 28.06 | 712.7 | ..... | ..... | —12 | —24.4 | 50 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.47 | 646.9 | 29.54 | 750.3 | 45 | 7.2 | 19 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.13 | 638.3 | 30.09 | 764.3 | 59 | 15.0 | 23 | SW | 10 | 4.5 | ..... | 2k | 0 | W | ..... | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.21 | 741.9 | 29.74 | 755.4 | 57 | 13.9 | 75 | S | 20 | 8.9 | ..... | 2k | 5ks | W | SW | 0 | 0 | Cloudy | |
| Fort Griffin, Texas | 28.51 | 724.1 | 29.75 | 755.6 | 60 | 15.6 | 77 | SE | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Fort Keogh, Montana | 27.40 | 696.0 | ..... | ..... | 10 | —12.2 | 79 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort McKavett, Texas | 27.69 | 703.3 | 29.57 | 751.1 | 60 | 15.6 | 77 | SW | 12 | 5.4 | ..... | 0 | 8s | ..... | SW | 0 | 0 | Fair | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.58 | 725.9 | 29.68 | 753.9 | 46 | 7.8 | 84 | W | 8 | 3.6 | ..... | 0 | 5ks | ..... | W | 0 | 0 | Fair | |
| Fort Stevenson, Dakota | 28.26 | 717.8 | ..... | ..... | —21 | —29.4 | 62 | Calm | 0 | 0 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fredericksburg, Texas | 28.23 | 717.0 | 29.75 | 755.6 | 65 | 18.3 | 89 | S | 13 | 5.8 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 29.99 | 761.7 | 30.03 | 762.8 | 65 | 18.3 | 100 | S | 6 | 2.7 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Graham, Texas | 28.74 | 730.0 | 29.76 | 755.9 | 61 | 16.1 | 82 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.47 | 748.5 | 30.16 | 766.1 | 28 | — 2.2 | 77 | E | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Indianapolis, Indiana | 29.34 | 745.2 | 30.15 | 765.8 | 32 | 0.0 | 59 | E | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Indianola, Texas | 29.96 | 761.0 | 29.99 | 761.7 | 67 | 19.4 | 89 | S | 11 | 4.9 | ..... | Haze | 8s | Calm | S | 0 | 0 | Fair | |
| Jacksboro, Texas | 28.71 | 729.2 | 29.83 | 757.7 | 55 | 12.8 | 62 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.28 | 769.1 | 30.31 | 769.9 | 54 | 12.2 | 80 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.29 | 744.0 | 29.92 | 760.0 | 33 | 0.6 | 79 | E | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Threatening | |
| Key West, Florida | 30.19 | 766.8 | 30.22 | 767.6 | 72 | 22.2 | 76 | E | 9 | 4.0 | ..... | 2k | 0 | E | ..... | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 30.32 | 770.1 | 30.35 | 770.9 | 45 | 7.2 | 76 | SE | 11 | 4.9 | ..... | 2ck | 0 | W | ..... | 0 | 0 | Fair | |
| Knoxville, Tennessee | 29.25 | 742.9 | 30.31 | 769.9 | 36 | 2.2 | 75 | NE | 4 | 1.8 | ..... | 8ck | Haze | W | Calm | 0 | 0 | Cloudy | |
| La Crosse, Wisconsin | 29.31 | 744.5 | 30.08 | 764.0 | 26 | — 3.3 | 75 | NE | 2 | 0.9 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| La Mesilla, New Mexico | 26.07 | 662.2 | 30.22 | 767.6 | 45 | 7.2 | 46 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.50 | 749.3 | 29.84 | 757.9 | 66 | 18.9 | 95 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 28.89 | 733.8 | 29.74 | 755.4 | 37 | 2.8 | 71 | NE | 2 | 0.9 | ..... | 1ck | Fog | W | ..... | 0.03 | 0.8 | Foggy | |
| Los Angeles, California | 29.78 | 756.4 | 30.13 | 765.3 | 51.0 | 10.6 | 89 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.29 | 7.4 | Cloudy | |
| Louisville, Kentucky | 29.57 | 751.1 | 30.15 | 765.8 | 37 | 2.8 | 53 | NE | 4 | 1.8 | ..... | ..... | 10s;sm' | ..... | Calm | Inap. | Inap. | Smoky | |
| Lynchburg, Virginia | 29.60 | 751.8 | 30.32 | 770.1 | 32 | 0.0 | 50 | Calm | 0 | 0 | ..... | 0 | 2ks | ..... | Calm | 0 | 0 | Clear | |
| Madison, Wisconsin | 29.06 | 738.1 | 30.09 | 764.8 | 29 | — 1.7 | 67 | SE | 6 | 2.7 | ..... | 2cs | 0 | SW | ..... | 0 | 0 | Fair | |
| Marquette, Michigan | 29.41 | 747.0 | 30.18 | 766.6 | 9 | —12.8 | 57 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.32 | 719.3 | 30.04 | 763.0 | 63 | 17.2 | 83 | SW | 9 | 4.0 | ..... | 1cs | 5s | W | SW | 0 | 0 | Fair | |
| Memphis, Tennessee | 29.70 | 754.4 | 30.02 | 762.5 | 51 | 10 6 | 71 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Milwaukee, Wisconsin | 29.36 | 745.7 | 30.13 | 765.3 | 30 | — 1.1 | 68 | E | 9 | 4.0 | ..... | 5cs | 5s | NW | Calm | 0 | 0 | Cloudy | |
| Mobile, Alabama | 30.18 | 766.6 | 30.23 | 767.8 | 49.5 | 9.7 | 85 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 30.02 | 762.5 | 30.27 | 768.8 | 44 | 6.7 | 81 | SE | 1 | 0.4 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Morgantown, West Virginia | 29.18 | 741.2 | 30.29 | 769.4 | 34 | 1.1 | 61 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Mt. Washington, N. H. | 23.44 | 595.4 | 29.80 | 756.9 | 8 | —13.3 | 100 | NW | 54 | 24.1 | ..... | ..... | Fog | ..... | NW | 0 | 0 | Foggy | |
| Nashville, Tennessee | 29.59 | 751.6 | 30.13 | 765.3 | 45 | 7.2 | 61 | E | 1 | 0.4 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Cloudy | |
| New Haven, Connecticut | 30.16 | 766.1 | 30.28 | 769.1 | 35 | 1.7 | 70 | SW | 11 | 4.9 | ..... | 5cs | Haze | SW | Calm | 0 | 0 | Fair | |
| New London, Connecticut | 30.23 | 767.8 | 30.29 | 769.4 | 36 | 2.2 | 61 | SW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Orleans, Louisiana | 30.10 | 764.5 | 30.16 | 766.1 | 57 | 13.9 | 87 | S | 11 | 4.9 | ..... | 0 | 8s | ..... | S | 0 | 0 | Fair | |
| Newport, Rhode Island | 30.21 | 767.3 | 30.26 | 768.6 | 35 | 1.7 | 61 | SW | 14 | 6.3 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| New York, New York | 30.12 | 765.0 | 30.31 | 769.9 | 35 | 1.7 | 61 | W | 10 | 4.5 | ..... | Haze | 5ks | Calm | E | Inap. | Inap. | Fair | |
| Norfolk, Virginia | 30.28 | 769.1 | 30.34 | 770.6 | 40 | 4.4 | 65 | S | 8 | 3.6 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.08 | 687.8 | 29.83 | 757.7 | 15 | — 9.4 | 65 | N | 12 | 5.4 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Olympia, Washington Ter. | 29.70 | 754.4 | 29.74 | 755.4 | 40.1 | 4.5 | 91 | S | 2 | 0.9 | | 0 | 5s | | S | 0.50 | 12.7 | Fair | |
| Omaha, Nebraska | 28.76 | 730.5 | 29.90 | 759.4 | 30 | — 1.1 | 100 | N | 14 | 6.3 | | | 10n | | Calm | 0.03 | 0.8 | Heavy snow | |
| Oswego, New York | 29.86 | 758.4 | 30.20 | 767.1 | 35 | 1.7 | 80 | W | 8 | 3.6 | | | 10n | | W | 0.10 | 2.5 | Light snow. | |
| Pembina, Dakota | 29.32 | 744.7 | 30.29 | 769.4 | —18 | —27.8 | 100 | W | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Philadelphia, Pa | 30.26 | 768.6 | 30.32 | 770.1 | 34 | 1.1 | 79 | SW | 3 | 1.3 | | 10cs | Haze | NW | Calm | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.84 | 732.5 | 30.05 | 778.5 | 56 | 13.3 | 40 | E | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.50 | 444.5 | 29.71 | 754.6 | 4 | —15.6 | 48 | SW | 44 | 19.7 | | 5k | 0 | SW | | Inap. | Inap. | Fair | |
| Ploche, Nevada | 23.89 | 606.8 | 29.66 | 753.4 | 38 | 3.3 | 38 | S | 10 | 4.5 | | 0 | 2s | | Calm | Inap. | Inap. | Fair | |
| Pittsburg, Pennsylvania | 29.43 | 747.5 | 30.29 | 769.4 | 29 | — 1.7 | 67 | W | 4 | 1.8 | | 10c | 0 | W | | 0 | 0 | Cloudy | |
| Port Huron, Michigan | 29.48 | 748.8 | 30.18 | 766.6 | 26 | — 3.3 | 75 | SW | 6 | 2.7 | | 10cs | 0 | W | | Inap. | Inap. | Cloudy | |
| Portland, Maine | 30.10 | 764.5 | 30.15 | 765.8 | 26 | — 3.3 | 53 | SW | 8 | 3.6 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Portland, Oregon | 29.81 | 757.2 | 29 91 | 759.7 | 43.0 | 6.1 | 83 | S | 13 | 5.8 | | 0 | Sn | | S | 0.27 | 6.9 | Light rain | |
| Prescott, Arizona | 24.09 | 627.1 | 30.05 | 763.3 | 52 | 11.1 | 35 | W | 11 | 4.9 | | 0 | 5s | | Calm | 0 | 0 | Fair | |
| Pilot Point, Texas | 29.16 | 740.7 | 30.00 | 762.0 | 48 | 8.9 | 85 | SE | 14 | 6.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Punta Rassa, Florida | 30.24 | 768.1 | 30.26 | 768.6 | 64 | 17.8 | 78 | NE | 10 | 4.5 | | 5k | 0 | NE | | 0 | 0 | Fair | |
| Red Bluff, California | 29.62 | 752.3 | 29.98 | 761.5 | 49 | 9.4 | 93 | SE | 6 | 2.7 | | 0 | 5ks | | SE | 0.69 | 17.5 | Fair | |
| Rio Grande City, Texas | 29.77 | 756.1 | 29.98 | 761.5 | 65 | 18.3 | 89 | W | 4 | 1.8 | | | 10s | | S | Inap. | Inap. | Cloudy | |
| Rochester, New York | 29.57 | 751.1 | 30.22 | 767.6 | 28 | — 2.2 | 77 | W | 6 | 2.7 | | 1ck | 0 | NW | | Inap. | Inap. | Clear | |
| Roseburg, Oregon | 29.39 | 746.5 | 29.96 | 761.0 | 40.0 | 4.4 | 91 | SE | 3 | 1.3 | | | 10s | | | 0.11 | 2.8 | Cloudy | |
| Sacramento, California | 29.93 | 760.2 | 30.01 | 762.2 | 51.5 | 10.8 | 83 | SE | 12 | 5.4 | | | 10s | | SW | 0.23 | 5.8 | Cloudy | |
| St. Louis, Missouri | 29.34 | 745.2 | 29.92 | 760.0 | 40 | 4.4 | 66 | SE | 6 | 2.7 | | 5ck | 5s | W | Calm | 0 | 0 | Cloudy | |
| St. Marks, Florida | 30.25 | 768.3 | 30.27 | 768.8 | 47 | 8.3 | 92 | E | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.22 | 742.2 | 30.11 | 764.8 | 16 | — 8.9 | 41 | N | 8 | 3.6 | | 8cs | 0 | NW | | 0 | 0 | Fair | |
| Salt Lake City, Utah | 25.54 | 648.7 | 29.88 | 758.9 | 41 | 5.0 | 57 | Calm | 0 | 0 | | | 10ks | | W | 0.03 | 0.8 | Threatening | |
| San Antonio, Texas | 29.25 | 742.9 | 29.82 | 757.4 | 64 | 17.8 | 89 | SE | 2 | 0.9 | | | 10s | | Calm | Inap. | Inap. | Threatening | |
| San Diego, California | 30.09 | 764.3 | 30.16 | 766.1 | 51 | 10.6 | 93 | E | 3 | 1.3 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.64 | 750.3 | 30.25 | 768.3 | 30 | — 1.1 | 89 | SW | 4 | 1.8 | | | 10n | | Calm | 0.05 | 1.3 | Light snow | |
| Sandy Hook, New Jersey | 30.26 | 768.6 | 30.30 | 769.6 | 36 | 2.2 | 71 | W | 9 | 4.0 | | 2c | 0 | W | | 0 | 0 | Fair | |
| San Francisco, California | 29.94 | 760.5 | 30.01 | 762.2 | 55.7 | 13.2 | 87 | SW | 5 | 2.2 | | | 10n | | Calm | 0.34 | 8.6 | Light rain | |
| Santa Fé, New Mexico | 23.16 | 588.2 | 29.70 | 754.4 | 38 | 3.3 | 45 | SW | 2 | 0.9 | | 5ck | 0 | W | | 0 | 0 | Fair | |
| Savannah, Georgia | 30.24 | 768.1 | 30.33 | 770.4 | 49 | 9.4 | 93 | E | 1 | 0.4 | | | Fog | | Calm | 0 | 0 | Foggy | |
| Shreveport, Louisiana | 29.73 | 755.1 | 29.95 | 760.7 | 60 | 15.6 | 88 | S | 6 | 2.7 | | | 10s | | Calm | Inap. | Inap. | Cloudy | |
| Silver City, New Mexico | 24.27 | 616.4 | 30.56 | 776.2 | 37 | 2.8 | 71 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.32 | 770.1 | 30.36 | 771.1 | 53 | 11.7 | 80 | SE | 10 | 4.5 | | 0 | 8s | | SW | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 30.11 | 764.8 | 30.25 | 768.3 | 26 | — 3.3 | 75 | S | 2 | 0.9 | | 5ck | 5ks | W | W | 0 | 0 | Cloudy | |
| Stockton, Texas | 29.88 | 682.7 | 29.88 | 758.9 | 52 | 11.1 | 35 | SW | 6 | 2.7 | | 5cs | 0 | SW | | 0 | 0 | Fair | |
| Thatcher's Island, Mass | 30.11 | 764.8 | 30.18 | 766.6 | 31 | — 0.6 | 69 | SW | 27 | 12.1 | | 5k | 0 | SW | | 0 | 0 | Fair | |
| Toledo, Ohio, | 29.48 | 748.8 | 30.20 | 767.1 | 32 | 0.0 | 79 | SW | 6 | 2.7 | | | 10n | | Calm | 0.01 | 0.3 | Light snow | |
| Tucson, Arizona | 27.56 | 700.0 | 30.11 | 764.8 | 47 | 8.3 | 55 | E | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.52 | 749.8 | 30.02 | 762.5 | 42.0 | 5.6 | 74 | SW | 12 | 5.4 | | 0 | 2s | | SW | 0.29 | 7.4 | Fair | |
| Unalashka, Aleutian Islands | | | | | 25 | — 3.9 | 88 | Calm | | | 0 | 0 | 0 | | | 0 | 0 | Clear | |
| Uvalde, Texas | 29.09 | 738.9 | 29.90 | 759.4 | 63 | 17.2 | 89 | Calm | 0 | 0 | | | 10n | | Calm | 0.07 | 1.8 | Light rain | |
| Vicksburg, Mississippi | 29.86 | 758.4 | 30.12 | 765.0 | 55 | 12.8 | 81 | S | 5 | 2.2 | | | 10s | | S | 0 | 0 | Cloudy | |
| Virginia City, Montana | 23.99 | 609.3 | 29.47 | 748.5 | 23 | — 5.0 | 86 | Calm | 0 | 0 | | | 10s | | Calm | 0.04 | 1.0 | Cloudy | |
| Visalia, California | 29.71 | 754.6 | 30.08 | 764.0 | 51.5 | 10.8 | 85 | NW | 3 | 1.3 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Washington, D. C. | 30.20 | 767.1 | 30.32 | 770.1 | 30 | — 1.1 | 78 | Calm | 0 | 0 | | 8ck | Fog | W | W | Inap | Inap. | Cloudy | |
| Wickenburg, Arizona | | | | | 47 | 8.3 | 55 | Calm | | | 0 | 8c | Haze | NW | Calm | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 30.26 | 768.6 | 30.34 | 770.6 | 52 | 11.1 | 73 | SE | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.49 | 647.4 | 29.85 | 758.2 | 40 | 4.4 | 65 | SW | 10 | 4.5 | | | 10s | | SW | Inap. | Inap. | Cloudy | |
| Wood's Holl, Mass | 30.22 | 767.6 | 30.26 | 768.6 | 37 | 2.8 | 80 | W | 24 | 10.7 | | | 5ks | | SW | 0.02 | 0.5 | Cloudy | |
| Yankton, Dakota | 28.70 | 731.3 | 30.18 | 766.6 | 14 | —10.0 | 72 | NW | 10 | 4.5 | | 10c | 0 | NW | | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.82 | 757.4 | 29.99 | 761.7 | 57 | 13.9 | 58 | W | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark. | 28.21 | 716.5 | 29.59 | 751.6 | 52 | 11.1 | 72 | | | | | | | | | | | | J. B. Gordon. |
| Havana, Cuba, W. I. | 30.16 | 766.1 | 30.21 | 767.8 | 70 | 21.1 | 79 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | | | | | | | | | | | | | | | | | | | James Gall. |
| Medellin, Colombia, S. A. | 25.29 | 642.4 | | | 64.5 | 18.1 | 87 | Calm | 0 | 0 | | | 10n | | | 0.83 | 21.1 | | Thomas Herran. |
| Navassa, W. I. | 30.05 | 763.3 | 30.13 | 765.3 | 79 | 26.1 | | NE | 5.1 | 2.3 | | | | | | 0 | 0 | Cloudy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.05 | 763.3 | 30.05 | 763.3 | 79 | 26.1 | 91 | NE | | | 2 | | 10n | | | 0.500 | 12.70 | Raining | C. J. Hering. |
| Santiago de Cuba, W. I. | | | | | | | | | | | | | | | | | | | Robert Mason. |
| St. Thomas, W. I. | | | | | | | | | | | | | | | | | | | G. O. Gellich. |
| York Factory, B. A. | | | | | | | | | | | | | | | | | | | A. J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,022 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft. or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.656 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.94 | 760.5 | 54 | 12.2 | 53 | 11.7 | 93 | SW | 13 | 5.8 | ..... | ..... | 8 | ..... | S | 1.09 | 27.7 | ..... | ..... | Cloudy..... | |
| Navy Yard, Pensacola, Fla. | 30.35 | 770.9 | 64 | 17.8 | 64 | 17.8 | 89 | S | 9 | 4.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 30.20 | 767.1 | 67 | 19.4 | 23 | — 5.0 | 73 | W | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan.....* | 29.71‡ | 754.6‡ | ..... | ..... | 44 | 6.7 | 92 | Calm | ..... | ..... | 0 | ..... | 10n | ..... .. | SW | Light | Light | ..... | ..... | Light rain.... | |
| Adams, Panama .....* | 30.01 | 763.0 | 78 | 25.6 | 77 | 25.0 | 95 | NW | ..... | ..... | 2 | ..... | 10? | ..... | N; W | ..... | ..... | ..... | ..... | Fair?..... | |
| Alaska, San Francisco, Cal..... | 30.02‡ | 762.5‡ | ..... | ..... | 53 | 11.7 | 93 | WSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.32 | 8.1 | Smooth | ..... | Raining ..... | |
| Alliance, Leghorn, Italy..... | 29.87‡ | 758.7‡ | ..... | ..... | 61 | 16.1 | 77 | S | ..... | ..... | 1–2 | ..... | 8 | ..... | S; E | ..... | ..... | Light | S | Cloudy..... | |
| Ashuelot, Hong-Kong, China. ..*.. | 30.08‡ | 764.0‡ | ..... | ..... | 59 | 15.0 | 70 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Canonicus, New Orleans, La.....*... | 30.08 | 764.0 | 45 | 7.2 | 61 | 16.1 | 100 | SE | ..... | ..... | 3 | ..... | 5 | ..... | SE | ..... | ..... | ..... | ..... | Fair..... | |
| Colorado, New York, N. Y..... | 30.27 | 768.8 | 35 | 1.7 | 35 | 1.7 | 81 | SW | 6 | 2.7 | ..... | ..... | 0 | ..... | SW | ..... | ..... | ..... | ..... | Hazy ..... | |
| Constitution Lisbon, Portugal..... | 29.50‡ | 749.3‡ | ..... | ..... | 56 | 13.3 | 94 | WSW | ..... | ..... | 2 | ..... | 8 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Despatch, Naples, Italy..... | 29.89‡ | 759.2‡ | ..... | ..... | 69 | 20.6 | 56 | S | ..... | ..... | 2 | ..... | 8 | ..... | Calm | ..... | ..... | Smooth | ..... | Fair ..... | |
| Franklin, Norfolk, Va.....*... | 30.44 | 773.2 | 59 | 15.0 | 42 | 5.6 | 83 | S | 6 | 2.7 | ..... | ..... | 8? | ..... | W | 0 | 0 | ..... | ..... | Clear?..... | |
| Gettysburg, Genoa, Italy ..... | 29.79‡ | 756.7‡ | ..... | ..... | 54 | 12.2 | 80 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.20 | 5.1 | ..... | ..... | Rainy ..... | |
| Hartford, Montevideo, Uruguay*... | 30.03 | 762.8 | 70 | 21.1 | 75 | 23.9 | 77 | NNE | ..... | ..... | 2 | ..... | 8 | ..... | NNE | 0 | 0 | Smooth | ..... | Cloudy ..... | |
| Lackawana, Payta, Peru.....*.. | 29.79‡ | 756.7‡ | ..... | ..... | 73 | 22.8 | 85 | E | ..... | ..... | 1 | ..... .... | 8 | ..... | S | 0 | 0 | Smooth | ..... | Overcast..... | |
| Michigan, Erie, Pa.....† | 30.10 | 764.5 | ..... | ..... | 29.5 | — 1.4 | 83 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Light snow. | |
| Monocacy, Shanghai, China.....*.. | 30.02‡ | 764.3‡ | ..... | ..... | 47 | 8.3 | 70 | WSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monongehela, Yokohama, Japan ....*.. | 29.64‡ | 752.8‡ | ..... | ..... | 46 | 7.8 | 100 | N | ..... | ..... | 2–3 | ..... | 10 | ..... | ..... | Light | Light | ..... | ..... | Drizzling..... | |
| New Hampshire, Port Royal, S. C.....*... | 30.35 | 770.9 | 55 | 12.8 | 54 | 12.2 | 93 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Onward, Callao, Peru.....†*.. | 30.10 | 764.5 | ..... | ..... | 69 | 20.6 | 90 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Palos, Tientsin, China.....*... | 30.02 | 762.5 | 49 | 9.4 | 49 | 9.4 | 64 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 38 | 3.3 | 54 | E | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Fair ..... | |
| Pensacola, Valparaiso, Chili..... | 30.03‡ | 762.8‡ | ..... | ..... | 68 | 20.0 | 60 | Calm | 0 | 0 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Fair..... | |
| Plymouth, N. 36° 35′, W. 60° 50′..... | 30.22‡ | 767.6‡ | ..... | ..... | 62 | 16.7 | 88 | WNW | ..... | ..... | 5–6 | ..... | 8 | ..... | NW | ..... | ..... | Long | NW | Squally..... | |
| Powhatan, St. Thomas, W. I..... | 30.16‡ | 766.1‡ | ..... | ..... | 79 | 26.1 | 74 | NE | ..... | ..... | 3 | ..... | 8 | ..... | NE | 0 | 0 | Smooth | NE | Fair ..... | |
| Quinnebaug, N. 38° 27′, E. 2° 09′..... | 29.74‡ | 755.4‡ | ..... | ..... | 58 | 14.4 | 76 | WSW | ..... | ..... | 6 | ..... | 8 | ..... | WSW | ..... | ..... | High | S; W | Cloudy ..... | |
| Ranger. Foochow, China.....*... | 30.13‡ | 765.3‡ | ..... | ..... | 58 | 14.4 | 76 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear. ..... | |
| Richmond. N. 24° 22′, E. 36° 26′..... | 29.89‡ | 759.2‡ | ..... | ..... | 74 | 23.3 | 55 | NNW | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | Mod'ate | NNW | Clear ..... | |
| Rio Bravo, Brownsville, Texas..... | 29.96 | 761.0 | 68 | 20.0 | 69 | 20.6 | 95 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Santee, Annapolis, Md..... | 30.30‡ | 769.6‡ | ..... | ..... | 36 | 2.2 | 80 | W | ..... | ..... | 1 | ..... | 10 | ..... | WNW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Saratoga, Hampton Roads, Va.....a | 30.35‡ | 770.9‡ | ..... | ..... | 42 | 5.6 | 91 | SSW | ..... | ..... | 3 | ..... | 5? | ..... | ..... | 0 | 0 | ..... | ..... | Clear?..... | |
| St. Louis, League Island, Pa..... | 30.20 | 767.1 | 50 | 10.0 | 32 | 0.0 | ..... | W | 3 | 1.3 | ..... | ..... | 10 | ..... | W | 0 | 0 | ..... | ..... | Cloudy..... | |
| Supply, Brooklyn, N. Y..... | 30.31‡ | 769.9‡ | ..... | ..... | 38 | 3.3 | 72 | W | ..... | ..... | 2 | ..... | 5 | ..... | NW | ..... | ..... | ..... | ..... | Fair ..... | |
| Trenton Naples, Italy.....*... | 29.88‡ | 758.9‡ | ..... | ..... | 65 | 18.3 | 63 | SW | ..... | ..... | 1–2 | ..... | 2 | ..... | SSE | 0.01 | 0.3 | Mod'ate | S | Clear..... | |
| Tuscarora, Salinas Cruz, Mexico... | 29.99‡ | 761.7‡ | ..... | ..... | 79 | 26.1 | ?? | NNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Long | S | Clear..... | |
| Wabash, Boston, Mass..... | 30.26‡ | 768.6‡ | ..... | ..... | 31 | — 0.6 | 79 | SW | 18 | 8.0 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Fair ..... | |
| Wyoming, Alexandria, Egypt...*... | 30.06‡ | 763.5‡ | ..... | ..... | 65 | 18.3 | 100 | NW | ..... | ..... | 2–3 | ..... | 2 | ..... | NW | ..... | ..... | Smooth | ..... | Fair..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | Character. | Direction from— | | |

### PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Granada, Capt. Austin, N. 18° 32', W. 103° 42'...† | | 30.19‡ | 766.8‡ | 75 | 23.9 | | WNW | | | 2 | | 0 | | | | Light | W | Hazy. | Capt. A. Fuller. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |
| S. S. Zealandia, N. 31° 40', W. 186° 55' | | 30.12‡ | 765.0‡ | | | | NNW | | | 3 | | | W;N | | | Long; mod'ate | NW | Fair | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; and no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

### WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

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| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

### OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, N. 27° 09', E. 124° 27' | | 30.07‡ | 763.8‡ | 57 | 13.9 | 63 | N | | | 5 | | ks | | N | 0 | Mod'ate | NNE | D. clouds | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 22° 17', E. 114° 10'...† | | 30.17‡ | 766.3‡ | | | | NE | | | 4 | | c | | SW | 0 | | | | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

### NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 51° 12', E. 1° 25' | | 29.84‡ | 757.9‡ | | | | E | | | 4 | | | | E | | Smooth | ESE | Cloudy | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | RAIN-FALL OF MELTED SNOW IN THE PAST 24 HOURS. | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | CHARACTER. | DIRECTION FROM— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Lo'wr 0—10. | Upper. From— | Lower. From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Mersey River | | 29.95‡ | 761.5‡ | 48 | 8.9 | | ESE | | | 6 | | 8 | | SE | 0 | | | Partly cl'dy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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**ALLAN LINE MARINE SERIES.**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES.** (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, N. 38° 20′, W. 73° 32′ | | 30.29‡ | 769.4‡ | 54 | 12.2 | 55 | Calm | 0 | 0 | | | 0 | | | 0 | Swell | NE | Clear | Capt. James Jorgensen. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASS'G'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 21, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer: Corrected for instrumental error and temperature. Inches. | Barometer: Corrected for instrumental error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | 29.97 | 761.1 | 59.7 | 15.4 | 76 | SW | | | 4 | | 8 | | | 0.217 | 5.5 | Foggy | |
| Nemours | | | 29.72 | 754.9 | 70.5 | 21.4 | 48 | W | | | 1 | | 8 | | | 0 | 0 | Very cloudy | Kesxuche. |
| Algiers | | | 29.64 | 752.9 | 61.5 | 16.4 | 62 | N | | | 3 | | 0 | | | 0.299 | 7.6 | Clear. | Tourilliere. |
| La Calle | | | 29.65 | 753.1 | 64.8 | 18.2 | 78 | NNW | | | 1 | | 8 | | | 0 | 0 | Very cloudy | Foufrede. |
| Tunis | | | 29.82 | 757.5 | 55.2 | 12.9 | 75 | WSW | | | 3 | | 0 | | | 0 | 0 | Clear. | Jacques. |
| Sfax | | | 29.79 | 756.7 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 29.79 | 756.6 | 59.0 | 15.0 | 41 | SSW | | | 6 | | 5 | | | 0.394 | 10.0 | Cloudy | Herbin. |
| Tebessa | | | 29.78 | 756.3 | 69.3 | 20.7 | 35 | N | | | 5 | | 5 | | | 0 | 0 | Cloudy | Watrin. |
| Geriville | | | 29.78 | 756.3 | 60.3 | 15.7 | 93 | S | | | 4 | | 10 | | | 0 | 0 | Covered | Brugniaux. |
| Laghouat | | | 29.76 | 755.8 | 63.7 | 17.6 | 35 | W | | | 4 | | 0 | | | 0 | 0 | Clear. | Bertrand. |
| Biskra | | | 29.70 | 754.4 | 77.7 | 25.4 | 22 | ESE | | | 2 | | 0 | | | 0 | 0 | Clear. | Chanvaux. |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.22 | 742.3 | 29.77 | 756.2 | 54.9 | 12.7 | 66 | E | | | 3 | | 10 | | | 0.315 | 8.0 | Raining | Prof. Ivan Stosir. |
| Cracow, I. R. Observatory | 29.30 | 744.3 | 30.11 | 764.7 | 34.5 | 1.4 | 93 | E | | | 3 | | 4 | | | 0 | 0 | | Dr. Wierzbiski |
| Eperies | 29.07 | 738.4 | 29.98 | 761.6 | 34.9 | 1.6 | | N | | | 3 | | 3c | | | 0 | 0 | | Julius Mikolik. |
| Gratz | 28.60 | 726.4 | 29.85 | 758.3 | 47.7 | 8.7 | 72 | E | | | 2 | | 10 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.34 | 719.8 | 29.78 | 756.3 | 47.8 | 8.8 | 98 | E | | | 1 | | 10 | | | 0.427 | 10.85 | Raining | Prof. A. Gottschling. |
| Kremsmünster | 28.47 | 723.1 | 29.84 | 758.0 | 39.0 | 3.9 | 90 | ENE | | | 5 | | 10 | | | 0 | 0 | | Prof. C. Wagner. |
| Lemberg | 29.00 | 736.5 | 30.04 | 762.9 | 28.0 | — 2.2 | 83 | NE | | | 2 | | 9 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 29.71 | 754.6 | 29.82 | 757.4 | 57.6 | 14.2 | 86 | SSE | | | 2 | | 10 | | | 0.106 | 2.7 | | I.R. Hydrographic Office. |
| Szathmar | 29.37 | 745.9 | 29.84 | 757.8 | 47.8 | 8.8 | 55 | NW | | | 4 | | 2 | | | 0.059 | 1.5 | | Julius Csics, S. J. |
| Szegedin | | | | | | | | | | | | | | | | | | | Karl Stancel. |
| Trieste | 29.74 | 755.3 | 29.84 | 757.9 | 54.5 | 12.5 | 91 | Calm | | | 0 | | 10 | | | .0.346 | 8.8 | Raining | P. Busin. |
| Vienna | 29.16 | 740.7 | 29.89 | 759.2 | 45.3 | 7.4 | 53 | N | | | 2 | | 10 | | | | | Raining | I. R. Central Met. Obs'y. |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.53 | 750.0 | 29.73 | 755.2 | 47.1 | 8.4 | 74 | E | | | 1 | | 10 | | W | 0 | 0 | | Royal Observatory |
| Furnes | 29.72 | 754.8 | 29.74 | 755.4 | 44.2 | 6.8 | 82 | NW | | | 3 | | 10 | | | 0 | 0 | | M. E. de Cae. |
| Maeseyck | 29.63 | 752.5 | 29.75 | 755.7 | 49.1 | 9.5 | 79 | E | | | 2 | | 10 | | | 0 | 0 | Foggy | M. Pierrot |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:9, instead of 0:54, p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level Inches. | Barometer: Reduced to sea-level Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.87 | 758.7 | 29.98 | 761.5 | 38.8 | 3.8 | ..... | SE | 8 | 3 6 | ..... | ..... | 9 | ..... | ..... | 0.005 | 0.13 | Overcast... | W. Boswell. |
| Ardrossan | 29.92 | 760.0 | 29.94 | 760.5 | 45 | 7.2 | ..... | WNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.99 | 761.7 | 47.0 | 8.3 | ..... | WSW | 6 | 2.7 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds.... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.92 | 760.0 | 44.1 | 6.7 | ..... | WNW | 17 | 7.6 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.89 | 759.2 | 43.4 | 6.3 | ..... | ENE | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy ..... | Thomas Mackereth. |
| Bradford, Yorkshire | 29.50 | 749.3 | 29.89 | 759.2 | 42.7 | 5.9 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 30.00 | 762.0 | 30.03 | 762.8 | 78.0 | 25.6 | ..... | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.85 | 758.2 | 44.0 | 6.7 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. Todd. [C. |
| Cardington | ..... | ..... | 29.84 | 757.9 | 41.6 | 5.3 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E. | 29.70 | 754.4 | 29.83 | 757.7 | 41.6 | 5.3 | ..... | NE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Corpl. Daly, R. E. |
| Dartmoor | 28.33 | 719.6 | 29.79 | 756.7 | 51.0 | 10.6 | ..... | NE | ..... | ..... | 5 | ..... | 3 | ..... | ..... | ..... | ..... | Fine ..... | Alexander Watt. |
| Donaghadee | 29.93 | 760.2 | 29.97 | 761.2 | 47 | 8.3 | ..... | NNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | J. Mac Gowan. |
| Dover | 29.74 | 755.4 | 29.77 | 756.1 | 44 | 6.7 | ..... | NE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | Misty..... | J. Costello. |
| Falmouth, Observatory | 29.64 | 752.8 | 29.87 | 758.7 | 52.7 | 11.5 | ..... | NNW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Fort Napier, (Natal) | 27.76 | 705.1 | 30.08 | 764.0 | 74.0 | 23.3 | ..... | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.69 | 754.1 | 29.92 | 760.0 | 86 | 30.0 | ..... | W | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | 29.97 | 761.2 | 46 | 7.8 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.51 | 749.5 | 29.57 | 751.1 | 57.4 | 14.1 | ..... | W | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy ..... | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.72 | 754.9 | 29.92 | 760.0 | 44.9 | 7.2 | ..... | NW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. |
| Great Yarmouth | 29.84 | 757.9 | 29.85 | 758.2 | 38 | 3.3 | ..... | ENE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Misty..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.67 | 753.6 | 29.84 | 757.9 | 44.8 | 7.1 | ..... | NNE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff, for G. B. Airy. |
| Guernsey | 29.57 | 751.1 | 29.79 | 756.7 | 46.5 | 8.1 | ..... | NNE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | Dr. S. E. Hoskins, F.R.S. |
| Helston | 29.83 | 757.7 | 29.96 | 761.0 | 54 | 12.2 | ..... | N | ..... | ..... | 6 | ..... | 1c | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 29.90 | 759.4 | 29.94 | 760.5 | 44 | 6.7 | ..... | NNW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky.... | John Tilston. |
| Jersey | 29.49 | 749.0 | 29.78 | 756.4 | 45.3 | 7.4 | ..... | NE | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy..... | J. Fisher. |
| Kew, Observatory | 29.82 | 757.4 | 29.85 | 758.2 | 43.0 | 6.1 | ..... | N | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | The Meteorological Of. |
| Leicester, Museum | 29.62 | 752.3 | 29.88 | 758.9 | 41.1 | 5.1 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.77 | 756.1 | 29.85 | 758.2 | 62 | 16.7 | ..... | SE | ..... | ..... | 2 | ..... | 4k | ..... | ..... | ..... | ..... | D. clouds.... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.85 | 758.2 | 29.94 | 760.5 | 44 | 6.7 | ..... | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.24 | 768.1 | 78.5 | 23.1 | ..... | SE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 29.75 | 755.6 | 29.96 | 760.7 | 42.7 | 5.9 | ..... | NNE | ..... | ..... | 2 | ..... | 10k | NNE | ..... | 0 | 0 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.34 | 745.2 | 29.87 | 758.7 | 47.2 | 8.4 | ..... | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.86 | 758.4 | 42 | 5.6 | ..... | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. E. Bellamy. |
| Plymouth | 29.76 | 755.9 | 29.83 | 757.7 | 58.1 | 14.5 | ..... | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | John Merrifield. |
| Roche's Point | 29.97 | 761.2 | 30.02 | 762.5 | 50 | 10.0 | ..... | N | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded... | W. Kennedy. |
| Saint Ann's Head | 29.78 | 756.4 | 29.94 | 760.5 | 46 | 7.8 | ..... | NNE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Misty..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 29.96 | 761.0 | 40.2 | 4.6 | ..... | SSE | 18 | 8.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29 81 | 757.2 | 52.2 | 11.2 | ..... | SW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | W. H. Lyne. |
| Sheffield | 29.64 | 752.8 | 29.93 | 760.2 | 42.2 | 5.7 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.07 | 1.8 | Overcast..... | W. F. Cooper. |
| Silloth Rectory | 29.89 | 759.2 | 29.92 | 760.0 | 50.0 | 10.0 | 57 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.50 | 749.3 | 29.91 | 759.7 | 45.0 | 7.2 | ..... | NNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. S. J. Perry. |
| Stratfield Turgiss | 29.63 | 752 6 | 29.87 | 758.7 | 44.4 | 6.9 | ..... | NE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds.... | C.H. Griffith, F..I.S. |
| Thurso | 29.88 | 758.9 | 29.95 | 760.7 | 41 | 5.0 | ..... | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | John Trotter. |
| Truro, Royal Institution | 29.81 | 757.2 | 29.85 | 758.2 | 53 | 11.7 | ..... | N | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | W. Newcombe. |
| Valencia, Observatory | 30.03 | 762.8 | 30.05 | 763.3 | 47.7 | 8.7 | ..... | N | 11 | 4.9 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.16 | 765.8 | 30.19 | 766.8 | 70 | 21.1 | 48 | SE | 17 | 7.6 | ..... | 10 | 2 | ..... | ..... | 0 | 0 | Cloudy..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.21 | 767.3 | 63.5 | 7.5 | 88 | S | ..... | ..... | 2 | ..... | 10kn | ..... | ..... | 0 | 0 | Covered ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.98 | 761.5 | 39.2 | 4.0 | ..... | NE | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0.01 | 0.3 | Overcast..... | Andrew Gibb. |
| Mauritius, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Meldrum. |
| Melbourne, Observatory | 30.22 | 767.6 | 30.31 | 769.9 | 65.6 | 18.7 | 61 | Calm | 0 | 0 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 29.91 | 759.7 | 45 | 7.2 | ..... | N | ..... | ..... | 3 | 0 | 10 | ..... | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.02 | 762.5 | 39 | 3.9 | ..... | S | ..... | ..... | 4 | 5 | 7 | S | ..... | ..... | ..... | Raining ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Sea or swell: Height scale 0–9 | Sea or swell: Direction from— | Weather. | Observer |
|---|---|---|---|---|
| H. M. S. "Fawn," N. 39° 53′, E. 26° 10′ | ..... | ..... | D. clouds..... | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda, N. 34° 10′, E. 25° 30′ | ..... | ..... | Blue sky..... | Capt. B. Boyes. |
| Barque Belle Isle, N. 34° 45′, W. 63° 48′ | ..... | ..... | D. clouds..... | Capt. A. J. Brown. |
| Ship British Commodore, —— City of Agra, N. 27° 34′ W. 44° 09′ | ..... | ..... | Threatening | Capt. J. W. Thorne. Capt. Thos. Young. |
| Barque Commewyne, N. 40° 30′, W. 40° 05′ | ..... | ..... | Overcast..... | Capt. A. Buchan. |
| Barque Fedalina, N. 42° 05′, W. 15° 10′ | 4 | NNW | D. clouds..... | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | Showery..... | Capt. E. W. Turner. |
| S. S. Nizam, N. 7° 54′, E. 77° 28′ | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.28 | 667.5 | 30.00 | 762.0 | 66.6 | 19.2 | 88 | NE | ..... | ..... | 3 | 8ks | ..... | E | ..... | 0.055 | 0.14 | ..... | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.18 | 766.6 | 30.23 | 767.8 | 33.1 | 0.6 | 61 | SE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 30.08 | 763.9 | 30.10 | 764.4 | 32.9 | 0.5 | 92 | ESE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.02 | 737.0 | 29.06 | 738.1 | 19.8 | — 6.8 | 73 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Farõe) | 29.79 | 756.6 | 29.82 | 757.5 | 42.8 | 6.0 | 81 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Vestervig | 30.01 | 762.3 | 30.18 | 766.6 | 32.4 | 0.2 | 92 | E | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.17 | 740.9 | 29.72 | 754.9 | 56.3 | 14.6 | 80 | NE | ..... | ..... | 2 | ..... | 8 | NE | E | 0 | 0 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 29.07 | 753.6 | 29.78 | 756.4 | 55.8 | 13.2 | 93 | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bouvallet, Director. |
| Avignon, Normal School | 29.59 | 751.5 | 29.67 | 753.5 | 63.2 | 11.8 | 85 | ESE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Rainy | M. Giraud, Director. |
| Bar-sur-Seine | 29.13 | 739.8 | 29.67 | 753.5 | 63.3 | 17.4 | 29 | S | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.46 | 748.3 | 29.75 | 755.6 | 54.5 | 12.5 | 72 | ENE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 28.82 | 731.9 | 29.09 | 754.1 | 61.0 | 16.1 | 44 | NE | ..... | ..... | 2 | ..... | 2 | ..... | NW | 0 | 0 | Slightly cl'dy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.87 | 733.2 | 29.78 | 756.3 | 57.6 | 14.2 | 52 | W | ..... | ..... | 1 | ..... | 2kn | S | S | 0 | 0 | Slightly cl'dy | M. Marlot, Director. |
| Bourges, Normal School | 29.10 | 739.0 | 29.04 | 752.8 | 58.3 | 14.6 | 65 | SE | ..... | ..... | 2 | ..... | 5 | SE | SE | 0 | 0 | Cloudy | A. Waquet, Director. |
| Brest, Naval Observatory | 29.50 | 749.4 | 29.75 | 755.6 | 49.3 | 9.6 | 73 | NE | ..... | ..... | 4 | ..... | 8 | ..... | NE | 0 | 0 | Misty | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.20 | 741.8 | 29.61 | 752.2 | 52.5 | 11.4 | 67 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | September, Director. |
| Caen, Normal School ... ..... | 29.67 | 753.7 | 29.75 | 755.6 | 46.4 | 8 | 75 | NNE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | M. Lair, Director. |
| Chartres, Normal School... | 29.10 | 739.2 | 29.66 | 753.3 | 64.6 | 17.8 | 92 | E | ..... | ..... | 2 | ..... | 3 | ..... | SW | 0.016 | 0.4 | Cloudy | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.40 | 746.8 | 29.71 | 754.6 | 62.6 | 17.0 | 62 | SW | ..... | ..... | 2 | ..... | 8 | SE | SE | ..... | ..... | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.80 | 718.7 | 29.63 | 752.5 | 62.1 | 16.7 | 41 | SE | ..... | ..... | 2 | ..... | 10 | ..... | S | 0.008 | 0.2 | Raining | Alluard, Director. |
| Commercy, Normal School | 28.87 | 733.3 | 29.72 | 755.0 | 54.9 | 12.7 | 50 | SE | ..... | ..... | 3 | 2c | ..... | ..... | SE | 0 | 0 | Slightlycl'dy | Dr. Coulet, Director. |
| Commune de Grésque* | 28.56 | 725.5 | 29.71 | 754.5 | 48.7 | 9.3 | 81 | SE | ..... | ..... | 2 | ..... | 10 | ..... | SE | 0.138 | 3.5 | Raining | M. Kina, Director. |
| Grenoble, Normal School | 28.94 | 735.1 | 29.71 | 754.5 | 53.6 | 12 | 83 | SSE | ..... | ..... | 1 | ..... | 10m | ..... | ..... | 0 | 0 | Covered | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.39 | 746.5 | 29.61 | 752.0 | 56.7 | 13.6 | 65 | E | ..... | ..... | 1 | ..... | 8 | ..... | E | 0 | 0 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.38 | 746.3 | 29.69 | 754.0 | 58.1 | 14.5 | 84 | ESE | ..... | ..... | 3 | ..... | 8 | ..... | ESE | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 28.72 | 729.6 | 29.63 | 752.7 | 61.0 | 16.1 | 49 | NW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.189 | 4.80 | ..... | Baudry, Director. |
| Lorient, Naval Observatory | 29.61 | 752.2 | 29.71 | 754.7 | 51.8 | 11.0 | 82 | NNE | ..... | ..... | 5 | ..... | ..... | ..... | N | 0 | 0 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galsin, Director |
| Mirecourt, Normal School | 28.70 | 728.9 | 29.75 | 755.7 | 54.7 | 12.6 | 58 | SE | ..... | ..... | 1 | ..... | ck | ..... | NW | 0 | 0 | ..... | M. Barbier, Director. |
| Nismes, Normal School | 29.41 | 747.0 | 29.57 | 751.1 | 53.2 | 11.8 | 59 | NE | ..... | ..... | 1 | ..... | 8 | ..... | W | 0.31 | 8. | Very cloudy | Boyer, Director. |
| Privas, Normal School | 28.61 | 726.6 | 29.67 | 753.7 | 50.9 | 10.5 | 68 | S | ..... | ..... | 3 | ..... | 10 | S | S | 0 | 0 | Covered | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.81 | 630.2 | ..... | ..... | 36.1 | 2.3 | 89 | E | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0.036 | 0.9 | Almost cov'd | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.60 | 751.8 | 29.63 | 752.6 | 56.5 | 13.6 | 71 | SE | ..... | ..... | 1 | ..... | 10 | SE | SE | 0 | 0 | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.64 | 752.8 | 29.72 | 755.0 | 54.1 | 12.3 | 56 | N | ..... | ..... | 1 | ..... | 5 | ..... | SE | 0 | 0 | Cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.71 | 754.5 | 29.74 | 755.3 | 46.4 | 8.0 | 82 | NE | ..... | ..... | 6 | ..... | 10 | NE | NE | 0 | 0 | Misty | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.62 | 749.8 | 29.69 | 754.0 | 63.7 | 17.6 | 32 | NE | ..... | ..... | 0-1 | ..... | ..... | ..... | SE | 0 | 0 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.63 | 724.0 | 29.60 | 751.8 | 48.2 | 9 | 71 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.12 | 3. | Raining | T. Huguet, Director. |
| Versailles Observatory | 29.20 | 741.6 | 29.69 | 754.1 | 60.4 | 15.8 | 36 | ESE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0 | 0 | Lightly cov. | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.09 | 738.9 | 29.68 | 753.8 | 63.5 | 17.5 | 75 | S | ..... | ..... | 1 | ..... | 2 | ..... | S | 0.16 | 4. | Slightly cl'dy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.88 | 759.0 | 29.91 | 759.7 | 75.2 | 24 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.63 | 16. | ..... | L'Abbé Marel 6si. |
| Lyons Obs'y, (Park Station) | 29.08 | 738.5 | 29.69 | 754.0 | 56.1 | 13.4 | 49 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.075 | 1.9 | Dense fog | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 24.39 | 619.5 | 29.71 | 754.5 | 34.7 | 1.5 | 84 | SE | 28.0 | 12.5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.71 | 754.7 | 55.0 | 12.8 | 88 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.551 | 14.0 | Light rain | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.41 | 747.0 | ..... | ..... | 61.8 | 18.2 | 36 | SE | ..... | ..... | 2 | ..... | 7 | ..... | E | 0 | 0 | ..... | Marié Davy, Director. |
| Perpignan | 29.50 | 749.3 | 29.61 | 752.0 | 64.0 | 12.2 | 76 | SE | 11 2 | 5.0 | ..... | ..... | 4 | ..... | ESE | 0.004 | 0.1 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.22 | 560.4 | ..... | ..... | 30.4 | — 0.9 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.744 | 18.9 | Snowing | Gen'l de Nansouty. |
| Toulouse, Observatory | 28.91 | 734.3 | 29.62 | 752.4 | 54.3 | 12.4 | 80 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.059 | 1.5 | ..... | M. Mercadier Juller. |
| Tours | 29.47 | 748.4 | 29.66 | 753.4 | 57.6 | 14.2 | 60 | ESE | ..... | ..... | 1 | ..... | 4 | ..... | E | 0 | 0 | ..... | Cousin-Marqueto. |
| Zi-Ka-Wei, (near Shanghai) | 30.51 | 767.2 | 30.23 | 767.8 | 47.1 | 8.4 | 81 | S | 6.0 | 2.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greusque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grêusque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft., Pic du Midi. (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.98 | 736.2 | 29.82 | 757.5 | 46.4 | 8.0 | 76 | E | | | 6 | | 6 | E | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.94 | 760.4 | 30.12 | 765.0 | 35.6 | 2.0 | 56 | SE | | | 5 | | 6 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.58 | 751.4 | 30.11 | 764.9 | 34.5 | 1.4 | 41 | ESE | | | 3 | | 3 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.32 | 744.8 | 29.74 | 755.5 | 54.5 | 12.5 | 62 | E | | | 1 | | 9 | NW | | 0 | 0 | | Albert Sens. |
| Cassel | 29.27 | 743.4 | 29.87 | 758.8 | 38.1 | 3.4 | 69 | ESE | | | 2 | | 7 | E | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.59 | 751.6 | 29.75 | 755.7 | 50.0 | 10.0 | 72 | SE | | | 2 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.45 | 748.0 | 29.82 | 757.4 | 48.9 | 9.4 | | SE | | | 1 | | 10 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.30 | 718.7 | 29.72 | 754.8 | 54.0 | 12.2 | 75 | S | | | 2 | | 1 | S | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 30.00 | 762.1 | 30.08 | 764.0 | 33.4 | 0.8 | 89 | ESE | | | 6 | | 10cs | | | 0 | 0 | Squally | Captain F. Hegemann |
| Kiel | 30.18 | 766.6 | 30.20 | 767.1 | 33.2 | 1.2 | 74 | E | | | 4 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.20 | 767.1 | 30.29 | 769.4 | 25.9 | — 3.4 | 63 | NE | | | 3 | | 0 | | | 0.004 | 0.1 | Sleeting | Prof. E. Luther. |
| Köslin | | | 30.20 | 767.0 | 34.7 | 1.5 | | E | | | 4 | | 0 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.57 | 751.0 | 30.00 | 762.1 | 36.7 | 2.6 | 57 | ENE | | | 6 | | 9 | | | 0 | 0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 30.22 | 767.5 | 30.26 | 768.7 | 27.3 | — 2.6 | 54 | NE | | | 2 | | 0 | | | | | | Skalweit. |
| Neufahrwasser | 30.30 | 769.5 | 30.31 | 769.9 | 29.3 | — 1.5 | 54 | NE | | | 3 | | 0 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.89 | 759.3 | 30.20 | 767.1 | 31.8 | — 0.1 | 73 | E | | | 3 | | 4 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.21 | 741.9 | 29.75 | 755.7 | 55.4 | 13.0 | 62 | Calm | | | 0 | | 3 | | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 28.81 | 731.8 | 29.74 | 755.5 | 55.1 | 11.7 | 62 | N | | | 1 | | 4 | N | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | | | | | | | | | | | | | | | | | | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.29 | 718.6 | 29.82 | 757.3 | 44.8 | 7.1 | 75 | NE | 4 | 2 | | | 10 | | SE | 0 | 0 | Foggy | Dr. Van Bebber. |
| Wustrow, Naval School | 30.15 | 765.7 | 30.17 | 766.3 | 33.3 | 0.7 | 87 | ESE | | | 4 | | 10s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.50 | 749.4 | 29.89 | 759.3 | 64.4 | 18.0 | | SW | | | 1.5 | | | | | | | Clear. | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.85 | 758.2 | 29.90 | 759.5 | 81.3 | 27.4 | 27 | WNW | 8 | 3.6 | | | 1 | | | 0 | 0 | D. clouds | |
| Deesa | | | | | | | | NNW | 10.1 | 4.5 | | | | | | 0 | 0 | | |
| Bombay | 29.78 | 756.4 | 29.82 | 757.3 | 80.6 | 27.0 | 80 | WNW | 10 | 4.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.17 | 740.8 | 29.92 | 759.8 | 76.9 | 24.9 | 25 | NW | 2.7 | 1.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.29 | 693.2 | 29.79 | 756.6 | 82.1 | 27.8 | 64 | W | 13.0 | 5.8 | | | 2 | | | 0 | 0 | | |
| Roorkee | 29.96 | 735.6 | 29.86 | 758.5 | 76.8 | 24.9 | 28 | NW | 3.7 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Agra | 29.36 | 745.6 | 29.92 | 760.0 | 83.2 | 28.4 | 20 | W | | | | | | | | 0 | 0 | | |
| Nagpur | 28.80 | 731.6 | 29.83 | 757.8 | 88.0 | 31.1 | 19 | Calm | 2.8 | 1.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.49 | 748.9 | 29.86 | 758.4 | 85.7 | 29.8 | 20 | NNW | 5.3 | 2.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.58 | 751.3 | 29.89 | 759.2 | 80.9 | 27.2 | 29 | NW | 3.8 | 1.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.67 | 753.6 | 29.85 | 758.2 | 80.3 | 26.8 | 29 | W | 2.4 | 1.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.86 | 707.8 | 29.87 | 758.6 | 80.8 | 27.1 | 16 | NW | 9.6 | 4.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.81 | 757.1 | 29.89 | 759.2 | 81.4 | 27.4 | 65 | E | 3.0 | 1.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.86 | 758.5 | 29.88 | 759.0 | 79.7 | 26.5 | 81 | W | 3.0 | 1.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.47 | 748.4 | 29.86 | 758.3 | 78.4 | 25.8 | 16 | Calm | 2.1 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.79 | 756.6 | 29.88 | 758.9 | 80.4 | 26.9 | 67 | W | 3.8 | 1.7 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.57 | 751.2 | 29.93 | 759.9 | 68.8 | 20.2 | 64 | ENE | 3.9 | 1.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.54 | 724.8 | 29.90 | 759.4 | 83.2 | 28.4 | 10 | Calm | 3.1 | 1.4 | | | 0 | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,861 ft., or 411.5 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.42 | 747.3 | 29.84 | 757.8 | 54.9 | 12.7 | 84 | SW | 2.5 | 1.1 | ..... | ..... | 10 | ..... | ..... | 0.008 | 0.2 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.26 | 743.1 | 29.78 | 756.3 | 56.3 | 13.5 | 78 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.114 | 28.3 | ..... | Prof. Schiaparelli. |
| Padua | 29.71 | 754.5 | 29.82 | 757.3 | 55.8 | 13.2 | 84 | E | 3.8 | 1.7 | ..... | ..... | 10 | S | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.55 | 732.9 | 29.76 | 755.9 | 48.6 | 9.2 | 81 | W | 0 | 0 | ..... | ..... | 10 | NE | ..... | 0.197 | 5.0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.56 | 750.9 | 29.76 | 755.8 | 54.0 | 12.2 | 93 | Calm | 0 | 0 | ..... | ..... | 10 | SE | ..... | 0.260 | 6.6 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.87 | 707.9 | 29.78 | 756.3 | 45.8 | 7.4 | 91 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.205 | 5.2 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.74 | 755.4 | 29.79 | 756.6 | 57.6 | 14.2 | 78 | NE | 8.7 | 3.9 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.51 | 749.5 | 29.76 | 756.0 | 63.5 | 17.5 | 56 | NE | ..... | ..... | 2 | ..... | 10 | SW | ..... | 0.091 | 2.3 | ..... | Cav. F. Meucci. |
| Leghorn | 29.67 | 753.6 | 29.76 | 755.8 | 61.0 | 16.1 | 74 | SW | ..... | ..... | 4 | ..... | 5 | S | ..... | 0.067 | 1.7 | ..... | Prof. P. Monte. |
| Rome | 29.62 | 752.3 | 29.79 | 756.7 | 64.9 | 18.3 | 52 | S | 14.3 | 6.4 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.65 | 753.1 | 29.90 | 759.5 | 62.6 | 17.0 | 61 | W | 3.8 | 1.7 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.98 | 736.1 | 29.86 | 758.4 | 64.8 | 18.2 | 75 | SE | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.45 | 748.1 | 29.65 | 753.0 | 66.3 | 18.5 | 61 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.54 | 750.3 | 29.79 | 756.7 | 75.4 | 24.1 | 21 | SW | 22.4 | 10.0 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.84 | 757.9 | 29.91 | 759.7 | 63.0 | 17.2 | 78 | S | 4.9 | 2.2 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.30 | 744.1 | 29.85 | 758.2 | 64.0 | 17.8 | 52 | S | 0.7 | 0.3 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 29.96 | 761.0 | 29.98 | 761.5 | 37.0 | 2.8 | 73 | W | 3.5 | 1.6 | ..... | ..... | 3s | ..... | ..... | 0 | 0 | Fair | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.87 | 758.7 | 30.08 | 764.0 | 45.3 | 7.4 | 57 | WSW | 10.2 | 4.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear. | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.69 | 751.6 | 29.66 | 753.3 | 42.4 | 5.8 | 52 | N | 14.6 | 6.5 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m. local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | 25.15 | 638.8 | 30.26 | 768.7 | 43.2 | 6.2 | 89 | SW | ..... | ..... | 1 | 5 | ..... | SW | ..... | 0 | 0 | ..... | P. Ceballos. |
| Guadalajara | 24.50 | 622.5 | 30.22 | 767.8 | 55.4 | 13.0 | 63 | NW | ..... | ..... | 1 | 3c | 0 | SW | ..... | 0 | 0 | ⅛ clouded | Prof. L. Perez. |
| Leon | 23.12 | 587.2 | 30.24 | 768.0 | 48.2 | 9.0 | 45 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | Prof. M. Leal. |
| Mexico, Central Obs'y | ..... | ..... | ..... | ..... | 52.7 | 11.5 | 45 | SW | ..... | ..... | 1 | 7ck;s | 0 | SW | ..... | 0 | 0 | Light fog | The Staff. |
| Pabellon, (Aguascalientes) | 29.88 | 759.1 | 29.90 | 759.4 | 73.9 | 23.3 | 67 | SSE | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy | M. V. de Leon, M. E. |
| Tlacotalpam | 24.25 | 615.8 | 30.19 | 766.7 | 59.0 | 15.0 | 41 | WSW | ..... | ..... | 1 | 7 | 0 | W | ..... | 0 | 0 | Foggy | M. M. Chazaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Misty | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.48 | 596.3 | 30.23 | 768.1 | 46.6 | 7.8 | 27 | NE | 1.3 | 0.6 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.45 | 722.6 | 30.12 | 765.0 | 72.7 | 22.6 | 54 | NE | ..... | ..... | 1 | 0 | 7 | ..... | W | 0 | 0 | Misty | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,893 m., or 6,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,201m., or 7,220.9 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.78 | 756.3 | 29.78 | 756.3 | 45.7 | 7.6 | ..... | ENE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.86 | 758.5 | 29.92 | 759.9 | ..... | ..... | ..... | E | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.85 | 758.1 | 29.85 | 758.1 | 37.9 | 3.3 | ..... | ENE | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.78 | 756.4 | 29.78 | 756.4 | 43.3 | 6.3 | 76 | ENE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.76 | 756.0 | 29.81 | 757.2 | 42.6 | 5.9 | 70 | E | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.14 | 765.6 | 30.20 | 767.0 | 37.8 | 3.2 | 47 | S | 8.5 | 3.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 30.13 | 765.3 | 30.17 | 766.3 | 32.0 | 0.0 | 52 | SW | 9 | 4 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 30.13 | 765.2 | 30.26 | 769.1 | 33 8 | 1.0 | 48 | SW | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.12 | 765.0 | 30.16 | 766.1 | 27.0 | — 2.8 | 68 | SW | 25 | 11 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.15 | 765.8 | 30.34 | 770.7 | 58.6 | 14.8 | 60 | N | 8.7 | 3.9 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.61 | 726.7 | 29.65 | 753.2 | 51.4 | 10.8 | 68 | NE | 9.8 | 4.4 | ..... | ..... | 8 | NE | ..... | 0.295 | 7.5 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 29.91 | 759.8 | 30.00 | 762.0 | 59.4 | 15.2 | 67 | WNW | 2.5 | 1.1 | ..... | ..... | 10 | ..... | ..... | 0.016 | 0.4 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.30 | 744.1 | 29.66 | 753.4 | 54.1 | 12.3 | 64 | ENE | 13.7 | 6.1 | ..... | ..... | 2 | ..... | ..... | 0.024 | 0.6 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.25 | 768.4 | 30.32 | 770.2 | 59.7 | 15.4 | 76 | NNE | 22.4 | 10.0 | ..... | ..... | 8 | ..... | ..... | 0.012 | 0.3 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | ..... | ..... | 29.94 | 760.4 | 83.8 | 28.8 | ..... | WSW | ..... | ..... | 4 | ..... | 4 | ..... | WSW | 4 | WSW | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto de S. Jose de Bissao, Senegambia | ..... | ..... | 29.97 | 761.3 | 79.7 | 26.5 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | ..... | Blue sky | A. Ferreira, 2d Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | 29.74 | 755.5 | 87.8 | 31.0 | ..... | WNW | ..... | ..... | 3 | ..... | 5 | ..... | WNW | ..... | ..... | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 29.87 | 758.7 | 68.0 | 20.0 | ..... | ESE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 1 | ..... | D. clouds | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.73 | 755.2 | 30.18 | 766.5 | 29.5 | — 1.4 | 62 | ENE | 9 | 4 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.76 | 755.8 | 30.21 | 767.2 | 22.6 | — 5.2 | 63 | NNW | 11 | 5 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.95 | 760.6 | 30.21 | 767.2 | 21.4 | — 5.9 | 77 | NW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.05 | 763.2 | 30.06 | 763.6 | 20.1 | — 6.6 | 81 | WNW | 11 | 5 | ..... | ..... | 3ck | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.16 | 740.6 | 29.82 | 757.4 | 30.7 | — 0.7 | 68 | NW | 18 | 8 | ..... | ..... | 10k;ks;n | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.71 | 754.7 | 29.78 | 756.5 | 41.9 | 5.5 | 88 | NNW | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.79 | 756.7 | 29.81 | 757.2 | 47.3 | 8.5 | 67 | NW | 7 | 3 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.30 | 744.3 | 29.89 | 759.2 | 20.3 | — 6.5 | 63 | N | 9 | 4 | ..... | ..... | 2ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.46 | 748.3 | 29.67 | 753.6 | 43.7 | 6.5 | 53 | SW | 4 | 2 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.87 | 758.6 | 29.89 | 759.1 | 9.7 | —12.4 | 73 | NNW | 13 | 6 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Capt. Ssoliwerstow. |
| Tiflis | 28.42 | 721.8 | 29.82 | 757.3 | 58.5 | 14.7 | 37 | S | 4 | 2 | ..... | ..... | 5s | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.04 | 763.1 | 29.96 | 761.0 | 43.2 | 6.2 | 31 | ESE | 9 | 4 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.61 | 749.5 | 30.01 | 762.3 | 23.9 | — 4.5 | 82 | S | 16 | 7 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.64 | 752.9 | 29.93 | 760.1 | 24.6 | — 4.1 | 58 | S | 9 | 4 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Ekaterinburg | 28.94 | 735.1 | 29.97 | 761.1 | 19.9 | — 6.7 | 64 | WSW | 45 | 20 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.71 | 754.6 | 29.94 | 760.4 | 66.4 | 19.1 | 16 | ENE | 13 | 6 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.45 | 722.6 | 30.11 | 764.9 | 67.3 | 19.6 | 22 | NW | 22 | 10 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.75 | 755.7 | 30.28 | 769.1 | 27.5 | — 2.5 | 92 | WSW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.95 | 760.8 | 30.26 | 768.5 | 29.8 | — 1.2 | 47 | E | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 29.91 | 759.6 | 30.05 | 763.2 | 34.7 | 1.5 | 87 | SE | 16 | 7 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.69 | 754.2 | 29.79 | 756.7 | 27.1 | — 2.7 | 72 | N | 45 | 20 | ..... | ..... | 10m | ..... | ..... | Blank | Blank | ..... | |
| Nikolaievsk, on the Amoor | 30.06 | 763.5 | 30.15 | 765.7 | 9.0 | —12.8 | 80 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455 m., or 1,492.7 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165.2 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.48 | 748.9 | 29.59 | 751.6 | 57.2 | 14 | 72 | SSE | 4.2 | 1.86 | ..... | ..... | 6ks | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 29.58 | 751.2 | 29.63 | 752.6 | 61.5 | 16.4 | 74 | N | 4.8 | 2.14 | ..... | 1 | 8 | NW | ..... | 0 | 0 | Cloudy | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.64 | 676.7 | ..... | ..... | 45.5 | 7.5 | 78 | N | 6.2 | 2.79 | ..... | 0 | 7 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Osservatory | 27.37 | 695.2 | ..... | ..... | 49.6 | 9.8 | 68 | E | 2.6 | 1.17 | ..... | 0 | 8 | ..... | ..... | 0.165 | 4.2 | Almost cov'd | The Staff. |
| Murcia, Met. Obs'y | 29.45 | 748.1 | 29.61 | 752.0 | 58.6 | 14.8 | 82 | NW | 4.8 | 2.14 | ..... | 5 | 5 | WSW | ..... | 0.039 | 1.00 | Raining | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.76 | 730.5 | 29.66 | 753.3 | 57.7 | 14.3 | 60 | NE | 8.1 | 3.6 | ..... | 0 | 8 | ..... | ..... | 0.614 | 15.6 | Cloudy | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.12 | 765.0 | 30.19 | 766.7 | 70.1 | 21.2 | 86 | ESE | 2.9 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.87 | 758 8 | 29.92 | 760.1 | 83.3 | 28.5 | 71 | SE? | 0 | 0 | ..... | ..... | 2c | ..... | E | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.49 | 748.9 | 29.58 | 751.4 | 56.3 | 13.6 | 79 | NW | 11.7 | 5.3 | ..... | 0 | 8 | ..... | N | 0.720 | 18.3 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I | 30.06 | 763.6 | 30.15 | 765.9 | 77.4 | 25.2 | 71 | E | 7.0 | 3.13 | ..... | 2c | 3k | E | E | 0 | 0 | Clear | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.23 | 767.8 | 30.27 | 768.8 | 19.5 | — 6.8 | ..... | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.23 | 767.7 | 30.28 | 769.0 | 25.9 | — 3.4 | 60 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.25 | 768.4 | 30.30 | 769.7 | 31.6 | — 0.2 | 74 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 30.11 | 764.8 | 30.29 | 769.3 | 32.0 | 0.0 | 38 | NNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 30.20 | 767.0 | 30.26 | 768.5 | 28.4 | — 2.0 | 80 | N | ..... | ..... | 6 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.18 | 766.5 | 30.25 | 768.4 | 33.1 | 0.6 | 47 | N | 5.4 | 2.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.25 | 717.5 | 29.68 | 753.9 | 51.6 | 10.9 | 70 | N | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | Covered | The Observatory. |
| Zurich | 28.06 | 712.7 | 29.69 | 754.1 | 56.1 | 13.4 | 54 | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | Fair | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —7.0 mm.; Thermometer, +2.5 Cent.; Relative Humidity, +10 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.85 | 758.2 | 55.0 | 12.8 | 66 | SE | 7 | 3.0 | ..... | ..... | 7 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 29.92 | 760.0 | 68.0 | 20.0 | ..... | SE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | |
| Valona | ..... | ..... | 29.96 | 760.9 | 60 4 | 15.8 | ..... | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.67 | 753.6 | 29.79 | 756.7 | 62.1 | 16.7 | 62 | SW | ..... | ..... | 1 | ..... | 10n | ..... | SW | 0.5 | 0.02 | Overcast | Prof. C.V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.08 | *764.0 | 30.15 | 765.8 | 12.3 | —10.9 | ..... | Calm | 0 | 0 | ..... | 2k | 0 | ..... | ..... | 0 | 0 | Fine | Hon. J. Ferguson. |
| Brockville, Ontario | 29.68 | 753.9 | 30.10 | 762.0 | 23 | — 5.0 | ..... | Calm | 0 | 0 | ..... | ..... | 10n | ..... | SW | ..... | ..... | Light snow | W. R. Bigg. |
| *Chatham, N B | 30.12 | 765.0 | 30.19 | 766.8 | 5 | —15.0 | 92 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 30.19 | 766.8 | 30.23 | 767.8 | 25 | — 3.9 | 81 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.72 | 754.9 | 29.92 | 760.0 | 20.9 | — 6.2 | 96 | W | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.10 | 2.5 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | 29.88 | 758.9 | 29.93 | 760.2 | 40.1 | 9.5 | 100 | NE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. Bevis. |
| *Father Point, Quebec | 30.03 | 762.8 | 30.06 | 763.5 | 17 | — 8.3 | 83 | S | 10 | 4.5 | ..... | 5ck | 2s | W | W | 0 | 0 | Fair | J. McWilliams. |
| Fredericton, N. B | 30.10 | 766.1 | 30.23 | 767.8 | — 2.9 | —19.4 | 100 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.32 | 744.7 | 30.28 | 769.1 | —15 | —26.1 | 100 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Stewart. |
| Granton, Ontario | 28.86 | 733.0 | 30.03 | 762.8 | 22 | — 5.6 | ..... | Calm | ..... | ..... | 0 | 1c | 0 | ..... | ..... | Inap. | Inap. | Clear | James Grant. |
| *Halifax, N. S | 30.11 | 764.8 | 30.25 | 768.3 | 27 | — 2.8 | 84 | Calm | 0 | 0 | ..... | 2cs | 0 | W | ..... | 0 | 0 | Fair | F. Allison, M. A. |
| Hamilton, Ontario | 29.74 | 755.4 | 30.13 | 765.3 | 27.7 | — 2.4 | 87 | SW | ..... | ..... | 1 | 10cs | 0 | SW | ..... | 0.02 | 0.5 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.61 | 752.1 | 29.96 | 761.0 | 21 | — 6.1 | 91 | NW | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Light snow | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.25 | 768.3 | 30.29 | 769.4 | 31.6 | — 0.2 | 89 | W | 4 | 1.8 | ..... | 1k | 0 | W | ..... | 0 | 0 | Fine | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 29.77 | 756.1 | 29.99 | 761.7 | 19 | — 7.2 | 85 | ..... | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Light snow | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.83 | 745 0 | 30.12 | 765.0 | — 5 | —20.6 | 63 | NE | 6 | 2.7 | ..... | 2cs | 0 | NW | ..... | 0.01 | 0.3 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 29.23 | 742.4 | 30.00 | 762.0 | 23.3 | — 4.8 | 59 | Calm | ..... | ..... | ..... | 0 | 1ks | ..... | ..... | 0 | 0 | Fine | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.28 | 743.7 | 30.01 | 762.2 | 28 | — 2.2 | 88 | N | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | 0.02 | 0.5 | Light snow | H. Morgan. |
| Port Hastings, N. S | 30.22 | 767.6 | 30.27 | 768.8 | 27.7 | — 2.4 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0.10 | 2.5 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.35 | 745.5 | 30.03 | 762.8 | 29 | — 1.7 | 98 | N | 2 | 0.9 | ..... | ..... | 10n | ..... | NE | 0.12 | 3.0 | Cloudy | M. Payne. |
| *Quebec, Quebec | 29.72 | 754.9 | 30.07 | 763.8 | 11 | —11.7 | 80 | NE | ..... | ..... | 1 | ..... | 10n | ..... | NE | ..... | ..... | Cloudy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.47 | 748.5 | 29.99 | 761.7 | — 6 | —21.1 | 81 | W | 3 | 1.3 | ..... | 5c | 0 | W | ..... | 0 | 0 | Cloudy | W. H. McIntyre. |
| St. Andrews, N. B | 30.11 | 764.8 | 30.16 | 766.1 | 27 | — 2.8 | 81 | E | ..... | ..... | 1 | 0 | 2ks | ..... | ..... | 0 | 0 | Fair | Dr. Gove. |
| St. John, N. B | 30.04 | 763.0 | 30.21 | 767.3 | 22 | — 5.6 | 86 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.30 | 744.2 | 30.08 | 764.0 | 10 | —12.2 | 73 | E | 4 | 1.8 | ..... | 8cs | 0 | ..... | ..... | 0.11 | 2.8 | Clear | K. Stewart. |
| Stayner, Ontario | 29.20 | 741.7 | 30.04 | 763.0 | 15 | — 9.4 | 93 | N | 1 | 0.4 | ..... | 5cs | 0 | ..... | ..... | 0 | 0 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.68 | 728.5 | 30.05 | 763.3 | 19.2 | — 7.1 | 95 | Calm | 0 | 0 | ..... | 2cs | 3s | W | ..... | 0 | 0 | Fair | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.27 | 768.8 | 30.31 | 769.9 | 30 | — 1.1 | 68 | SW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Fair | T. C. Hill. |
| *Toronto, Ontario | 29.61 | 752.1 | 30.02 | 762.5 | 25 | — 3.9 | 86 | N | 7 | 3.1 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Clear | Magnetic Observatory. |
| Windsor, N. S | 30.15 | 765.8 | 30.24 | 768.1 | 25.0 | — 3.9 | 87 | ..... | ..... | ..... | ..... | 1cs | 0 | ..... | W | 0.04 | 1.0 | Cloudy | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 27.0 | — 2.8 | 100 | W | ..... | ..... | ..... | 5k | 5s | ..... | ..... | 0.01 | 0.3 | Fair | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrumental error and temperature. Inches. | BAROMETER. Corrected for instrumental error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.75 | 755.6 | 29.98 | 761.5 | 29 | — 1.7 | 89 | N | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | 0.07 | 1.8 | Light snow.. | |
| Alpena, Michigan | 29.36 | 745.7 | 30.06 | 763.5 | 8 | —13.3 | 78 | W | 2 | 0.9 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair..... | |
| Atlanta, Georgia | 28 87 | 733.3 | 30.00 | 762.0 | 59 | 15.0 | 81 | SW | 12 | 5.4 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy ..... | |
| Atlantic City, New Jersey | 29.91 | 759.7 | 29.93 | 760.2 | 43 | 6.1 | 75 | SW | 6 | 2.7 | ..... | 0 | 5s | ..... | W | 0.20 | 5.1 | Fair ..... | |
| Augusta, Georgia | 29.94 | 760.5 | 30.12 | 765.0 | 61 | 16.1 | 77 | SW | 3 | 1.3 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy..... | |
| Baltimore, Maryland | 29.88 | 758.9 | 29.94 | 760.5 | 44 | 6.7 | 84 | N | 3 | 1.3 | ..... | 5k | Sm'e | W | Calm | 0.02 | 0.5 | Fair ..... | |
| Barnegat, New Jersey | 29.88 | 758.9 | 29.90 | 759.4 | 42 | 5.6 | 91 | SW | 10 | 4.5 | ..... | 10k;cs | 0 | Calm | ..... | 0.20 | 5.1 | Cloudy..... | |
| Bismarck, Dakota | 28.18 | 715.8 | 30.04 | 763.0 | — 3 | —19.4 | 100 | E | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Boerne, Texas | 28.44 | 722.4 | 29.71 | 754.6 | 65 | 18.3 | 100 | S | 7 | 3.1 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy ..... | |
| Boise City, Idaho | 27.15 | 689.6 | 30.11 | 764.8 | 36 | 2.2 | 71 | SE | 3 | 1.3 | ..... | ..... | 10s | ..... | W | 0.12 | 3.0 | Cloudy..... | |
| Boston, Massachusetts | 29.90 | 759.4 | 30.06 | 763.5 | 32 | 0.0 | 100 | SE | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.03 | 0.8 | Light snow.. | |
| Brackettville, Texas | 28.74 | 730.0 | 29.74 | 755.4 | 67 | 19.4 | 84 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Breckenridge, Minnesota | 29.09 | 738.9 | 30.28 | 769.1 | 1 | —17.2 | 100 | N | 2 | 0.9 | ..... | 3ck;cs | 0 | NW;Calm | ..... | 0 | 0 | Fair..... | |
| Brownsville, Texas | 29.85 | 758.2 | 29.90 | 759 4 | 70 | 21.1 | 93 | S | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy ..... | |
| Buffalo, New York | 29.24 | 742.7 | 29.98 | 761.0 | 29 | — 1.7 | 94 | N | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.3 | Light snow. | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 53 | 11.7 | 19 | W | ..... | ..... | 1 | 2c | 0 | Calm | ..... | 0 | 0 | Clear..... | |
| Burlington, Vermont | 29.69 | 754.1 | 29.99 | 761.7 | 28 | — 2.2 | 77 | S | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light snow. | |
| Cairo, Illinois | 29.71 | 754.6 | 30.11 | 764.8 | 39 | 3.9 | 82 | N | 11 | 4.9 | ..... | ..... | 10s | ..... | N | Inap. | Inap. | Cloudy..... | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.15 | 638.8 | 29.95 | 760.7 | 51 | 10.2 | 46 | E | 2 | 0.9 | ..... | 5k | 0 | NE | ..... | 0 | 0 | Fair..... | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 43 | 6.1 | 43 | S | ..... | ..... | 1 | 0 | Haze | ..... | Calm | 0 | 0 | Clear..... | |
| Campo, California | 27.51 | 698.7 | 30.08 | 764.0 | 45 | 7.2 | 100 | SW | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy ..... | |
| Cape Hatteras, N. Carolina | 30.07 | 763.8 | 30.07 | 763.8 | 60 | 15.6 | 88 | SW | 25 | 11.2 | ..... | 0 | 5s | ..... | SW | 0.02 | 0.5 | Fair ..... | |
| Cape Henry, Virginia | 29.96 | 761.0 | 29.98 | 761.5 | 58 | 14.4 | 94 | S | 7 | 3.1 | ..... | ..... | 10n | ..... | W | 0.79 | 20.1 | Heavy rain.. | |
| Cape Lookout, N. Carolina | 30.09 | 764.3 | 30.11 | 764.8 | 61 | 16.1 | 88 | SW | 20 | 8.9 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Threatening | |
| Cape May, New Jersey | 29.86 | 758.4 | 29.89 | 759.2 | 47 | 8.3 | 92 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | S | 0.02 | 0.5 | Cloudy..... | |
| Castroville, Texas | 29.11 | 739.4 | 29.79 | 756.7 | 68 | 20.0 | 95 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy..... | |
| Charleston, South Carolina | 30.08 | 764.0 | 30.14 | 765.5 | 63 | 17.2 | 89 | SW | 7 | 3.1 | ..... | 0 | 2ks | ..... | SW | 0 | 0 | Clear..... | |
| Cheyenne, Wyoming | 23.80 | 604.5 | 29.74 | 755.4 | 30 | — 1.1 | 57 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | NW | 0.02 | 0.5 | Threatening | |
| Chicago, Illinois | 29.35 | 745.5 | 30.07 | 763.8 | 32 | 0.0 | 89 | N | 2 | 0.9 | ..... | 5ck | Fog | W | ..... | 0.30 | 7.6 | Fair..... | |
| Cincinnati, Ohio | 29.36 | 745.7 | 30.02 | 762.5 | 39 | 3.9 | 82 | NW | 6 | 2.7 | ..... | ..... | 10ks;fg | ..... | NW;Calm | 0.15 | 3.8 | Cloudy..... | |
| Cleveland, Ohio | 29.25 | 742.9 | 30.00 | 762.0 | 30 | — 1.1 | 89 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.64 | 16.3 | Cloudy..... | |
| Coleman City, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Columbus, Ohio | 29.13 | 739.9 | 29.99 | 761.7 | 37 | 2.8 | 81 | NW | 6 | 2.7 | ..... | ..... | Fog | ..... | ..... | 0.08 | 2.0 | Foggy..... | |
| Concho, Texas | 27.96 | 710.2 | 29.62 | 752.3 | 52 | 11.1 | 66 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Corsicana, Texas | 29.40 | 746.7 | 29.86 | 758.4 | 68 | 20.0 | 79 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy..... | |
| Davenport, Iowa | 29.44 | 747.8 | 30.11 | 764.8 | 24 | — 4.4 | 74 | E | 7 | 3.1 | ..... | 8cs | 0 | W | ..... | 0.25 | 6.3 | Fair..... | |
| Deadwood, Dakota | 25.04 | 636.0 | ..... | ..... | 16 | — 8.9 | 83 | NE | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy..... | |
| Decatur, Texas | 28.64 | 727.4 | 29.80 | 756.9 | 50 | 10.0 | 65 | SE | 8 | 3.6 | ..... | 0 | 5s | ..... | SE | 0 | 0 | Fair ..... | |
| Denison, Texas | 29.06 | 738.1 | 29.85 | 758.2 | 48 | 8.9 | 63 | NE | 3 | 1.3 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy..... | |
| Denver, Colorado | 24.57 | 624.1 | 29.79 | 756.7 | 36 | 2.2 | 90 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Cloudy..... | |
| Des Moines, Iowa | 29.18 | 741.2 | 30.11 | 764.8 | 25 | — 3.9 | 75 | NE | 2 | 0.9 | ..... | 0 | Sm'e | ..... | Calm | 0.04 | 1.0 | Clear ..... | |
| Detroit, Michigan | 29.32 | 744.7 | 30.02 | 762.5 | 28 | — 2.2 | 88 | N | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.13 | 3.3 | Cloudy..... | |
| Dodge City, Kansas | 27.24 | 691.9 | 29.58 | 751.3 | 32 | 0.0 | 79 | SE | 12 | 5.4 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair..... | |
| Dubuque, Iowa | 29.38 | 746.2 | 30.11 | 764.8 | 27 | — 2.8 | 76 | NE | 1 | 0.4 | ..... | 1c | Fog | NW | Calm | 0.06 | 1.5 | Foggy ..... | |
| Duluth, Minnesota | 29.45 | 748.0 | 30.20 | 767.1 | 8 | —13.3 | 78 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Eagle Pass, Texas | 29.08 | 738.6 | 29.81 | 757.2 | 58 | 14.4 | 88 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Eastport, Maine | 30.09 | 764.3 | 30.16 | 766.1 | 32 | 0.0 | 79 | SE | 11 | 4.9 | ..... | 5k | 0 | S | ..... | 0 | 0 | Fair..... | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| El Paso, Texas | 26.18 | 665.0 | ..... | ..... | 52 | 11.1 | 11 | NW | 7 | 3.1 | ..... | 2cs | 0 | NW | ..... | 0 | 0 | Fair ..... | |
| Erie, Pennsylvania | 29.23 | 742.0 | 29.96 | 761.0 | 32 | 0.0 | 89 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.16 | 4.1 | Cloudy ..... | |
| Escanaba, Michigan | 29.40 | 746.7 | 30.12 | 765.0 | 8 | —13.3 | 55 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Florence, Arizona | 28.61 | 724.1 | 30.11 | 764.8 | 51 | 10.6 | 40 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Buford, Dakota | 27.98 | 710.7 | ..... | ..... | — 1 | —18.3 | 68 | E | 12 | 5.4 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| Fort Craig, New Mexico | 25.43 | 645.9 | 29.50 | 749.3 | 52 | 11.1 | 41 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Fort Davis, Texas | 25.13 | 638.3 | 30.09 | 764.3 | 43 | 6.1 | 30 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Gibson, Indian Ter | 29.37 | 746.0 | 29.92 | 760.0 | 44 | 6.7 | 68 | NE | 2 | 0.9 | ..... | 5ck | Sm'e | NW | Calm | 0 | 0 | Smoky..... | |
| Fort Griffin, Texas | 28.52 | 724.4 | 29.81 | 757.2 | 39 | 3.9 | 82 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Keogh, Montana | 27.29 | 693.2 | ..... | ..... | 22 | — 5.6 | 85 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy ..... | |
| Fort McKavett, Texas | 27.64 | 702.0 | 29.54 | 750.3 | 54 | 12.2 | 74 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.64 | 727.4 | 29.77 | 756.1 | 40 | 4.4 | 91 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Stevenson, Dakota | 28.21 | 741.9 | ..... | ..... | —19 | —28.3 | 65 | E | 2 | 0.9 | ..... | 1c | 0 | NW | ..... | 0 | 0 | Fair..... | |
| Fredericksburg, Texas | 28.15 | 740.4 | 29.64 | 752.8 | 69 | 20.6 | 80 | S | 9 | 4.0 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy..... | |
| Galveston, Texas | 29.90 | 759.4 | 29.95 | 760.7 | 69 | 20.6 | 100 | S | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy ..... | |
| Graham, Texas | 28.74 | 730.0 | 29.80 | 756.9 | 43 | 6.1 | 75 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Grand Haven, Michigan | 29.40 | 746.7 | 30.09 | 764.3 | 27 | — 2.8 | 76 | Calm | 0 | 0 | ..... | 5ck | 2s | NW | Calm | 0 | 0 | Fair..... | |
| Indianapolis, Indiana | 29.22 | 742.2 | 30.02 | 762.5 | 35 | 1.7 | 80 | N | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0.11 | 2.8 | Cloudy..... | |
| Indianola, Texas | 29.91 | 759.7 | 29.93 | 760.2 | 69 | 20.6 | 95 | S | 18 | 8.0 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy..... | |
| Jacksboro, Texas | 28.68 | 728.5 | 29.81 | 757.2 | 48 | 8.9 | 63 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Jacksonville, Florida | 30.18 | 766.6 | 30.21 | 767.3 | 66 | 18.9 | 84 | SW | 8 | 3.6 | ..... | 5k | 0 | S | ..... | 0 | 0 | Fair..... | |
| Keokuk, Iowa | 29.42 | 747.2 | 30.06 | 763.5 | 34 | 1.1 | 79 | NE | 3 | 1.3 | ..... | ..... | 10s | ..... | NE | 0.17 | 4.3 | Cloudy..... | |
| Key West, Florida | 30.17 | 766.3 | 30.20 | 767.1 | 73 | 22.8 | 76 | SE | 11 | 4.9 | ..... | 2k | 0 | SE | ..... | 0 | 0 | Clear..... | |
| Kittyhawk, North Carolina | 30.00 | 762.0 | 30.02 | 762.5 | 61 | 16.1 | 88 | SW | 25 | 11.2 | ..... | ..... | 10n | ..... | SW | Inap. | Inap. | Light rain... | |
| Knoxville, Tennessee | 28.99 | 736.3 | 29.98 | 761.5 | 55.5 | 13.1 | 97 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | W | 0.58 | 14.7 | Cloudy..... | |
| La Crosse, Wisconsin | 29.34 | 745.2 | 30.12 | 765.0 | 22 | — 5.6 | 72 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| La Mesilla, New Mexico | 26.03 | 661.2 | 30.18 | 766.6 | 44 | 6.7 | 45 | Calm | 0 | 0 | ..... | 5cs | 2s | NW | Calm | 0 | 0 | Cloudy..... | |
| Laredo, Texas | 29.42 | 747.2 | 29.75 | 755.6 | 69 | 20.6 | 85 | SE | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Leavenworth, Kansas | 29.13 | 739.9 | 30.00 | 762.0 | 33 | 0.6 | 79 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy..... | |
| Los Angeles, California | 29.76 | 755.9 | 30.10 | 764.5 | 54.0 | 12.2 | 90 | Calm | 0 | 0 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Cloudy ..... | |
| Louisville, Kentucky | 29.46 | 748.0 | 30.02 | 762.5 | 39 | 3.9 | 82 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | NW | 0.06 | 1.5 | Cloudy..... | |
| Lynchburg, Virginia | 29.25 | 742.9 | 29.92 | 760.0 | 51 | 10.6 | 72 | Calm | 0 | 0 | ..... | 0 | 5ks | ..... | Calm | 0.22 | 5.6 | Fair..... | |
| Madison, Wisconsin | 29.06 | 738.1 | 30.09 | 764.3 | 29 | — 1.7 | 78 | W | 6 | 2.7 | ..... | 10ck | 0 | W | ..... | Inap. | Inap. | Cloudy..... | |
| Marquette, Michigan | 29.32 | 744.7 | 30.08 | 764.0 | 12 | —11.1 | 61 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Mason, Texas | 28.24 | 717.3 | 30.01 | 762.2 | 51 | 10.6 | 86 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | SW | 0 | 0 | Fair ..... | |
| Memphis, Tennessee | 29.70 | 754.4 | 30.02 | 762.5 | 53 | 11.7 | 93 | N | 7 | 3.1 | ..... | ..... | 10s;fg | ..... | Calm | Inap. | Inap. | Foggy..... | |
| Milwaukee, Wisconsin | 29.31 | 744.5 | 30.07 | 763.8 | 29 | — 1.7 | 89 | W | 10 | 4.5 | ..... | 5ck | 5s | NW | Calm | Inap. | Inap. | Cloudy..... | |
| Mobile, Alabama | 30.01 | 762.2 | 30.06 | 763.5 | 64.5 | 18.1 | 96 | S | 15 | 6.7 | ..... | ..... | 10s | ..... | S | 0 | 0 | Threatening | |
| Montgomery, Alabama | 29.83 | 757.7 | 30.06 | 763.5 | 63 | 17.2 | 88 | SW | 2 | 0.9 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy..... | |
| Morgantown, West Virginia | 28.84 | 732.5 | 29.89 | 759.2 | 47 | 8.3 | 85 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.32 | 8.1 | Cloudy ..... | |
| Mt. Washington, N. H. | 23.51 | 597.1 | 29.87 | 758.7 | 13 | —10.6 | 100 | SW | 37 | 16.5 | ..... | ..... | 10n | ..... | SW | 0.01 | 0.3 | Light snow. | |
| Nashville, Tennessee | 29.46 | 748.3 | 30.00 | 762.0 | 50 | 10.0 | 93 | Calm | 0 | 0 | ..... | ..... | Sm'e | ..... | ..... | 0.37 | 9.4 | Dense smoke | |
| New Haven, Connecticut | 29.85 | 758.2 | 29.97 | 761.2 | 36 | 2.2 | 90 | NE | 8 | 3.6 | ..... | ..... | 10n | ..... | NE | 0.30 | 7.6 | Light rain... | |
| New London, Connecticut | 29.97 | 761.2 | 30.02 | 762.5 | 35 | 1.7 | 100 | NE | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.18 | 4.1 | Light rain.... | |
| New Orleans, Louisiana | 29.94 | 760.5 | 29.99 | 761.7 | 68 | 18.9 | 95 | S | 8 | 3.6 | ..... | ..... | 10s;sme | ..... | S;Calm | 0 | 0 | Cloudy ..... | |
| Newport, Rhode Island | 29.96 | 761.0 | 30.01 | 762.2 | 35 | 1.7 | 100 | E | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.23 | 5.8 | Light rain... | |
| New York, New York | 29.76 | 755.9 | 29.94 | 760.5 | 38 | 3.3 | 90 | NE | 12 | 5.4 | ..... | ..... | 10s;fg | ..... | ..... | 0.15 | 3.8 | Cloudy..... | |
| Norfolk, Virginia | 29.93 | 760.2 | 29.99 | 761.7 | 58 | 14.4 | 100 | SW | 8 | 3.6 | ..... | ..... | 10n | ..... | SW | 0.45 | 11.4 | Light rain... | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. | | BAROMETER. Reduced to sea-level. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. Direction. | WIND. Velocity. | | WIND. Force. | CLOUDS. Amount. | | CLOUDS. Direction. | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | nches. | illimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10 | 0—10 | —10. | From— | From— | Inches. | Millimeters. | | |
| North Platte, Nebraska | 26.90 | 683.2 | 29.52 | 749.8 | 32 | 0.0 | 74 | SE | 24 | 10.7 | ..... | 10cs | Haze | W | Calm | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 29.89 | 759.2 | 29.94 | 760.5 | 32.0 | 0.0 | 89 | S | 3 | 1.3 | ..... | 0 | 5s | ..... | S | 0.13 | 3.3 | Fair | |
| Omaha, Nebraska | 28.85 | 732.8 | 29.99 | 761.7 | 30 | — 1.1 | 78 | E | 6 | 2.7 | ..... | 5k | 0 | W | ..... | 0.05 | 1.3 | Fair | |
| Oswego, New York | 29.64 | 752.8 | 29.97 | 761.2 | 35 | 1.7 | 80 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Pembina, Dakota | 29.29 | 744.0 | 30.25 | 768.3 | —16 | —27.8 | 100 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pa | 29.87 | 758.7 | 29.92 | 760.0 | 41 | 5.0 | 100 | NE | 6 | 2.7 | ..... | ..... | Fog | ..... | Calm | 0.11 | 2.8 | Foggy | |
| Phœnix, Arizona | 28.79 | 731.3 | 30.59 | 777.0 | 56 | 13.3 | 51 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Pike's Peak, Colorado | 17.48 | 444.0 | 29.68 | 753.9 | 5 | —15.0 | 100 | W | 40 | 17.9 | ..... | ..... | 10n | ..... | Calm | 0.56 | 14.2 | Light snow. | |
| Ploche, Nevada | 23.98 | 609.1 | 29.75 | 755.6 | 33 | 0.6 | 79 | N | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.12 | 3.0 | Cloudy | |
| Pittsburg, Pennsylvania | 29.10 | 739.1 | 29.93 | 760.2 | 37 | 2.8 | 90 | NW | 7 | 3.1 | ..... | ..... | 10s;fg | ..... | Calm | 0.37 | 9.4 | Cloudy | |
| Port Huron, Michigan | 29.34 | 745.2 | 30.04 | 763.0 | 26 | — 3.3 | 88 | N | 4 | 1.8 | ..... | ..... | 10ks | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Portland, Maine | 30.00 | 762.0 | 30.11 | 764.8 | 32 | 0.0 | 79 | W | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Portland, Oregon | 29.94 | 760.5 | 30.04 | 763.0 | 39.5 | 4.2 | 91 | NW | 3 | 1.3 | ..... | ..... | 10s | ..... | ..... | 0.12 | 3.0 | Cloudy | |
| Prescott, Arizona | 24.55 | 623.6 | 29.91 | 759.7 | 44 | 6.7 | 70 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.04 | 737.6 | 29.80 | 756.4 | 52 | 11.1 | 86 | SE | 13 | .8 | ..... | 8k | 2s | S | SE | 0 | 0 | Cloudy | |
| Punta Rassa, Florida | 30.21 | 767.3 | 30.23 | 767.8 | 70 | 21.1 | 80 | SE | 14 | 6.3 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Red Bluff, California | 29.68 | 753.9 | 30.04 | 763.0 | 50 | 10.0 | 86 | W | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Rio Grande City, Texas | 29.71 | 754.6 | 29.92 | 760.0 | 70 | 21.1 | 90 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Rochester, New York | 29.33 | 745.0 | 29.97 | 761.2 | 30 | — 1.1 | 89 | NW | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.08 | 2.0 | Light snow. | |
| Roseburg, Oregon | 29.43 | 747.5 | 30.00 | 762.0 | 41.0 | 5.0 | 95 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.17 | 4.3 | Cloudy | |
| Sacramento, California | 29.98 | 761.5 | 30.06 | 763.5 | 50 | 10.0 | 89 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | W | 0.30 | 7.6 | Cloudy | |
| St. Louis, Missouri | 29.53 | 750.0 | 30.12 | 765.0 | 35 | 1.7 | 70 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| St. Marks, Florida | 30.14 | 765.5 | 30.16 | 766.1 | 65 | 18.3 | 94 | SW | 10 | 4.5 | ..... | 0 | 1s | ..... | SW | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.25 | 742.9 | 30.14 | 765.5 | 15 | — 9.4 | 47 | NW | 3 | 1.3 | ..... | 1ck | 0 | NW | ..... | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.63 | 651.0 | 29.96 | 761.0 | 32 | 0.0 | 40 | N | 7 | 3.1 | ..... | 1c | 0 | Calm | ..... | 0.08 | 2.0 | Clear | |
| San Antonio, Texas | 29.19 | 741.4 | 29.75 | 755.6 | 68 | 20.0 | 95 | SE | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light rain | |
| San Diego, California | 30.06 | 763.5 | 30.14 | 765.5 | 52 | 11.1 | 96 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Sandusky, Ohio | 29.33 | 745.0 | 30.03 | 762.8 | 32 | 0.0 | 79 | NE | 11 | 4.9 | ..... | ..... | 10s | ..... | Calm | 0.41 | 10.4 | Cloudy | |
| Sandy Hook, New Jersey | 29.88 | 758.9 | 29.92 | 760.0 | 39 | 3.9 | 100 | E | 8 | 3.6 | ..... | ..... | Fog | ..... | E | 0.18 | 4.6 | Foggy | |
| San Francisco, California | 30.04 | 763.0 | 30.10 | 764.5 | 51.8 | 11.0 | 78 | SW | 3 | 1.3 | ..... | Haze | 0 | Calm | ..... | 0.02 | 0.5 | Clear | |
| Santa Fé, New Mexico | 23.05 | 585.5 | 29.59 | 751.6 | 41 | 5.0 | 65 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Savannah, Georgia | 30.07 | 763.8 | 30.16 | 766.1 | 65 | 18.3 | 84 | SW | 14 | 6.3 | ..... | 5k | 2ks | SW | SW | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.69 | 754.1 | 29.90 | 759.4 | 67 | 19.4 | 89 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Silver City, New Mexico | 24.24 | 615.7 | 30.43 | 772.9 | 45 | 7.2 | 53 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Smithville, North Carolina | 30.12 | 765.0 | 30.15 | 765.8 | 61 | 16.1 | 94 | SW | 16 | 7.2 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Threatening | |
| Springfield, Massachusetts | 29.90 | 759.4 | 30.03 | 762.8 | 32 | 0.0 | 89 | N | 7 | 3.1 | ..... | ..... | 10n | ..... | Calm | 0.17 | 4.3 | Light snow | |
| Stockton, Texas | 29.85 | 682.0 | 29.85 | 758.2 | 52 | 11.1 | 23 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.07 | 763.8 | 30.12 | 765.0 | 36 | 2.2 | 80 | SE | 11 | 4.9 | ..... | ..... | 10n | ..... | SE | 0.03 | 0.8 | Light snow | |
| Toledo, Ohio | 29.31 | 744.5 | 30.02 | 762.5 | 32 | 0.0 | 79 | NE | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0.18 | 4.6 | Cloudy | |
| Tucson, Arizona | 27.72 | 699.0 | 30.07 | 763.8 | 55 | 12.8 | 50 | E | 1 | 0.4 | ..... | 0 | 8s | ..... | SW | 0 | 0 | Cloudy | |
| Umatilla, Oregon | 29.71 | 754.6 | 30.23 | 767.8 | 31.0 | — 0.6 | 89 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 28 | — 2.2 | 77 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Uvalde, Texas | 29.00 | 736.6 | 29.80 | 756.9 | 66 | 18.9 | 95 | SE | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Vicksburg, Mississippi | 29.73 | 755.1 | 29.98 | 761.5 | 66 | 18.9 | 89 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | SW | 0 | 0 | Fair | |
| Virginia City, Montana | 24.11 | 612.4 | 29.59 | 751.6 | 24 | — 4.4 | 74 | SW | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0.08 | 2.0 | Cloudy | |
| Visalia, California | 29.70 | 754.4 | 30.07 | 763.8 | 53.5 | 11.9 | 87 | NW | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Washington, D. C. | 29.82 | 757.4 | 29.93 | 760.2 | 40 | 4.4 | 91 | NW | 3 | 1.3 | ..... | 5ck | 5ks;fg | SW | SW;NW | 0.02 | 0.5 | Cloudy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 44 | 6.7 | 60 | NW | ..... | ..... | 1 | Haze | 2s | Calm | Calm | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 30.04 | 763.0 | 30.12 | 765.0 | 65 | 18.3 | 89 | SW | 14 | 6.3 | ..... | ..... | 10n | ..... | SW | 0.01 | 0.3 | Light rain | |
| Winnemucca, Nevada | 25.64 | 651.2 | 30.00 | 762.0 | 29 | — 1.7 | 89 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | 0.11 | 2.8 | Cloudy | |
| Wood's Holl, Mass | 29.98 | 761.5 | 30.02 | 762.5 | 37 | 2.8 | 90 | SE | 18 | 8.0 | ..... | ..... | 10n | ..... | Calm | 0.14 | 3.6 | Light rain | |
| Yankton, Dakota | 28.73 | 729.7 | 30.09 | 764.3 | 24 | — 4.4 | 75 | E | 15 | 6.7 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.82 | 757.4 | 29.98 | 761.5 | 57 | 13.9 | 58 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **SUB-SERIES.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.36 | 720.3 | 29.79 | 756.7 | 40 | 4.4 | 73 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.14 | 765.5 | 30.19 | 766.8 | 70 | 21.1 | 79 | SE | 1.2 | 0.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.28 | 642.1 | ..... | ..... | 64.5 | 18.1 | 85 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | ..... | 0.02 | 0.5 | ..... | Thomas Herran. |
| Navassa, W. I | 30.04 | 763.0 | 30.12 | 765.0 | 77 | 25.0 | ..... | SE | 4.5 | 2.0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.00 | 763.5 | 30.07 | 763.8 | 80 | 26.7 | 91 | E | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 1.080 | 27.43 | Raining | O. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,181.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,037.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.890 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.0(?) m.; Winnemucca, 4,336.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.83 in.; Santa Fé, 6.64 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.69 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.01 | 762.2 | 51 | 10.6 | 51 | 10.6 | 86 | WSW | 11 | 4.9 | ..... | ..... | 10 | ..... | SW | 0 | 0 | ..... | ..... | Overcast..... | |
| Navy Yard, Pensacola, Fla. | 30.22 | 767.6 | 66 | 18.9 | 66 | 18.9 | 94 | SE | 18 | 8.0 | ..... | ..... | 8 | ..... | SW | 2.27 | 57.7 | ..... | ..... | Threatening | |
| Navy Yard, Portsmouth, N.H | 30.10 | 764.5 | 57 | 13.9 | 34 | 1.1 | 90 | SSE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Snowing..... | |
| Naval Hospital, Yokohama, Japan.....* | 29.65‡ | 753.1‡ | ..... | ..... | 42.2 | 5.7 | 50 | NNW | ..... | ..... | 4 | ..... | 8k | ..... | NW | 0.11 | 2.8 | ..... | ..... | Cloudy..... | |
| Adams, Panama .....* | 30.00 | 762.0 | 77 | 25.0 | 77 | 25.0 | 95 | NW | ..... | ..... | 1 | ..... | 2? | ..... | N;W | ..... | ..... | ..... | ..... | Rainy ?..... | |
| Alaska, San Francisco, Cal..... | 30.09‡ | 764.3‡ | ..... | ..... | 53 | 11.7 | 80 | SW | ..... | ..... | 2 | ..... | 10 | ..... | NE | 0.1 | 3. | Smooth | .... .... | Overcast..... | |
| Alliance, Leghorn, Italy..... | 29.76‡ | 755.9‡ | ..... | ..... | 59 | 15.0 | 82 | S | ..... | ..... | 3-4 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Threatening | |
| Ashuelot, Hong-Kong, China. .*.. | 30.15‡ | 765.8‡ | ..... | ..... | 59 | 15.0 | 65 | ENE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Canonicus, New Orleans, La. ...,*... | 30.00 | 762.0 | 51 | 10.6 | 70 | 21.1 | 95 | S | ..... | ..... | 4 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Heavy rain.. | |
| Colorado, New York, N. Y..... | 29.92‡ | 760.0‡ | 38 | 3.3 | 37 | 2.8 | 90 | NE | 9 | 4.0 | ..... | ..... | 8 | ..... | ..... | 0.125 | 3.18 | ..... | ..... | ..... | |
| Constitution Lisbon, Portugal..... | 29.62‡ | 752.3‡ | ..... | ..... | 55 | 12.8 | 93 | NE | ..... | ..... | 2 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear ..... | |
| Despatch, Naples, Italy..... | 29.85‡ | 758.2‡ | ..... | ..... | 70 | 21.1 | 56 | SE | ..... | ..... | 2 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | ..... | Clear. ..... | |
| Franklin, Norfolk, Va.....* | 30.13 | 765.3 | 67 | 19.4 | 68 | 14.4 | 94 | SSW | 9 | 4.0 | ..... | ..... | 8 | ..... | Calm | 0.3 | 8. | ..... | ..... | Raining..... | |
| Gettysburg, Genoa, Italy ..... | 29.93‡ | 760.2‡ | ..... | ..... | 56 | 13.3 | 7? | Calm | ..... | ..... | 0 | ..... | 10 | ..... | .. ..... | 0.10 | 2.5 | ..... | ..... | Showery..... | |
| Hartford, Montevideo, Uruguay*... | 30.02 | 762.5 | 71 | 21.7 | 70 | 21.1 | 85 | NNE | .. ... | ..... | 3 | ..... | 8 | ..... | NNE | 0.01 | 0.3 | Smooth | NNE | Hazy..... | |
| Lackawanna, S. 6° 50', W. 80° 50'....* | 29.80‡ | 756.9‡ | ..... | ..... | 69 | 20.6 | 90 | SSE | ..... | ..... | 1 | ..... | 8 | ..... | S | 0 | 0 | Smooth | ..... | Overcast..... | |
| Michigan, Erie, Pa.....† | 29.95 | 760.7 | ..... | ..... | 30 | — 1.1 | 78 | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Foggy..... | |
| Monocacy, Shanghai, China.....*.. | 30.21‡ | 767.3‡ | ..... | ..... | 48 | 8.9 | 78 | SSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | .... .... | ..... | Clear ..... | |
| Monongahela, Yokohama, Japan ....*.. | 29.62‡ | 752.3‡ | ..... | ..... | 45 | 7.2 | 61 | NNW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Squally..... | |
| New Hampshire, Port Royal, S. C.....*... | 30.17† | 766.3 | 65 | 18.3 | 64 | 17.8 | 89 | SSW | 20 | 8.9 | ..... | ..... | 8 | ..... | SW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Onward, Callao, Peru.....†*.. | 30.05 | 763.3 | ..... | ..... | 67 | 19.4 | 95 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Foggy ..... | |
| Palos, Tientsin, China.....*... | 30.04 | 763.0 | 38 | 3.3 | 38 | 3.3 | 81 | SSE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 45 | 7.2 | 61 | ESE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Pensacola. Valparaiso, Chili..... | 30.02‡ | 762.5‡ | ..... | ..... | 65 | 18.3 | 78 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Plymouth, N. 33° 44', W. 59° 30'..... | 30.45‡ | 773.4‡ | ..... | ..... | 60 | 15.6 | 76 | NNE | ..... | ..... | 1-2 | ..... | 1 | ..... | ..... | ..... | ..... | Light | NNW | Pleasant .... | |
| Powhatan, N. 20° 57', W. 66° 40'..... | 30.18‡ | 766.6‡ | ..... | ..... | 76 | 24.4 | 77 | NE | ..... | ..... | 5 | ..... | 10 | ..... | NE | 0.025 | 0.64 | Mod'ate | NE | Cloudy ..... | |
| Quinnebaug, N. 37° 47', E. 0° 8'..... .... | 29.64‡ | 752.8‡ | ..... | .. ..... | 57 | 13.9 | 81 | WNW | ..... | ..... | 4 | ..... | 8 | ..... | WNW | ..... | ..... | Long | NW | Cloudy..... | |
| Ranger. Foochow, China.....*... | 30.23‡ | 767.8‡ | ..... | ..... | 60 | 15.6 | 65 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Richmond, N. 22° 24', E. 37° 46'..... | 29.90‡ | 759.4‡ | ..... | ..... | 79 | 26.1 | 51 | NNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Rio Bravo, Brownsville, Texas..... | 29.90 | 759.4 | 71 | 21.7 | 70 | 21.1 | 100 | SE | ..... | ..... | 2 | ..... | 10 | ..... | SE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md... ..... | 29.92‡ | 760.0‡ | ..... | ..... | 40 | 4.4 | 100 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Foggy ..... | |
| Saratoga, Hampton Roads, Va..... | 29.97‡ | 761.2‡ | ..... | ..... | 57 | 13.9 | 100 | SSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | Light | Light | ..... | ..... | Overcast..... | |
| St. Louis, League Island, Pa ..... | 29.87 | 758.7 | 59 | 15.0 | 44 | 6.7 | 69 | NE | 1 | 0.4 | ..... | ..... | 10 | ..... | Calm | 0.07 | 1.8 | ..... | ..... | Foggy ..... | |
| Supply, Brooklyn, N. Y..... | 29.94‡ | 760.5‡ | ..... | ..... | 41 | 5.0 | 82 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Trenton Naples, Italy.....*... | 29.85‡ | 758.2‡ | ..... | ..... | 67 | 19.4 | 60 | SW | ..... | ..... | 1 | ..... | 0 | ..... | SW | 0 | 0 | Mod'ate | S | Clear..... | |
| Tuscarora, Salinas Cruz, Mexico.... | 29.94‡ | 760.5‡ | ..... | ..... | 80 | 26.7 | 78 | E | ..... | ..... | 0-1 | ..... | 10k | ..... | ..... | 0 | 0 | Long | S | Cloudy..... | |
| Wabash, Boston, Mass..... | 30.13‡ | 765.3‡ | ..... | .. ..... | 34 | 1.1 | 80 | SE | 9 | 4.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Snowing..... | |
| Wyoming, Alexandria, Egypt....*... | 29.84‡ | 757.9‡ | ..... | ..... | 70 | 21.1 | 95 | SSW | ..... | ..... | 0-1 | ..... | 5 | ..... | S | ..... | ..... | Smooth | ..... | Fair..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | |
| S. S. Colima, N. 35° 33′, W. 121° 34′.† | | 30.16‡ | 766.1‡ | 57 | 13.9 | | W | | | 3 | | 5 | | NW | 0 | Heavy | NNW | D. clouds | Capt. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Granada, Capt. Austin, N. 20° 40′, W. 105° 50′.† | | 30.21‡ | 767.3‡ | 75 | 23.9 | | NNW | | | 3 | | c | | | | Mod'ate | NNW | Clear | F. W. Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, N. 29° 35′, W. 141° 40′ | | 30.17‡ | 766.3‡ | | | | WSW | | | 4 | | | | W;S | | Long; mod'ate | NW;W | Squally | R. C. Ghest, 1st Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; and no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WHITE STAR LINE MARINE SERIES.** Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, Capt. L. Meyer, N. 28° 57′, E. 129° 26′ | | 30.09‡ | 764.8‡ | 59 | 15.0 | 59 | NNW | | | 5–6 | | ks | | NW | Slight | Rough | NNW | Squally | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 22° 17′, E. 114° 10′.† | | 30.18‡ | 766.6‡ | | | | NNE | | | 1 | | c | | Var. | 0 | | | | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** Furnished by the coöperation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 50° 31′, W. 2° 26′ | | 29.87‡ | 758.7‡ | | | | NE | | | 5 | | | | ENE | | Long | ENE | Cloudy | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 5; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |

### AMERICAN S. S. CO. MARINE SERIES.

Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Indiana, St. George's Channel | | 30.05‡ | 763.3‡ | 52 | 11.1 | | WNW | | | 6 | | 5 | | NW | 0 | | | Partly cl'dy | Captain Sargent. Wm. Shackford, Chief Officer. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

### RED STAR LINE MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |

### ALLAN LINE MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

### MARINE SERIES. (Miscellaneous.

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, N. 37° 49′, W. 73° 86′ | | 29.92‡ | 760.0‡ | 55 | 12.8 | 100 | SW | 16 | 8.0 | | | 10n | | SW | 1.12 in. or 28.4mm | Rough | SW | Raining | Capt. James Jorgensen. |

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

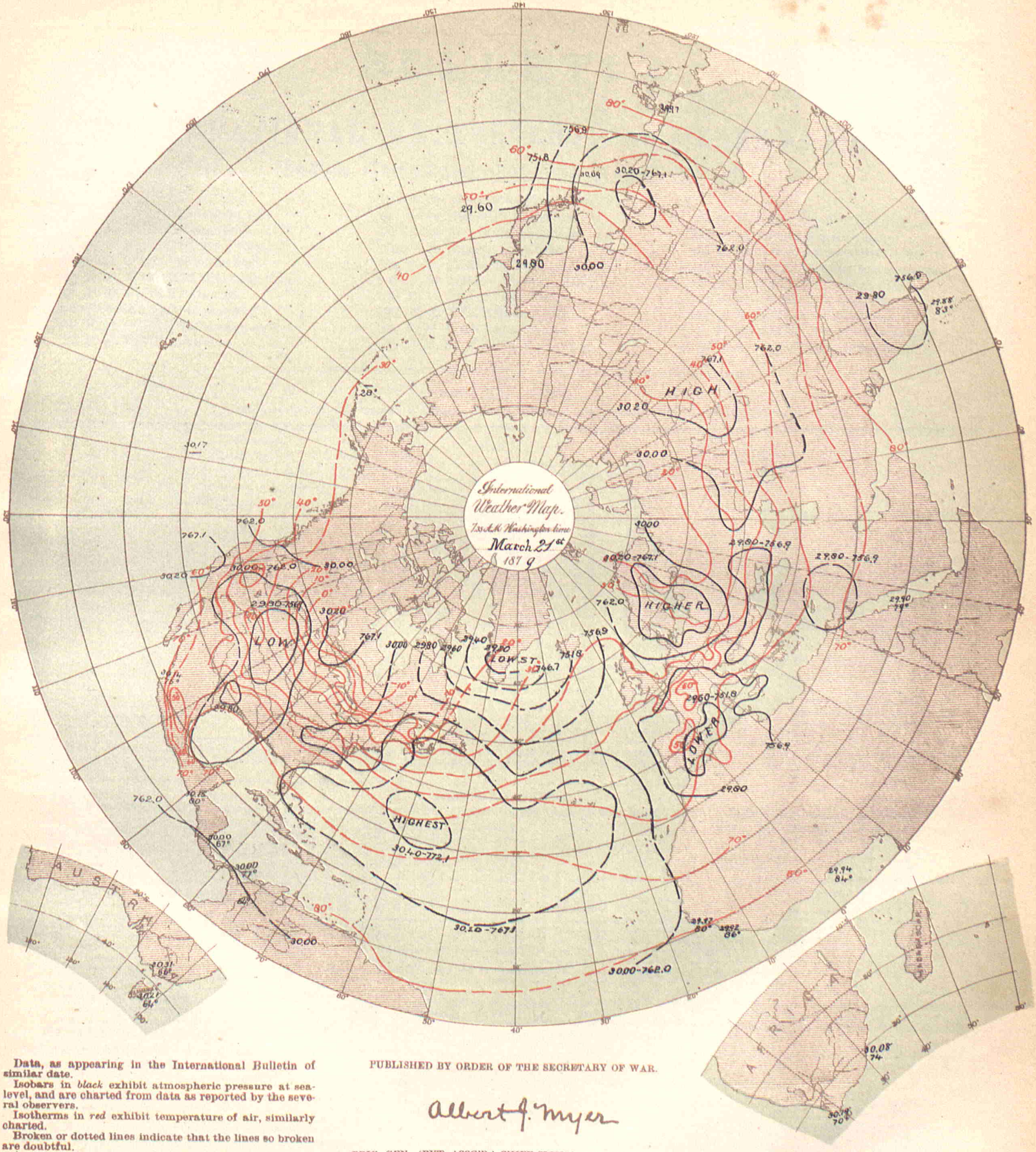
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer U. S. A.*




**Data**, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 22, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Morocco | ..... | ..... | 30.06 | 763.6 | 69.2 | 15.1 | 89 | SW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0.217 | 5.5 | Foggy | |
| Nemours | ..... | ..... | 29.69 | 754.1 | 63.0 | 17.2 | 76 | WNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.059 | 1.5 | Raining | Kesxuche. |
| Algiers | ..... | ..... | 29.92 | 759.9 | 61.2 | 16.2 | 77 | WSW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0.083 | 2.1 | Clear | Tourilliere. |
| La Calle | ..... | ..... | 29.68 | 751.4 | 68.0 | 20.0 | 64 | NW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0.228 | 5.8 | Fair | Foufrede. |
| Tunis | ..... | ..... | 29.72 | 755.0 | 60.1 | 15.6 | 85 | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Jacques. |
| Sfax | ..... | ..... | 29.69 | 754.0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 29.75 | 755.7 | 56.3 | 13.5 | 50 | WSW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.020 | 0.5 | Covered | Herbin. |
| Tebessa | ..... | ..... | 29.68 | 753.9 | 68.7 | 20.4 | 29 | W | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Watrin. |
| Geriville | ..... | ..... | 29.72 | 754.8 | 50.4 | 10.2 | 97 | W | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Brugniaux. |
| Laghouat | ..... | ..... | 29.72 | 754.8 | 65.1 | 18.4 | 35 | W | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Bertrand. |
| Biskra | ..... | ..... | 29.65 | 753.0 | 75.0 | 23.9 | 23 | NW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0.059 | 1.5 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.22 | 742.1 | 29.78 | 756.5 | 37.4 | 3.0 | 85 | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.071 | 1.8 | Raining | Prof. Ivan Stoair. |
| Cracow, I. R. Observatory | 29.20 | 741.8 | 30.00 | 762.0 | 35.6 | 2.0 | 89 | E | ..... | ..... | 5 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski |
| Eperies | 29.00 | 736.7 | 29.91 | 759.6 | 40.3 | 4.6 | ..... | N | ..... | ..... | 2 | ..... | 7os | ..... | S | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.56 | 725.5 | 29.85 | 758.1 | 36.5 | 2.5 | 76 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.071 | 1.8 | ..... | Andreas Rospini. |
| Hermannstadt | 28.48 | 723.3 | 29.96 | 760.9 | 35.8 | 2.1 | 77 | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.004 | 0.1 | ..... | Prof. A. Gottschling. |
| Kremsmünster | 28.24 | 717.2 | 29.59 | 751.5 | 43.7 | 6.5 | 77 | ENE | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0.189 | 4.8 | ..... | Prof. C. Wagner. |
| Lemberg | 29.02 | 737.2 | 30.06 | 763.5 | 30.6 | — 0.8 | 86 | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.50 | 749.4 | 29.62 | 752.3 | 56.8 | 13.6 | 80 | SE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office. |
| Szathmar | 29.47 | 748.5 | 29.94 | 760.5 | 45.7 | 7.6 | 87 | E | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 29.55 | 750.6 | 29.65 | 753.2 | 51.4 | 10.8 | 76 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.335 | 8.5 | Raining | P. Busin. |
| Vienna | 29.11 | 739.3 | 29.85 | 758.1 | 36.3 | 2.4 | 65 | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Hailing | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | 29.43 | 747.4 | 29.68 | 752.5 | 48.7 | 9.3 | 74 | ENE | ..... | ..... | 4 | 4 | 3 | SW | ENE | 0 | 0 | ..... | Royal Observatory |
| Furnes | 29.66 | 753.3 | 29.68 | 753.9 | 43.0 | 6.1 | 82 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae. |
| Maeseyck | 29.49 | 749.1 | 29.62 | 752.3 | 46.2 | 7.9 | 73 | NE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:9, instead of 0:54, p. m.. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.10 | 764.5 | 30.21 | 767.3 | 26.5 | 2.5 | ..... | SE | 18 | 8.0 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | Blue sky | W. Boswell. |
| Ardrossan | 30.07 | 763.8 | 30.09 | 764.3 | 40 | 4.4 | ..... | ENE | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.06 | 763.5 | 38.0 | 3.3 | ..... | ENE | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.97 | 761.2 | 37.0 | 2.8 | ..... | NE | 23 | 10.3 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.94 | 760.5 | 35.5 | 1.9 | ..... | NE | 42 | 18.8 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy | Thomas Mackereth. |
| Bradford, Yorkshire | 29.57 | 751.1 | 29.97 | 761.2 | 35.5 | 1.9 | ..... | NE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.99 | 761.7 | 30.02 | 762.5 | 80.0 | 26.7 | ..... | E | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | Gloomy | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.82 | 757.4 | 36.0 | 2.2 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast | H. Todd. [C. |
| Cardington | ..... | ..... | 29.81 | 757.2 | 36.0 | 2.2 | ..... | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.62 | 752.3 | 29.76 | 755.9 | 35.7 | 2.1 | ..... | NE | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Corpl. Daly, R. E. |
| Dartmoor | 28.33 | 719.6 | 29.85 | 758.2 | 32.0 | 0.0 | ..... | NE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Squally | Alexander Watt. |
| Donaghadee | 30.04 | 763.0 | 30.08 | 764.0 | 40 | 4.4 | ..... | ESE | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 29.66 | 753.4 | 29.68 | 753.9 | 40 | 4.4 | ..... | NE | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy | J. Costello. |
| Falmouth, Observatory | 29.58 | 751.3 | 29.82 | 757.4 | 39.7 | 4.3 | ..... | NNE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.82 | 706.6 | 30.14 | 765.5 | 65.0 | 18.3 | ..... | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 86 | 30.0 | ..... | W ? | ..... | ..... | 0? | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.94 | 760.5 | 42.5 | 5.5 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.70 | 754.4 | 29.75 | 755.6 | 57.6 | 14.2 | ..... | W | ..... | ..... | 5 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.90 | 759.4 | 30.11 | 764.8 | 36.9 | 2.7 | ..... | ENE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | D. G. Maclean. |
| Great Yarmouth | 29.80 | 756.9 | 29.80 | 756.9 | 36 | 2.2 | ..... | ENE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.69 | 751.6 | 29.77 | 756.1 | 35.3 | 1.8 | ..... | NNE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff, for G. B. Airy. |
| Guernsey | 29.46 | 748.3 | 29.69 | 754.1 | 39.6 | 4.2 | ..... | NNE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Dr. S. E. Hoskins, F.R.S. |
| Helston | 29.80 | 756.9 | 29.92 | 760.0 | 42 | 5.6 | ..... | E | ..... | ..... | 6 | ..... | 8k | ..... | ..... | 0 | 0 | Gloomy | M. P. Moyle. |
| Holyhead | 29.92 | 760.0 | 29.97 | 761.2 | 40 | 4.4 | ..... | ENE | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | John Tilston. |
| Jersey | 29.39 | 746.5 | 29.69 | 754.1 | 39.7 | 4.3 | ..... | NE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | Blank | Blank | Misty | J. Fisher. |
| Kew, Observatory | 29.74 | 755.4 | 29.78 | 756.4 | 36.3 | 2.4 | ..... | NNE | 27 | 12.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | The Meteorological Of. |
| Leicester, Museum | 29.61 | 752.1 | 29.87 | 758.7 | 35.5 | 1.9 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.50 | 749.3 | 29.60 | 751.8 | 65 | 18.3 | ..... | SW | ..... | ..... | 3 | ..... | 9ks | ..... | ..... | ..... | ..... | Overcast | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 30.01 | 762.2 | 30.10 | 764.5 | 41 | 5.0 | ..... | SE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.21 | 767.3 | 75.5 | 24.2 | ..... | SE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.72 | 754.9 | 29.91 | 759.7 | 35.8 | 2.1 | ..... | NNE | ..... | ..... | 6 | ..... | 10d | NNE | ..... | 0.028 | 0.71 | Overcast | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.35 | 745.5 | 29.90 | 759.4 | 34.0 | 1.1 | ..... | NNE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.82 | 757.4 | 35 | 1.7 | ..... | N | ..... | ..... | 5 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast | H. E. Bellamy. |
| Plymouth | 29.71 | 754.6 | 29.78 | 756.4 | 39.1 | 3.9 | ..... | NE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Merrifield. |
| Roche's Point | 29.89 | 759.2 | 29.93 | 760.2 | 48 | 8.9 | ..... | E | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded | W. Kennedy. |
| Saint Ann's Head | 29.71 | 754.6 | 29.87 | 758.7 | 44 | 6.7 | ..... | NE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 30.16 | 766.1 | 37.3 | 2.9 | ..... | SSE | 34 | 15.2 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.97 | 761.2 | 54.6 | 12.6 | ..... | NNE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | W. H. Lyne. |
| Sheffield | 29.70 | 754.4 | 30.00 | 762.0 | 35.3 | 1.8 | ..... | NNE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | W. F. Cooper. |
| Silloth Rectory | 30.12 | 765.0 | 30.15 | 765.8 | 38.0 | 3.3 | 69 | E | ..... | ..... | 8 | ..... | 6 | ..... | ..... | 0 | 0 | D. clouds | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.68 | 753.8 | 29.99 | 761.7 | 36.6 | 2.6 | ..... | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. S. J. Perry. |
| Stratfield Turgiss | 29.57 | 751.1 | 29.80 | 756.9 | 36.1 | 2.3 | ..... | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Squally | C.H. Griffith, F.M.S. |
| Thurso | 30.10 | 764.5 | 30.16 | 766.1 | 35 | 1.3 | ..... | SSE | ..... | ..... | 5 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | John Trotter. |
| Truro, Royal Institution | 29.76 | 755.9 | 29.81 | 757.2 | 44 | 6.7 | ..... | NE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy | W. Newcombe. |
| Valencia, Observatory | 29.92 | 760.0 | 29.95 | 760.7 | 47.0 | 8.3 | ..... | ENE | 12 | 5.4 | ..... | ..... | 3 | ..... | ..... | Blank | Blank | D. clouds | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.03 | 762.8 | 30.07 | 763.8 | 73.8 | 23.2 | 56 | SSE | 10 | 4.5 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Foggy | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.12 | 765.0 | 63.0 | 17.0 | 88 | SE | ..... | ..... | 2 | ..... | 10k | ..... | ..... | 0 | 0 | Covered | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 30.16 | 766.1 | 36.2 | 2.3 | ..... | E | ..... | ..... | 3 | ..... | 10k | ..... | ..... | 0 | 0 | Cloudy | Andrew Gibb. |
| Mauritius, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Meldrum. |
| Melbourne, Observatory | 30.19 | 766.8 | 30.28 | 769.1 | 64.0 | 17.8 | 76 | W | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Fine | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 30.13 | 765.3 | 43 | 6.1 | ..... | S | ..... | ..... | 6 | 0 | 10 | ..... | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.20 | 767.1 | 37 | 2.8 | ..... | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 15′, E. 26° 30′ | ..... | ..... | 29.94‡ | 760.5‡ | 52 | 11.1 | ..... | NE | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda, N. 34° 30′, E. 21° 43′ | ..... | ..... | 29.64‡ | 757.9‡ | 63 | 17.2 | ..... | S | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | Capt. B. Boyes. |
| Barque Belle Isle, N. 35° 35′, W. 60° 27′ | ..... | ..... | 30.43‡ | 772.9‡ | 65 | 18.3 | ..... | SW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | 5 | SW | D. clouds | Capt. A. J. Brown. |
| Ship British Commodore, —— City of Agra, N. 29° 30′ W. 44° 09′ | ..... | ..... | 30.40‡ | 772.1‡ | 71 | 21.7 | ..... | SE | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 6 | N | D. clouds | Capt. J. W. Thorne. Capt. Thos. Young. |
| Barque Commewyne, N. 40° 32′, W. 37° 30′ | ..... | ..... | 30.46‡ | 774.2‡ | 56 | 13.3 | ..... | NE | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Capt. A. Buchan. |
| Barque Fedalina, N. 38° 50′, W. 20° 10′ | ..... | ..... | 30.24‡ | 768.1‡ | 55 | 12.8 | ..... | NNW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | 1 | NNW | D. clouds | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. Capt. Barlow. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| S. S. Strathleven, N. 32° 41′, E. 28° 27′ | ..... | ..... | 29.88‡ | 758.9‡ | 63 | 17.2 | ..... | NW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMonagy. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instru-m'tal error and temperature. Inches. | Barometer. Corrected for instru-m'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.31 | 668.3 | 30.03 | 762.8 | 64.8 | 18.2 | 78 | SE | ..... | ..... | 2 | 8cs | ..... | ..... | ..... | 0 | 0 | ..... | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.22 | 767.6 | 30.27 | 768.8 | 32.4 | 0.2 | 64 | ESE | ..... | ..... | 6 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... |
| Farõe | 30.13 | 765.3 | 30.16 | 765.8 | 34.0 | 1.1 | 79 | E | ..... | ..... | 6 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.56 | 750.9 | 29.61 | 752.0 | 12.4 | —10.9 | 79 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Farõe) | 29.91 | 759.7 | 29.94 | 760.6 | 44.6 | 7.0 | 89 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 30.07 | 763.7 | 30.24 | 768.0 | 34.0 | 1.6 | 85 | E | ..... | ..... | 6 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.05 | 737.9 | 29.60 | 751.9 | 41.7 | 5.4 | 94 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Collignon, Director. |
| Amiens, Normal School | 29.60 | 751.8 | 29.71 | 754.6 | 50.0 | 10.0 | 74 | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bonvallet, Director. |
| Avignon, Normal School | 29.42 | 747.2 | 29.50 | 749.2 | 59.0 | 15 | 61 | ENE | ..... | ..... | 1 | ..... | 5 | ..... | SE | 0.43 | 11. | Cloudy | M. Giraud, Director. |
| Bar-sur-Seine | 28.94 | 735.1 | 29.48 | 748.8 | 59.2 | 15.1 | 38 | E | ..... | ..... | 1 | ..... | 5km | ..... | ..... | 0 | 0 | Cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.33 | 745.0 | 29.62 | 752.4 | 44.4 | 6.9 | 84 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 28.61 | 726.7 | 29.49 | 749.1 | 53.2 | 11.8 | 72 | E | ..... | ..... | 1 | ..... | 8 | ..... | S | 0 | 0 | Very cloudy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.66 | 727.9 | 29.56 | 750.8 | 55.8 | 13.2 | 73 | S | ..... | ..... | 2 | 5c | ..... | S | S | 0 | 0 | Cloudy | M. Marlot, Director. |
| Bourges, Normal School | 28.96 | 735.5 | 29.50 | 749.4 | 49.6 | 9.8 | 84 | N | ..... | ..... | 3 | ..... | 10 | N | N | 0 | 0 | Covered | A. Waquet, Director. |
| Brest, Naval Observatory | 29.41 | 747.1 | 29.66 | 753.3 | 42.4 | 5.8 | 75 | NNE | ..... | ..... | 3 | ..... | 10 | ..... | NNE | 0 | 0 | ..... | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.09 | 738.9 | 29.50 | 749.4 | 48.6 | 9.2 | 89 | W | ..... | ..... | 2 | ..... | 5 | W | W | 1.54 | 39. | Raining | September, Director. |
| Caen, Normal School | 29.58 | 751.3 | 29.65 | 753.2 | 43.5 | 6.4 | 79 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | M. Lair, Director. |
| Chartres, Normal School | 28.98 | 736.2 | 29.56 | 750.7 | 42.8 | 6 | 73 | N | ..... | ..... | 3 | ..... | 10 | ..... | SSW | 0.004 | 0.1 | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.26 | 743.2 | 29.61 | 752.1 | 59.0 | 15.0 | 47 | ESE | ..... | ..... | 3 | ..... | 10 | WNW | WNW | ..... | ..... | Covered | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.10 | 713.8 | 29.43 | 747.5 | 58.1 | 14.5 | 37 | SE | ..... | ..... | 1 | ..... | 8 | ..... | SE | 0.079 | 2.0 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.71 | 729.3 | 29.58 | 751.4 | 44.2 | 6.8 | 85 | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Dr. Coulet, Director. |
| Commune de Grèasque* | 28.37 | 720.7 | 29.52 | 749.7 | 54.9 | 12.7 | 61 | NE | ..... | ..... | 2 | ..... | 8 | ..... | S | 0.570 | 14.6 | ¾ covered | M. Kina, Director. |
| Grenoble, Normal School | 28.78 | 731.1 | 29.54 | 750.3 | 54.3 | 12.4 | 70 | WNW | ..... | ..... | 1 | ..... | 8kn | ..... | S | 0 | 0 | Very cloudy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.37 | 746.0 | 29.59 | 751.6 | 42.8 | 6.0 | 88 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.28 | 7. | Covered | Mouillot, Director. |
| Le Mans, Normal School | 29.28 | 743.7 | 29.59 | 751.6 | 41.9 | 5.5 | 88 | NNE | ..... | ..... | 3 | ..... | 8 | ..... | NNE | 0.016 | 0.4 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 28.60 | 726.3 | 29.50 | 749.3 | 56.7 | 13.7 | 55 | N | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Misty | Baudry, Director. |
| Lorient, Naval Observatory | 29.56 | 750.9 | 29.66 | 753.4 | 47.1 | 8.4 | 70 | N | ..... | ..... | 4 | ..... | ..... | ..... | N | 0 | 0 | ..... | Lt.T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galsin, Director |
| Mirecourt, Normal School | 28.50 | 724.0 | 29.59 | 751.6 | 46.0 | 7.8 | 77 | E | ..... | ..... | 3 | ..... | kn | ..... | W | 0 | 0 | ..... | M. Barbier, Director. |
| Nismes, Normal School | 29.25 | 743.0 | 29.45 | 748.6 | 60.1 | 15.6 | 61 | SE | ..... | ..... | 1 | ..... | 5 | ..... | E | 0.406 | 10.25 | Cloudy | Boyer, Director. |
| Privas, Normal School | 28.45 | 722.6 | 29.50 | 749.2 | 55.4 | 13 | 66 | S | ..... | ..... | 1 | ..... | 10n | S | S | ..... | ..... | Raining | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.66 | 626.3 | ..... | ..... | 35.1 | 1.7 | 93 | SE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.028 | 0.7 | Almost cov. | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.52 | 749.8 | 29.55 | 750.6 | 45.9 | 7.7 | 94 | NNE | ..... | ..... | 1 | ..... | 10 | NNE | NNE | 0.16 | 4. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.47 | 748.4 | 29.55 | 750.6 | 45.1 | 7.3 | 77 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.60 | 751.8 | 29.63 | 752.6 | 40.1 | 4.5 | 90 | N | ..... | ..... | 3 | ..... | 10 | N | N | ..... | ..... | Light rain | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.39 | 746.4 | 29.55 | 750.6 | 48.6 | 9.2 | 81 | NNW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.008 | 0.2 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.53 | 724.6 | 29.60 | 751.9 | 48.2 | 9 | 73 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | T. Huguet, Director. |
| Versailles Observatory | 29.07 | 738.3 | 29.56 | 750.8 | 43.2 | 6.2 | 88 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.046 | 1.18 | Rain and fog | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 28.75 | 730.2 | 29.50 | 749.3 | 60.8 | 16 | 70 | S | ..... | ..... | 1 | ..... | 2 | ..... | S | 0 | 0 | Slightly cl'dy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.87 | 758.6 | 29.89 | 759.3 | 73.9 | 23.3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.55 | 14. | ..... | ..... |
| Lyons Obs'y, (Park Station) | 28.88 | 733.5 | 29.47 | 748.6 | 59.7 | 15.4 | 50 | SSE | ..... | ..... | 2 | ..... | 7 | ..... | SSE | 0.004 | 0.1 | Cloudy | L'Abbé Marcl ésl. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Jays. |
| Mont-Louis | 24.35 | 618.6 | 29.07 | 753.6 | 35.6 | 2.0 | 78 | E | 15.0 | 6.7 | ..... | ..... | 10 | ..... | N | 0.976 | 24.8 | ..... | The Staff. |
| Nice | ..... | ..... | 29.58 | 751.3 | 56.8 | 13.8 | 86 | ESE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.496 | 12.6 | Light rain | M. Cave. |
| Paris, Montsouris Obs'y | 29.28 | 743.6 | ..... | ..... | 45.1 | 7.3 | 87 | N | 8 | ..... | ..... | ..... | 10 | ..... | ..... | 0.020 | 0.5 | ..... | Dr. A. Nièpce, Jr. |
| Perpignan | 29.37 | 746.0 | 29.48 | 748.7 | 47.3 | 8.5 | 85 | N | 7.4 | 3.3 | ..... | ..... | 10 | ..... | ..... | 0.020 | 0.5 | ..... | Marié Davy, Director. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. Fines. |
| Pic du Midi, (Plantade,) H. P. | 21.90 | 557.0 | ..... | ..... | 26.4 | — 3.1 | ..... | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 1.201 | 30.5 | ..... | M. Baylac. |
| Toulouse, Observatory | 28.81 | 731.7 | 29.52 | 749.7 | 53.2 | 11.8 | 80 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.906 | 23.0 | Snowy | Gen'l de Nansouty. |
| Tours | 29.34 | 745.2 | 29.54 | 750.2 | 43.5 | 6.4 | 85 | NE | ..... | ..... | 1 | ..... | 10 | ..... | N | 0.425 | 10.8 | ..... | M. Mercadier Juller. |
| Zi-Ka-Wei, (near Shanghai) | 30.21 | 767.3 | 30.23 | 767.9 | 50.0 | 10.0 | 60 | NNE | 13.9 | 6.2 | ..... | ..... | 5c | ..... | ..... | 0 | 0 | Fair | Cousin-Marquete. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit, 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.84 | 732.4 | 29.67 | 753.6 | 43.5 | 6.4 | 81 | E | | | 6 | | 6 | E | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.85 | 758.1 | 30.03 | 762.7 | 34.7 | 1.5 | 67 | E | | | 5 | | 2 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.48 | 748.7 | 30.01 | 762.2 | 33.8 | 1.0 | 47 | E | | | 4 | | 10 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.15 | 740.4 | 29.58 | 751.2 | 47.5 | 8.6 | 58 | E | | | 2 | | 8 | NE | | 0 | 0 | | Albert Senx. |
| Cassel | 29.15 | 740.5 | 29.76 | 755.8 | 35.6 | 2.0 | 60 | NE | | | 5 | | 9 | E | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.61 | 749.6 | 29.67 | 753.7 | 45.7 | 7.6 | 64 | NE | | | 5 | | 2 | | | 0.08 | 2. | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.28 | 743.7 | 29.66 | 753.0 | 47.3 | 8.5 | | NNE | | | 4 | | 8 | | | Inap. | Inap. | | Physical Society. |
| Friedrichshafen | 28.12 | 714.2 | 29.57 | 751.0 | 41.0 | 5.0 | 78 | NE | | | 6 | | 10 | | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.93 | 760.3 | 30.01 | 762.2 | 34.2 | 1.2 | 51 | ENE | | | 7 | | 10cs | | | 0 | 0 | Hazy | Captain F. Hegemann. |
| Kiel | 30.09 | 764.3 | 30.11 | 764.7 | 32.5 | 0.3 | 64 | E | | | 6 | | 8 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.20 | 767.0 | 30.28 | 769.2 | 31.1 | — 0.6 | 49 | NE | | | 3 | | 2 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 30.21 | 767.2 | 32.2 | 0.1 | | E | | | 2 | | 1 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.44 | 747.8 | 29.88 | 758.9 | 33.1 | 0.6 | 66 | E | | | 7 | | 10 | | | 0 | 0 | | Prof. Bruhns, Privy Counsellor. |
| Memel, Naval School | 30.23 | 767.9 | 30.28 | 769.1 | 30.2 | — 1.0 | 43 | NNE | | | 4 | | 1k | | | | | | Skalweit. |
| Neufahrwasser | 30.29 | 769.3 | 30.30 | 769.7 | 30.2 | — 1.0 | 65 | NE | | | 3 | | 0 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.84 | 757.9 | 30.14 | 765.6 | 32.0 | 0.0 | 63 | NE | | | 9 | | 1 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.02 | 737.2 | 29.58 | 751.3 | 46.8 | 8.2 | 66 | NNE | | | 3 | | 10 | | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 28.63 | 727.2 | 29.58 | 751.2 | 43.7 | 6.5 | 71 | E | | | 1 | | 10 | | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.04 | 737.5 | 29.55 | 750.6 | 50.9 | 10.5 | 58 | NE | | | 4 | | 10 | | | 0 | 0 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.09 | 713.4 | 29.60 | 751.7 | 47.1 | 8.4 | 62 | E | 16 | 7 | | | 6ck | NE | NE | 0 | 0 | | Dr. Van Bebber. |
| Wustrow, Naval School | 30.15 | 765.8 | 30.17 | 766.4 | 32.2 | 0.1 | 98 | ENE | | | 5 | | 10s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Athens | 29.50 | 749.3 | 29.89 | 759.2 | 66.0 | 18.9 | | SW | | | 2.5 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.88 | 759.0 | 29.93 | 760.3 | 76.4 | 24.7 | 46 | NW | 5 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.43 | 747.5 | 29.89 | 759.3 | 93.6 | 34.2 | 20 | SSW | 8.4 | 3.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.85 | 758.2 | 29.89 | 759.1 | 81.2 | 27.3 | 82 | WNW | 10 | 4.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.21 | 741.8 | 29.95 | 760.8 | 80.1 | 26.7 | 27 | Calm | 2.1 | 0.9 | | | 3 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.36 | 695.0 | 29.89 | 759.2 | 79.1 | 26.1 | 74 | W | 2.0 | 0.9 | | | 6 | SSW | W | 0 | 0 | D. clouds | |
| Roorkee | 28.99 | 736.4 | 29.90 | 759.4 | 77.8 | 25.4 | 29 | NW | 3.7 | 1.6 | | | 4 | | | 0 | 0 | D. clouds | |
| Agra | 29.32 | 744.7 | 29.88 | 758.8 | 87.7 | 30.9 | 32 | N | | | | | | | | 0 | 0 | | |
| Nagpur | 28.85 | 732.8 | 29.88 | 758.8 | 90.5 | 32.5 | 16 | Calm | 2.4 | 1.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.54 | 750.2 | 29.91 | 759.7 | 84.3 | 29.1 | 28 | NW | 3.5 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.62 | 752.2 | 29.93 | 760.2 | 84.3 | 29.1 | 27 | NW | 4.2 | 1.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.62 | 752.2 | 29.80 | 756.8 | 86.2 | 30.1 | 24 | W | 1.0 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.88 | 708.2 | 29.90 | 759.3 | 79.0 | 26.1 | 17 | NW | 8.4 | 3.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.83 | 757.7 | 29.91 | 759.8 | 86.1 | 30.1 | 55 | SSE | 1.7 | 0.8 | | | 1 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.88 | 758.8 | 29.90 | 759.4 | 81.1 | 27.3 | 88 | NNW | 2.0 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.51 | 749.5 | 29.90 | 759.5 | 78.8 | 26.0 | 24 | Calm | 3.9 | 1.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.83 | 757.6 | 29.92 | 760.0 | 80.9 | 27.2 | 43 | WSW | 5.3 | 2.4 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.60 | 751.9 | 29.95 | 760.7 | 68.0 | 20.0 | 64 | ENE | 4.1 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.56 | 725.5 | 29.91 | 759.8 | 86.3 | 30.2 | 10 | Calm | 2.6 | 1.2 | | | 0 | | | | | | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.5 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.25 | 742.9 | 29.66 | 753.4 | 49.3 | 9.6 | 82 | E | 9.4 | 4.2 | ..... | ..... | 10 | ..... | ..... | 0.909 | 23.1 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.04 | 737.5 | 29.55 | 750.6 | 53.6 | 12.0 | 78 | SE | ..... | ..... | 4 | ..... | 10 | E | ..... | 0.575 | 14.6 | ..... | Prof. Schiaparelli. |
| Padua | 29.49 | 749.0 | 29.60 | 751.8 | 51.3 | 10.7 | 91 | NNE | 16.8 | 7.5 | ..... | ..... | 10 | SE | ..... | 0.811 | 20.6 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.65 | 727.6 | 29.55 | 750.6 | 48.7 | 9.3 | 89 | NNW | 1.8 | 0.8 | ..... | ..... | 10 | ..... | ..... | 0.984 | 25.0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.39 | 746.4 | 29.58 | 751.2 | 55.0 | 12.8 | 80 | S | 4.3 | 1.9 | ..... | ..... | 8 | SW | ..... | 2.657 | 67.5 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.65 | 702.2 | 29.56 | 750.7 | 48.4 | 9.1 | 75 | W | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 1.177 | 29.9 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.52 | 749.9 | 29.57 | 751.1 | 56.7 | 13.7 | 85 | NE | 6.3 | 2.8 | ..... | ..... | 10 | ..... | ..... | 0.197 | 5.0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.33 | 744.9 | 29.58 | 751.4 | 60.8 | 16.0 | 65 | W | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.354 | 9.0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.46 | 748.2 | 29.54 | 750.4 | 60.8 | 16.0 | 73 | SE | ..... | ..... | 4 | ..... | 10 | S | ..... | 0.748 | 19.0 | ..... | Prof. P. Monte. |
| Rome | 29.45 | 747.9 | 29.62 | 752.3 | 64.2 | 17.9 | 62 | S | 18.6 | 8.3 | ..... | ..... | 9 | ..... | ..... | 0.165 | 4.2 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.50 | 749.3 | 29.76 | 755.8 | 59.0 | 15.0 | 68 | S | 24.8 | 11.1 | ..... | ..... | 10 | S | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.78 | 731.1 | 29.67 | 753.5 | 59.4 | 15.2 | 76 | NW | 1.3 | 0.6 | ..... | ..... | 10 | ..... | ..... | 0.016 | 0.4 | ..... | Prof. D. Conti. |
| Cagliari | 29.38 | 746.2 | 29.67 | 751.1 | 60.3 | 15.7 | 55 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0.008 | 0.2 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.34 | 745.3 | 29.60 | 751.7 | 61.5 | 16.4 | 56 | WNW | 13.0 | 5.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.60 | 751.8 | 29.67 | 753.6 | 63.0 | 17.2 | 83 | SE | 4.9 | 2.2 | ..... | ..... | 10 | SE | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.10? | 739.0? | 29.65? | 753.1? | 60.3 | 15.7 | 64 | ESE | 7.4 | 3.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 461 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.08 | 764.0 | 30.10 | 764.5 | 41.6 | 5.3 | 67 | NE | 5.7 | 2.6 | ..... | ..... | 2ck | ..... | ..... | 0.066 | 1.65 | Fair | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.95 | 760.7 | 30.16 | 766.0 | 45.0 | 7.2 | 70 | S | 5.8 | 2.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.87 | 758.7 | 29.94 | 760.5 | 38.0 | 3.3 | 65 | NNW | 5.4 | 2.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.16 | 639.1 | 30.28 | 769.2 | 42.4 | 5.8 | 40 | Calm | ..... | ..... | 0 | 5 | ..... | ..... | ..... | 0 | 0 | ⅛ clouded | Prof. L. Perez. |
| Leon | 24.52 | 623.0 | 30.24 | 768.2 | 55.6 | 13.1 | 61 | NW | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.14 | 587.8 | 30.23 | 767.9 | 50.0 | 10.0 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Light fog | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 61.6 | 10.9 | 42 | S | ..... | ..... | 1 | 2c | 0 | SW | ..... | 0 | 0 | Fair | M. V. de Leon, M. E. |
| Tlacotalpam | 29.87 | 758.6 | 29.88 | 758.9 | 74.7 | 23.7 | 87 | S | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | M. M. Chàzaro. |
| San Luis Potosi | 24.31 | 616.3 | 30.23 | 767.8 | 59.0 | 15.0 | 78 | WSW | ..... | ..... | 1 | 5 | 0 | W | ..... | 0 | 0 | ⅛ clouded | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.48 | 596.3 | 30.24 | 768.1 | 45.5 | 7.5 | 54 | WNW | 2.2 | 1.0 | ..... | ..... | 1 | ..... | Calm | 0 | 0 | ..... | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.42 | 721.9 | 30.09 | 764.4 | 72.5 | 22.5 | 50 | NE | ..... | ..... | 3 | 0 | 0 | ..... | SW | 0 | 0 | ⅛ clouded | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

NOTE.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,883 m., or 6,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,201m., or 7,220.9 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.69 | 754.2 | 29.69 | 754.2 | 43.9 | 6.6 | ..... | NE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.83 | 757.7 | 29.89 | 759.1 | 37.0 | 2.8 | ..... | ENE | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.82 | 757.3 | 29.82 | 757.3 | 35.8 | 2.1 | ..... | NE | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.70 | 754.4 | 29.70 | 754.4 | 41.9 | 5.5 | 75 | ENE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.71 | 754.7 | 29.76 | 755.9 | 40.6 | 4.8 | 64 | E | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0.004 | 0.1 | Cloudy | H. v. d. Brink. |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer: Corrected for instru.n'tal error and temperature. Inches. | Barometer: Corrected for instru.n'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.28 | 769.0 | 30.33 | 770.4 | 34.5 | 1.4 | 40 | SSE | 5.4 | 2.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 30.26 | 769.2 | 30.32 | 770.2 | 33.3 | 0.7 | 52 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 30.28 | 769.0 | 30.43 | 772.9 | 34.0 | 1.1 | 45 | E | 2 | 1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.14 | 765.6 | 30.19 | 766.7 | 34.9 | 1.6 | 75 | SW | 27 | 12 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.20 | 767.1 | 30.39 | 772.0 | 69.4 | 15.2 | 76 | N | 7.4 | 3.3 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.71 | 729.1 | 29.74 | 755.3 | 69.4 | 15.2 | 49 | NNE | 7.4 | 3.3 | ..... | ..... | 8 | NNE | ..... | 0 | 0 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.00 | 762.1 | 30.09 | 764.3 | 59.0 | 15.0 | 70 | WSW | 1.3 | 0.6 | ..... | ..... | 10 | ..... | ..... | 0.299 | 7.6 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.45 | 748.0 | 29.81 | 757.2 | 67.0 | 18.9 | 60 | N | 8.7 | 3.9 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.33 | 770.3 | 30.40 | 772.1 | 60.4 | 15.8 | 75 | NNE | 13.0 | 5.8 | ..... | ..... | 3 | ..... | ..... | 0.134 | 3.4 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Sea or swell: Height scale 0–9 | Sea or swell: Direction from— | | | |
|---|---|---|---|---|---|
| Bartholomew Dias | | | | | A. G. da Silva Costa, Com'd't. |
| D. Fernando | | | | | A.M. de Sande, Com'd't. |
| India | | | | | A. D. Pedroso, Com'd't. |
| Mindello | | | | | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | 2 | S | 7 | S | Gloomy | A. J. de Mattos, Com'd't. |
| Rio Douro | | | | | | J. T. d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto de S. Jose de Bissao, Senegambia | 1 | ENE | 2 | ENE | D. clouds | A. Ferreira, 2d Lt. |
| Sá da Bandeira, St. Paul de Loando | 3 | WSW | 7 | WSW | D. clouds | F. Teixeira da Silva, Com'd't. L. Ribeiro de Costa, Com'd't. |
| Sado | | | | | | |
| Tejo, Macao, China | 1 | N | 0 | | Blue sky | J. M. T. Guimaraes, Com'd't. |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.74 | 755.3 | 30.18 | 766.6 | 30.9 | — 0.6 | 49 | E | 7 | 3 | ..... | ..... | 7c;ks | ..... | ..... | ..... | ..... | Solar corona | Astronomical Obs. |
| Wilna | 29.80 | 757.0 | 30.25 | 768.3 | 28.6 | — 1.9 | 61 | SW | 2 | 1 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 30.07 | 763.8 | 30.33 | 770.4 | 25.2 | — 3.8 | 60 | NNE | 9 | 4 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.25 | 768.4 | 30.27 | 768.8 | 27.9 | — 2.3 | 67 | WNW | 4 | 2 | ..... | ..... | 8n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.46 | 748.3 | 30.14 | 765.5 | 25.7 | — 3.5 | 52 | NNE | 9 | 4 | ..... | ..... | 2k;ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 30.10 | 764.5 | 30.17 | 766.3 | 34.9 | 1.6 | 42 | NNE | 4 | 2 | ..... | ..... | 2ks | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.12 | 765.1 | 30.14 | 765.6 | 31.6 | — 0.2 | 65 | NW | 7 | 3 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.44 | 747.8 | 30.04 | 762.9 | 14.7 | — 9.6 | 62 | N | 13 | 6 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.66 | 753.4 | 29.87 | 758.8 | 28.0 | — 2.2 | 55 | WNW | 34 | 15 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.17 | 766.4 | 30.19 | 766.9 | 14.7 | — 9.6 | 78 | N | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Ssellwerstow. |
| Tiflis | 28.42 | 721.8 | 29.82 | 757.5 | 55.0 | 12.8 | 31 | NW | 13 | 6 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 29.79 | 756.7 | 29.71 | 754.6 | 54.3 | 12.4 | 38 | WNW | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.17 | 741.0 | 29.66 | 753.4 | 28.4 | — 2.0 | 81 | E | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.45 | 748.9 | 29.73 | 755.1 | 27.5 | — 2.5 | 65 | ESE | 2 | 1 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.02 | 737.1 | 30.04 | 763.0 | 20.8 | — 6.2 | 61 | SE | 9 | 4 | ..... | ..... | 5cs | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Nukuss | 29.36 | 745.8 | 29.60 | 751.7 | 53.1 | 11.8 | 88 | SW | 7 | 3 | ..... | ..... | 10s;p | ..... | ..... | ..... | ..... | Raining | |
| Tashkend | 28.24 | 717.4 | 29.90 | 759.4 | 67.3 | 19.6 | 40 | SE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.88 | 759.0 | 30.42 | 772.6 | 26.4 | — 3.1 | 89 | SW | 2 | 1 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.96 | 761.0 | 30.26 | 768.7 | 30.9 | — 0.6 | 86 | W | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 30.24 | 768.2 | 30.39 | 771.8 | 36.9 | 2.7 | 44 | NW | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.90 | 759.5 | 30.00 | 762.0 | 22.1 | — 5.5 | 75 | NNE | 4 | 2 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | 29.96 | 760.9 | 30.04 | 763.1 | — 2.2 | —19.0 | 88 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455 m., or 1,492.7 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165.2 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.34 | 745.2 | 29.45 | 748.0 | 49.1 | 9.5 | 81 | SSE | 1.6 | 0.72 | ..... | ..... | 10 | ..... | ..... | 0.373 | 9.47 | Covered | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 29.59 | 751.5 | 29.65 | 753.0 | 51.8 | 11.0 | 88 | NW | 1.4 | 0.62 | ..... | 0 | 10 | ..... | ..... | 0.705 | 17.9 | Rainy | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.67 | 677.5 | ..... | ..... | 38.1 | 3.4 | 93 | N | 6.4 | 2.86 | ..... | 0 | 9 | ..... | ..... | 0.157 | 4.0 | Almost cov'd | Domingo Martin y Perez. |
| Madrid, Royal Osservatory | 27.39 | 695.6 | ..... | ..... | 57.9 | 14.4 | 58 | W | 8.0 | 1.33 | ..... | 0 | 9 | ..... | ..... | 0.028 | 0.7 | Almost cov'd | The Staff. |
| Murcia, Met. Obs'y | 29.45 | 748.0 | 29.60 | 751.9 | 57.9 | 14.4 | 72 | SW | 4.0 | 1.81 | ..... | 5 | 5 | NW | ..... | 0.134 | 3.40 | Raining | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.87 | 733.2 | 29.77 | 756.2 | 50.7 | 10.4 | 65 | NW | 4.3 | 1.9 | ..... | 0 | 10 | ..... | ..... | 0.012 | 0.3 | Misty. | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 30.09 | 764.2 | 30.15 | 765.8 | 72.8 | 22.7 | 84 | SE | 4.3 | 1.9 | ..... | 1cs | 0 | WNW | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.91 | 759.9 | 29.97 | 761.3 | 81.0 | 27.2 | 68 | SE | 8.3 | 3.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.70 | 754.5 | 29.80 | 757.0 | 58.6 | 14.8 | 70 | W | 13.8 | 6.2 | ..... | 0 | 10 | ..... | W | 0.071 | 1.8 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I. | 30.06 | 763.4 | 30.15 | 765.7 | 78.8 | 26.0 | 76 | E | 14.5 | 6.49 | ..... | 3k | 4k | E | E | 0.138 | 3.50 | Cloudy | Leonardo deTejeda, Ch'f Eng'r. |

Note.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.35 | 770 8 | 30.39 | 771.8 | 30.6 | — 0.8 | ..... | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.34 | 770.5 | 30.39 | 771.8 | 28.8 | — 1.8 | 64 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.44 | 773.3 | 30.50 | 774.6 | 32.7 | 0.4 | 61 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 30.26 | 768.7 | 30.44 | 773.2 | 28.6 | — 1.9 | 56 | NE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 30.26 | 768.6 | 30.32 | 770.1 | 29.5 | — 1.4 | 64 | NE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.39 | 771.8 | 30.46 | 773.7 | 27.3 | — 2.6 | 60 | ENE | 11.2 | 5.0 | ..... | ..... | 0 | ..... | NE | 0.00 | 0.01 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.10 | 713.7 | 29.54 | 750.4 | 47.5 | 8.6 | 84 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.020 | 0.5 | Covered..... | The Observatory. |
| Zurich | 27.93 | 709.3 | 29.60 | 751.9 | 42.1 | 5.6 | 86 | E | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | Covered..... | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —10.8 mm.; Thermometer, 0 Cent.; Relative Humidity, +24 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.03 | 762.7 | 49.3 | 9.6 | 83 | NNE | 17 | 7.5 | ..... | ..... | 10 | ..... | N | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.22 | 767.6 | 69.4 | 20.8 | ..... | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.84 | 757.8 | 67.3 | 19.6 | ..... | S | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.78 | 756.4 | 29.89 | 759.3 | 67.5 | 19.7 | 67 | W | ..... | ..... | 2 | ..... | 4ks | ..... | W | 0.021 | 0.53 | D. clouds..... | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.08 | 764.0 | 30.14 | 765.5 | 24.9 | — 3.9 | 66 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear..... | Hon. J. Ferguson. |
| Brockville, Ontario | 30.01 | 762.2 | 30.34 | 770.6 | 15 | — 9.4 | ..... | Calm | 0 | 0 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy..... | W. R. Bigg. |
| *Chatham, N B | 30.08 | 764.0 | 30.15 | 765.8 | 24 | — 4.4 | 76 | W | 6 | 2.7 | ..... | 5k | 0 | N | ..... | 0.09 | 2.3 | Fair..... | G. A. Blair. |
| Charlottetown, P. E. Island | 30.05 | 763.3 | 30.10 | 764.5 | 27 | — 2.8 | 81 | NW | 16 | 7.2 | ..... | 0 | 2ks | ..... | NW | 0.350 | 8.89 | Clearing..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 30.10 | 764.5 | 30.31 | 769.9 | 8.4 | —13.1 | 96 | W | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0.05 | 1.3 | Overcast..... | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 29.77 | 756.1 | 29.82 | 757.4 | 40.6 | 4.8 | 100 | SW | ..... | ..... | ..... | 4cs | 0 | ..... | ..... | 0 | 0 | Fair..... | W. H. Bevis. |
| *Father Point, Quebec | 30.23 | 767.8 | 30.25 | 768.3 | 17 | — 8.3 | 63 | W | 20 | 8.9 | ..... | 5k | 2ks | W | W | 0.04 | 1.0 | Fair..... | J. McWilliams. |
| Fredericton, N. B | 30.21 | 767.3 | 30.26 | 769.1 | 22.3 | — 5.4 | 81 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear..... | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.04 | 737.6 | 29.95 | 760.7 | 4 | —15.6 | 92 | S | 14 | 6.3 | ..... | 0 | 2ks | ..... | S | 0 | 0 | Fair..... | James Stewart. |
| Granton, Ontario | 28.89 | 733.8 | 30.05 | 763.3 | 27 | — 2.8 | ..... | E | ..... | ..... | 3 | ..... | 10n | ..... | ..... | Inap. | Inap. | Overcast..... | James Grant. |
| *Halifax, N. S | 29.98 | 761.5 | 30.13 | 765.3 | 36 | — 1.1 | 88 | NW | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0.170 | 4.32 | Clear..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.81 | 757.2 | 30.20 | 767.1 | 29.9 | — 1.2 | 78 | NE | ..... | ..... | 3 | 10cs | 0 | NE | ..... | 0.05 | 1.3 | Cloudy..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.91 | 759.7 | 30.28 | 769.1 | 21 | — 6.1 | 85 | N | 5 | 2.2 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Cloudy..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.98 | 761.5 | 30.02 | 762.5 | 32.2 | 0.1 | 87 | SW | 6 | 2.7 | ..... | 5k | 0 | SW | ..... | 0.34 | 8.6 | Fair..... | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 30.13 | 765.3 | 30.35 | 770.9 | 17 | — 8.3 | 78 | NW | 1 | 0.4 | ..... | ..... | Fog | ..... | ..... | 0.09 | 2.3 | Foggy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.47 | 748.5 | 30.24 | 768.1 | 8 | —13.3 | 85 | E | 6 | 2.7 | ..... | ..... | 10n | ..... | E | 0 | 0 | Cloudy..... | Rev. R. Mosley. |
| Peterboro, Ontario | 29.43 | 747.5 | 30.24 | 768.1 | 20.4 | — 6.4 | 77 | NE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.40 | 746.7 | 30.13 | 765.3 | 28 | — 2.2 | 88 | E | 13 | 5.8 | ..... | ..... | 10n | ..... | NE | 0 | 0 | Threatening | H. Morgan. |
| Port Hastings, N. S | 29.99 | 761.7 | 30.04 | 763.0 | 28.7 | — 1.8 | ..... | NW | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine..... | Peter Grant. |
| Port Stanley, Ontario | 29.38 | 746.2 | 30.06 | 763.5 | 27 | — 2.8 | 97 | E | 20 | 8.9 | ..... | ..... | 10n | ..... | E | 0.04 | 1.0 | Light snow.. | M. Payne. |
| *Quebec, Quebec | 29.98 | 761.5 | 30.33 | 770.4 | 14 | —10.0 | 78 | W | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.62 | 752.4 | 30.34 | 770.6 | — 4 | —20.0 | 83 | Calm | 0 | 0 | ..... | 5c | 0 | SW | ..... | 0 | 0 | Fair..... | W. H. McIntyre. |
| St. Andrews, N. B | 30.21 | 767.3 | 30.26 | 768.6 | 24 | — 4.4 | 75 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear..... | Dr. Gove. |
| St. John, N. B | 30.10 | 764.5 | 30.27 | 768.8 | 25.0 | — 3.9 | 74 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.37 | 746.0 | 30.13 | 765.3 | 22 | — 5.6 | 88 | E | 18 | 8.0 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy..... | K. Stewart. |
| Stayner, Ontario | 29.32 | 744.7 | 30.15 | 765.8 | 20 | — 6.7 | 91 | SE | 5 | 2.2 | ..... | ..... | 10n | ..... | SE | 0 | 0 | Cloudy..... | R. J. Cole. |
| Stratford, Ontario | 28.69 | 728.7 | 30.04 | 763.0 | 25 | — 3.9 | 92 | SE | 17.0 | 7.6 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Overcast..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.94 | 760.5 | 29.98 | 761.5 | 32 | 0.0 | 87 | NW | 9 | 4.0 | ..... | 0 | 5ks | ..... | NW | 0.38 | 9.7 | Fair..... | T. C. Hill. |
| *Toronto, Ontario | 29.78 | 756.4 | 30.19 | 766.8 | 29 | — 1.7 | 69 | E | 16 | 7.2 | ..... | ..... | 10n | ..... | Calm | 0 | 0 | Cloudy..... | Magnetic Observatory. |
| Windsor, N. S | 30.08 | 764.0 | 30.18 | 766.6 | 28.0 | — 2.2 | 88 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear..... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 40.0 | 4.4 | 100 | S | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.40 | 10.2 | Sleeting..... | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 30.13 | 765.3 | 30.38 | 771.6 | 24 | — 4.4 | 74 | SW | 2 | 0.9 | ..... | 8c | Haze | Calm | ..... | 0.01 | 0.3 | Hazy | |
| Alpena, Michigan | 29.43 | 747.5 | 30.12 | 765.0 | 20 | — 6.7 | 70 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Atlanta, Georgia | 28.82 | 732.0 | 29.95 | 760.7 | 58 | 14.4 | 87 | S | 11 | 4.9 | ..... | 8k | 2s | SW | S | 1.25 | 31.7 | Cloudy | |
| Atlantic City, New Jersey | 30.33 | 770.4 | 30.34 | 770.6 | 38 | 3.3 | 72 | E | 24 | 10.7 | ..... | 10c | 0 | E | ..... | 0 | 0 | Cloudy | |
| Augusta, Georgia | 29.91 | 759.7 | 30.08 | 764.0 | 59 | 15.0 | 94 | S | 1 | 0.4 | ..... | 5cs | 2s | S | S | 0.46 | 11.7 | Fair | |
| Baltimore, Maryland | 30.28 | 769.1 | 30.34 | 770.6 | 38 | 3.3 | 54 | E | 9 | 4.0 | ..... | ..... | 10s | ..... | E | 0 | 0 | Threatening | |
| Barnegat, New Jersey | 30.31 | 769.9 | 30.33 | 770.4 | 36 | 2.2 | 71 | E | 24 | 10.7 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Fair | |
| Bismarck, Dakota | 27.98 | 710.7 | 29.84 | 757.9 | 21 | — 6.1 | 85 | SW | 5 | 2.2 | ..... | ..... | 10s | ..... | NW | 0.02 | 0.5 | Cloudy | |
| Boerne, Texas | 28.49 | 723.6 | 29.80 | 756.9 | 53 | 11.7 | 67 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boise City, Idaho | 27.17 | 690.1 | 30.13 | 765.3 | 44 | 6.7 | 76 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Boston, Massachusetts | 30.24 | 768.1 | 30.40 | 772.1 | 31 | — 0.6 | 58 | W | 5 | 2.2 | ..... | 1c | 0 | W | ..... | 0.14 | 3.6 | Clear | |
| Brackettville, Texas | 28.82 | 732.0 | 29.84 | 757.9 | 60 | 15.6 | 77 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.98 | 736.1 | 30.07 | 763.8 | 12 | —11.1 | 100 | S | 6 | 2.7 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Brownsville, Texas | 29.82 | 757.4 | 29.87 | 758.7 | 75 | 23.9 | 86 | S | 2 | 0.9 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.41 | 747.0 | 30.14 | 765.5 | 29 | — 1.7 | 72 | NE | 9 | 4.0 | ..... | ..... | 10s;hz | ..... | NE;Calm | Inap. | Inap. | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 20 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 30.05 | 763.3 | 30.37 | 771.4 | 16.5 | — 8.6 | 58 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Cloudy | |
| Cairo, Illinois | 29.49 | 749.0 | 29.88 | 758.9 | 48 | 8.9 | 93 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.76 | 19.3 | Cloudy | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.28 | 642.1 | 30.08 | 764.0 | 46 | 7.8 | 47 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 39 | 3.9 | 25 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.57 | 700.3 | 30.14 | 765.5 | 32 | 0.0 | 79 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.17 | 766.3 | 30.18 | 766.6 | 54 | 12.2 | 93 | E | 5 | 2.2 | ..... | ..... | 10n | ..... | SW | 0.32 | 8.1 | Light rain | |
| Cape Henry, Virginia | 30.20 | 767.1 | 30.22 | 767.6 | 46 | 7.8 | 84 | SE | 16 | 7.2 | ..... | ..... | 10c | ..... | Calm | 07 | 0f | Cloudy | |
| Cape Lookout, N. Carolina | 30.16 | 766.1 | 30.18 | 766.6 | 58 | 14.4 | 100 | W | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.28 | 7.1 | Light rain | |
| Cape May, New Jersey | 30.28 | 769.1 | 30.30 | 769.6 | 40 | 4.4 | 82 | E | 18 | 8.0 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Castroville, Texas | 29.14 | 740.1 | 29.83 | 757.7 | 63 | 17.2 | 94 | NW | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Charleston, South Carolina | 30.05 | 763.3 | 30.11 | 764.8 | 64 | 17.8 | 89 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Cheyenne, Wyoming | 24.04 | 610.6 | 29.98 | 761.5 | 22 | — 5.6 | 72 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.13 | 759.9 | 29.84 | 757.9 | 33 | 0.6 | 100 | NE | 7 | 3.1 | ..... | ..... | 10n | ..... | Calm | 0.17 | 4.3 | Light snow | |
| Cincinnati, Ohio | 29.09 | 738.9 | 29.74 | 755.4 | 42 | 5.6 | 91 | SE | 8 | 3.6 | ..... | ..... | 10n | ..... | SE | 1.67 | 52.4 | Light rain | |
| Cleveland, Ohio | 29.18 | 741.2 | 29.92 | 760.0 | 31 | — 0.6 | 89 | E | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.06 | 1.5 | Heavy snow | |
| Coleman City, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Columbus, Ohio | 28.92 | 734.6 | 29.76 | 755.9 | 37 | 2.8 | 90 | E | 11 | 4.9 | ..... | ..... | 10n | ..... | E | 0.21 | 5.3 | Light rain | |
| Concho, Texas | 28.09 | 713.5 | 29.77 | 756.1 | 49 | 9.4 | 37 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.48 | 748.8 | 29.94 | 760.5 | 60 | 15.6 | 60 | NW | 9 | 4.0 | ..... | 2c;ok | 0 | SW;N | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.25 | 742.9 | 29.91 | 759.7 | 29 | — 1.7 | 89 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.30 | 7.6 | Cloudy | |
| Deadwood, Dakota | 25.30 | 642.6 | ..... | ..... | 28 | — 2.2 | 77 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | Inap | Inap. | Cloudy | |
| Decatur, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Denison, Texas | 29.21 | 741.9 | 30.00 | 762.0 | 54 | 12.2 | 55 | NW | 7 | 3.1 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.81 | 630.2 | 30.03 | 762.8 | 28 | — 2.2 | 60 | S | 4 | 1.8 | ..... | 2ck | 0 | W | ..... | 0 | 0 | Fair | |
| Des Moines, Iowa | 29.04 | 737.6 | 29.95 | 760.7 | 32 | 0.0 | 89 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.08 | 2.0 | Cloudy | |
| Detroit, Michigan | 29.22 | 742.2 | 29.91 | 759.7 | 28 | — 2.2 | 100 | E | 14 | 6.3 | ..... | ..... | 10n | ..... | SE | 0.08 | 2.0 | Heavy snow | |
| Dodge City, Kansas | 27.50 | 698.5 | 29.92 | 760.0 | 26 | — 3.3 | 75 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.24 | 742.7 | 29.97 | 761.2 | 27 | — 2.8 | 88 | NE | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.31 | 7.9 | Light snow | |
| Duluth, Minnesota | 29.34 | 745.2 | 30.06 | 763.5 | 21 | — 6.1 | 71 | NW | 3 | 1.3 | ..... | 2c | 2s | NW | Calm | 0 | 0 | Fair | |
| Eagle Pass, Texas | 29.16 | 740.7 | 29.89 | 759.2 | 59 | 15.0 | 54 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 30.21 | 767.3 | 30.28 | 769.1 | 26 | — 3.3 | 63 | W | 9 | 4.0 | ..... | 0 | Haze | ..... | Calm | 0.10 | 2.5 | Clear | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 73 | 22.8 | 85 | SE | ..... | ..... | 1 | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.31 | 668.3 | ..... | ..... | 51 | 10.6 | 33 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.28 | 743.7 | 30.01 | 762.2 | 36 | 2.2 | 53 | E | 11 | 4.9 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.44 | 747.8 | 30.14 | 765.5 | 18 | — 7.8 | 68 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Florence, Arizona | 28.65 | 727.7 | 30.25 | 768.3 | 55 | 12.8 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.82 | 706.6 | ..... | ..... | 22 | — 5.6 | 72 | W | 8 | 3.6 | ..... | 0 | 2s | ..... | W | Inap. | Inap. | Fair | |
| Fort Craig, New Mexico | 25.51 | 647.9 | 29.57 | 751.1 | 38 | 3.3 | 30 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.26 | 641.6 | 30.22 | 767.6 | 57 | 13.9 | 48 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.48 | 748.8 | 30.03 | 762.8 | 44 | 6.7 | 76 | NW | 6 | 2.7 | ..... | 5ck | 2s;sm | NW | NW | 0 | 0 | Smoky | |
| Fort Griffin, Texas | 28.76 | 730.5 | 30.05 | 763.3 | 47 | 8.3 | 55 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.38 | 695.4 | ..... | ..... | 27 | — 2.8 | 77 | S | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort McKavett, Texas | 27.77 | 705.4 | 29.68 | 753.9 | 54 | 12.2 | 43 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.83 | 732.3 | 29.96 | 761.0 | 44 | 6.7 | 68 | N | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Stevenson, Dakota | 27.94 | 709.7 | ..... | ..... | 21 | — 6.1 | 85 | SW | 5 | 2.2 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Fredericksburg, Texas | 28.25 | 717.5 | 29.77 | 756.1 | 65 | 18.3 | 49 | N | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 29.88 | 758.9 | 29.92 | 760.0 | 70 | 21.1 | 95 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Graham, Texas | 28.98 | 736.1 | 30.05 | 763.3 | 48 | 8.9 | 70 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.26 | 743.2 | 29.94 | 760.5 | 29 | — 1.7 | 89 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.16 | 4.1 | Heavy snow | |
| Indianapolis, Indiana | 29.04 | 735.1 | 29.72 | 754.9 | 40 | 4.4 | 73 | E | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.21 | 5.3 | Cloudy | |
| Indianola, Texas | 29.90 | 759.4 | 29.92 | 760.0 | 71 | 21.7 | 90 | S | 7 | 3.1 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 28.91 | 734.3 | 30.04 | 763.0 | 55 | 12.8 | 28 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.11 | 764.8 | 30.13 | 765.3 | 69 | 20.6 | 80 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Keokuk, Iowa | 29.22 | 742.2 | 29.85 | 758.2 | 35 | 1.7 | 97 | N | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0.04 | 1.0 | Dense fog | |
| Key West, Florida | 30.13 | 765.3 | 30.17 | 766.3 | 74 | 23.3 | 86 | SE | 9 | 4.0 | ..... | 3c;k | 0 | Calm;SE | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 30.16 | 766.1 | 30.18 | 766.6 | 47 | 8.3 | 92 | E | 9 | 4.0 | ..... | ..... | 10n | ..... | E | 0.04 | 1.0 | Light rain | |
| Knoxville, Tennessee | 28.93 | 734.8 | 29.93 | 760.2 | 52 | 11.1 | 97 | NW | 6 | 2.7 | ..... | ..... | 10n | ..... | SW | 0.30 | 7.6 | Heavy rain | |
| La Crosse, Wisconsin | 29.22 | 742.2 | 29.99 | 761.7 | 27 | — 2.8 | 76 | NE | 1 | 0.4 | ..... | 10k | 0 | NW | ..... | 0.19 | 4.8 | Cloudy | |
| La Mesilla, New Mexico | 26.17 | 664.7 | 30.32 | 770.1 | 40 | 4.4 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.45 | 748.0 | 29.78 | 756.4 | 71 | 21.7 | 95 | SW | 1 | 0.4 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.11 | 739.4 | 29.99 | 761.7 | 30 | — 1.1 | 78 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Los Angeles, California | 29.85 | 758.2 | 30.20 | 767.1 | 46.5 | 8.1 | 88 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Louisville, Kentucky | 29.20 | 741.7 | 29.76 | 755.9 | 45 | 7.2 | 92 | S | 4 | 1.8 | ..... | ..... | 10n | ..... | SW | 1.52 | 38.6 | Light rain | |
| Lynchburg, Virginia | 29.48 | 748.8 | 30.18 | 766.6 | 45 | 7.2 | 76 | NE | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.06 | 1.5 | Light rain | |
| Madison, Wisconsin | 28.91 | 734.3 | 29.94 | 760.5 | 26 | — 3.3 | 88 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.40 | 10.2 | Light snow | |
| Marquette, Michigan | 29.37 | 746.0 | 30.11 | 764.8 | 22 | — 5.6 | 72 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Mason, Texas | 28.36 | 720.3 | 30.11 | 764.8 | 55 | 12.8 | 50 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.50 | 749.2 | 29.82 | 757.4 | 57 | 13.9 | 93 | NW | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 1.24 | 31.5 | Cloudy | |
| Milwaukee, Wisconsin | 29.17 | 740 9 | 29.92 | 760.0 | 29 | — 1.7 | 89 | N | 13 | 5.8 | ..... | ..... | 10n | ..... | Calm | 0.10 | 2.5 | Heavy snow | |
| Mobile, Alabama | 29.97 | 761.2 | 30.01 | 762.2 | 66.5 | 19.2 | 86 | S | 14 | 6.3 | ..... | 0 | 5s | ..... | SW | 4.20 | 106.7 | Fair | |
| Montgomery, Alabama | 29 77 | 756.1 | 30.01 | 762.2 | 59 | 15.0 | 87 | SE | 3 | 1.3 | ..... | 5k | 2ks | SW | SW | 0.10 | 2.5 | Fair | |
| Morgantown, West Virginia | 28.84 | 732.5 | 29.89 | 759.2 | 46 | 7.8 | 69 | E | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Mt. Washington, N. H. | 23.69 | 608.6 | 30.05 | 763.3 | 2 | —16.7 | 58 | NW | 27 | 12.1 | ..... | 0 | 2s | ..... | NW | 0.12 | 3.0 | Clear | |
| Nashville, Tennessee | 29.32 | 744.7 | 29.84 | 757.9 | 57 | 13.9 | 87 | W | 5 | 2.2 | ..... | ..... | 10ks | ..... | W | 0.68 | 17.3 | Cloudy | |
| New Haven, Connecticut | 30.26 | 768.6 | 30.38 | 771.6 | 32 | 0.0 | 64 | NE | 9 | 4.0 | ..... | 2c | 0 | Calm | ..... | 0.02 | 0.5 | Clear | |
| New London, Connecticut | 30.36 | 771.1 | 30.42 | 772.6 | 36 | 2.2 | 53 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| New Orleans, Louisiana | 29.92 | 760.0 | 29.98 | 761.5 | 69 | 20.6 | 90 | S | 16 | 7.2 | ..... | 0 | 8s | ..... | S | 0.27 | 6.9 | Fair | |
| Newport, Rhode Island | 30.34 | 770.6 | 30.40 | 772.1 | 34 | 1.1 | 52 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| New York, New York | 30.19 | 766.8 | 30.38 | 771.6 | 35 | 1.7 | 52 | NE | 16 | 7.2 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Norfolk, Virginia | 30.15 | 765.8 | 30.21 | 767.3 | 50 | 10.0 | 86 | E | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Threatening | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Up'ei 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.12 | 688.8 | 29.86 | 758.2 | 20 | — 6.7 | 85 | NW | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.88 | 758.9 | 29.92 | 760.0 | 41.2 | 5.1 | 91 | S | 8 | 3.6 | | | 10n | | | 0.86 | 8.9 | Light rain | |
| Omaha, Nebraska | 28.83 | 732.3 | 29.98 | 761.5 | 27 | — 2.8 | 88 | NW | 17 | 7.6 | | | 10s | | Calm | 0.06 | 1.5 | Cloudy | |
| Oswego, New York | 29.98 | 761.5 | 30.32 | 770.1 | 31 | — 0.6 | 89 | S | 8 | 3.6 | | | 10s | | | 0.02 | 0.5 | Cloudy | |
| Pembina, Dakota | 29.09 | 738.9 | 30.02 | 762.5 | — 5 | —20.6 | 100 | S | 10 | 4.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Philadelphia, Pa | 30.30 | 769.6 | 30.36 | 771.1 | 33 | 0.6 | 70 | E | 15 | 6.7 | | 10k | 0 | NW | | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.94 | 735.1 | 30.79 | 782.0 | 50 | 10.0 | 52 | E | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.54 | 445.5 | 29.75 | 755.6 | 3 | —16.1 | 46 | NW | 50 | 22.4 | | 5k | 2s | NW | Calm | 0.18 | 4.6 | Cloudy | |
| Ploche, Nevada | 24.09 | 611.9 | 29.86 | 758.4 | 39 | 3.9 | 55 | S | 4 | 1.8 | | 0 | 2s | | Calm | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 29.10 | 739.1 | 29 92 | 760.0 | 39 | 3.8 | 91 | E | 10 | 4.5 | | | 10n | | SW | 0.03 | 0.8 | Light rain | |
| Port Huron, Michigan | 29.28 | 743.7 | 29.97 | 761.2 | 28 | — 2.2 | 100 | E | 13 | 5.8 | | | 10n | | Calm | Inap. | Inap. | Cloudy | |
| Portland, Maine | 30.30 | 769.6 | 29.95 | 770.9 | 28 | — 2.2 | 66 | Calm | 0 | 0 | | 0 | Haze | | | 0.02 | 0.5 | Clear | |
| Portland, Oregon | 29.94 | 760.5 | 30.04 | 763.0 | 43.5 | 6.4 | 92 | S | 10 | 4.5 | | | 10n | | Calm | 0.43 | 10.9 | Light rain | |
| Prescott, Arizona | 24.82 | 630.4 | 30.18 | 766.6 | 33 | 0.6 | 61 | SW | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.16 | 740.7 | 29.97 | 761.2 | 58 | 14.4 | 74 | SE | 10 | 4.5 | | 0 | 8s | | SE | 0 | 0 | Cloudy | |
| Punta Rassa, Florida | 30.18 | 766.6 | 30.20 | 767.1 | 68 | 20.1 | 84 | E | 8 | 3.6 | | 2cs | 0 | Calm | | 0 | 0 | Clear | |
| Red Bluff, California | 29.82 | 757.4 | 30.19 | 766.8 | 51 | 10.6 | 79 | S | 10 | 4.5 | | | 10s | | Calm | 0.07 | 1.8 | Cloudy | |
| Rio Grande City, Texas | 29.67 | 753.6 | 29.88 | 758.9 | 72 | 22.2 | 85 | SE | 8 | 3.6 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Rochester, New York | 29.59 | 751.6 | 30.26 | 768.8 | 26 | — 3.3 | 88 | SE | 7 | 3.1 | | | 10s | | Calm | Inap. | Inap. | Cloudy | |
| Roseburg, Oregon | 29.53 | 750.0 | 30.11 | 764.8 | 43.0 | 6.1 | 87 | SW | 4 | 1.8 | | Haze | 0s | | Calm | 0.02 | 0.5 | Fair | |
| Sacramento, California | 30.13 | 765.3 | 30.21 | 767.3 | 52.4 | 11.3 | 90 | Calm | 0 | 0 | | | 10n | | | 0.22 | 5.6 | Light rain | |
| St. Louis, Missouri | 29.32 | 744.7 | 29.90 | 759.4 | 40 | 4.4 | 91 | NW | 12 | 5.4 | | | 10s | | Calm | 0.15 | 3.8 | Cloudy | |
| St. Marks, Florida | 30.06 | 763.5 | 30.07 | 763.8 | 66 | 18.9 | 84 | S | 12 | 5.4 | | | 10s | | S | 0.18 | 4.6 | Cloudy | |
| St. Paul, Minnesota | 29.13 | 739.9 | 30.00 | 762.0 | 25 | — 3.9 | 75 | N | 5 | 2.2 | | | 10n | | Calm | 0.12 | 3.0 | Light snow | |
| Salt Lake City, Utah | 25.71 | 653.0 | 30.04 | 763.0 | 40 | 4.4 | 56 | Calm | 0 | 0 | | | 10ks | | W | 0 | 0 | Cloudy | |
| San Antonio, Texas | 29.20 | 741.7 | 29.77 | 756.1 | 66 | 18.9 | 95 | Calm | 0 | 0 | | | Fog | | Calm | Inap. | Inap. | Foggy | |
| San Diego, California | 30.14 | 765.5 | 30.22 | 767.6 | 47 | 8.3 | 92 | NE | 8 | 3.6 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Sandusky, Ohio | 29.16 | 740.4 | 29.84 | 757.9 | 33 | 0.6 | 89 | E | 32 | 14.3 | | | 10n | | Calm | 0.15 | 3.8 | Light rain | |
| Sandy Hook, New Jersey | 30.31 | 769.9 | 30.34 | 770.6 | 33 | 0.6 | 70 | NE | 23 | 10.3 | | 2c | 0 | W | | 0 | 0 | Clear | |
| San Francisco, California | 30.12 | 765.0 | 30.18 | 766.6 | 52.7 | 11.5 | 86 | SE | 10 | 4.5 | | | 10n | | Calm | 0.24 | 6.1 | Light rain | |
| Santa Fé, New Mexico | 23.28 | 591.3 | 29.82 | 757.4 | 35 | 1.7 | 53 | NW | 10 | 4.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Savannah, Georgia | 30.02 | 762.5 | 30.12 | 765.0 | 66 | 18.9 | 84 | SW | 8 | 3.6 | | 5k | 2s | SW | SW | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.66 | 753.1 | 29.86 | 758.4 | 70 | 21.1 | 85 | SW | 3 | 1.3 | | Haze | 2s | Calm | W | 0 | 0 | Fair | |
| Silver City, New Mexico | 24.36 | 618.7 | 30.67 | 779.0 | 38 | 3.3 | 63 | NW | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.13 | 765.3 | 30.16 | 766.1 | 61 | 16.1 | 100 | SW | 8 | 3.6 | | | 10s;fg | | SW;Calm | Inap. | Inap. | Foggy | |
| Springfield, Massachusetts | 30.26 | 768.6 | 30.40 | 772.1 | 33 | 0.6 | 61 | SW | 2 | 0.9 | | 5ck | Sm'e | W | | 0.01 | 0.3 | Fair | |
| Stockton, Texas | 27.01 | 686.0 | 30.01 | 762.2 | 49 | 9.4 | 44 | S | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.08 | 764.0 | 30.14 | 765.5 | 31 | — 0.6 | 58 | NE | 8 | 3.6 | | 5cs | 0 | NE | | Inap. | Inap. | Fair | |
| Toledo, Ohio | 29.16 | 740.4 | 29.85 | 758.2 | 33 | 0.6 | 89 | E | 23 | 10.3 | | | 10n | | Calm | 0.08 | 2.0 | Sleeting | |
| Tucson, Arizona | 27.65 | 702.3 | 30.20 | 767.1 | 48 | 8.9 | 42 | S | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.63 | 752.6 | 30.13 | 765.3 | 45.0 | 7.2 | 61 | W | 10 | 4.5 | | 0 | 0 | | | 0.01 | 0.3 | Clear | |
| Unalashka, Aleutian Islands | | | | | 32 | 0.0 | 79 | Calm | | | 0 | 0 | 0 | | | 0 | 0 | Clear | |
| Uvalde, Texas | 29.04 | 737.6 | 29.85 | 758.2 | 56 | 13.3 | 69 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.67 | 753.6 | 29.92 | 760.0 | 70 | 21.1 | 85 | SW | 6 | 2.7 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Virginia City, Montana | 24.17 | 613.9 | 29.65 | 753.1 | 22 | — 5.6 | 72 | Calm | 0 | 0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Visalia, California | 29.82 | 757.4 | 30.20 | 767.1 | 51.7 | 10.9 | 76 | NW | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Washington, D. C. | 30.18 | 766.6 | 30.30 | 769.6 | 37 | 2.8 | 53 | NE | 10 | 4.5 | | | 10ks | | SE | Inap. | Inap. | Cloudy | |
| Wickenburg, Arizona | | | | | 42 | 5.6 | 58 | NW | | | 1 | 2cs | 0 | Calm | | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 30.06 | 763.5 | 30.13 | 765.3 | 63 | 17.2 | 89 | Calm | 0 | 0 | | | 10s | | SW | 0.02 | 0.5 | Cloudy | |
| Winnemucca, Nevada | 25.68 | 652.3 | 30.04 | 763.0 | 38 | 3.3 | 72 | SW | 14 | 6.3 | | 0 | 8ks | | SW | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 30.35 | 770.9 | 30.39 | 771.9 | 34 | 1.1 | 61 | N | 5 | 2.2 | | Haze | Haze | Calm | Calm | 0.02 | 0.5 | Hazy | |
| Yankton, Dakota | 28.78 | 731.0 | 30.15 | 765.8 | 20 | — 6.7 | 85 | NW | 12 | 5.4 | | | 10s | | Calm | 0.44 | 11.2 | Cloudy | |
| Yuma, Arizona | 29.93 | 760.2 | 30.10 | 764.5 | 54 | 12.2 | 74 | W | 1 | 0 4 | | 0 | 0 | | | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.43 | 722.1 | 29.86 | 758.4 | 43 | 6.1 | 50 | | | | | | | | | | | | J. B. Gordon. |
| Havana, Cuba, W. I | 30.10 | 764.5 | 30.15 | 765.8 | 73 | 22.8 | 81 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | | | | | | | | | | | | | | | | | | | James Gall. |
| Medellin, Colombia, S. A | 25.28 | 642.1 | | | 62.8 | 17.1 | 87 | Calm | 0 | 0 | | 2ck | 1ks | | | 0.31 | 7.9 | | Thomas Herran. |
| Nassau, W. I | 30.02 | 762.5 | 30.10 | 764.5 | 79 | 26.1 | | E | 10 | 4.5 | | | | | | 0 | 0 | Fair | W. H. W. Jones. |
| Paramaribo, D. Guiana, S.A | 30.03 | 762.8 | 30.03 | 762.8 | 81 | 27.2 | 83 | E | | | 2 | 5ck | 4s | E | | 0 | 0 | Fair | C. J. Hering. |
| Santiago de Cuba, W. I | | | | | | | | | | | | | | | | | | | Robert Mason. |
| St. Thomas, W. I. | | | | | | | | | | | | | | | | | | | G. O. Gellich. |
| York Factory, B. A | | | | | | | | | | | | | | | | | | | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,181.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Grimm, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,110.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,8.1 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.600 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.13 | 765.3 | 63 | 11.7 | 50 | 10.0 | 100 | ESE | 4 | 1.8 | .... | ..... | 10 | ..... | SE | 0.13 | 3.3 | ..... | ..... | Raining | |
| Navy Yard, Pensacola, Fla. | 30.15 | 765.8 | 65 | 18.3 | 65 | 18.3 | 94 | SW | 14 | 6.3 | .... | ..... | 2 | ..... | SE | 0.84 | 21.3 | ..... | ..... | Fair | |
| Navy Yard, Portsmouth, N.H | 30.36 | 771.1 | 65 | 18.3 | 25 | — 3.9 | 75 | W | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Naval Hospital, Yokohama, Japan....*... | 29.88‡ | 758.9‡ | ..... | ..... | 41.2 | 5.1 | 53 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear. | |
| Adams, Panama .....*... | 30.02 | 762.5 | 78 | 25.6 | 77 | 25.0 | 95 | NW | ..... | ..... | 1-2 | ..... | 2 | ..... | N; W | ..... | ..... | ..... | ..... | Clear | |
| Alaska, San Francisco, Cal..... | 30.18‡ | 766.6‡ | 50 | 10.0 | 50 | 10.0 | 100 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.225 | 5.72 | Smooth | ..... | Raining | |
| Alliance, Leghorn, Italy..... | 29.60‡ | 751.8‡ | ..... | ..... | 59 | 15.0 | 70 | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant | |
| Ashuelot, Hong-Kong, China. ..*.. | 30.16‡ | 766.1‡ | ..... | ..... | 61 | 16.1 | 55 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Overcast | |
| Canonicus, New Orleans, La.....*... | 29.98 | 761.5 | 52 | 11.1 | 69 | 20.6 | 100 | SE | ..... | .... | 4 | ..... | 5 | ..... | SE | ..... | ..... | ..... | ..... | Fair | |
| Colorado, New York, N. Y..... | 30.32 | 770.1 | 39 | 3.9 | 36 | 2.2 | 61 | NE | 5 | 2.2 | ..... | ..... | 10? | ..... | ..... | 0 | 0 | ..... | ..... | Clear? | |
| Constitution Lisbon, Portugal..... | 29.80‡ | 756.9‡ | ..... | ..... | 60 | 15.6 | 88 | N | ..... | ..... | 3 | ..... | 3 | ..... | NNE | ..... | ..... | ..... | ..... | Clear | |
| Despatch, Naples, Italy..... | 29.62‡ | 752.3‡ | ..... | ..... | 64 | 17.8 | 58 | SSE | ..... | ..... | 3 | ..... | 5 | ..... | S | ..... | ..... | Smooth | ..... | Fair | |
| Franklin, Norfolk, Va.....*... | 30.32 | 770.1 | 67 | 19.4 | 50 | 10.0 | 100 | E | 8 | 3.6 | ..... | ..... | 10 | ..... | E | 0.1 | 3. | ..... | ..... | Overcast | |
| Gettysburg, Genoa, Italy ..... | 29.71‡ | 754.6‡ | ..... | ..... | 62 | 16.7 | 94 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | 0.20 | 5.1 | ..... | ..... | Fair | |
| Hartford, Montevideo, Uruguay*... | 30.08‡ | 764.0‡ | ..... | ..... | 72 | 22.2 | 76 | NE | ..... | ..... | 3 | ..... | 8 | ..... | NE | 0 | 0 | ..... | ..... | Cloudy | |
| Lackawana, S. 8° 22′, W. 79° 30′....*... | 29.80‡ | 756.9‡ | ..... | ..... | 70 | 21.1 | 95 | ESE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | ..... | Foggy | |
| Michigan, Erie, Pa.....†... | 29.99 | 761.7 | ..... | ..... | 35 | 1.7 | 80 | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast | |
| Monocacy, Shanghai, China.....*.. | 30.17‡ | 766.3‡ | ..... | ..... | 53 | 11.7 | 48 | NNW | ..... | ..... | 3-4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Monongahela Yokohama, Japan ....*.. | 29.90‡ | 759.4‡ | ..... | ..... | 46 | 7.8 | 62 | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds | |
| New Hampshire, Port Royal, S. C.....*... | 30.26 | 768.6 | 65 | 18.3 | 63 | 17.2 | 89 | S | 10 | 4.5 | ..... | ..... | 8 | ..... | S | 0 | 0 | ..... | ..... | Cloudy | |
| Onward, Callao, Peru.....†*.. | 30.05 | 763.3 | ..... | ..... | 66 | 18.9 | 94 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Foggy | |
| Palos, Tientsin, China.....*... | 30.30 | 769.6 | 39 | 3.9 | 39 | 3.9 | 38 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 44 | 6.7 | 76 | N | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Fair | |
| Pensacola, Valparaiso, Chili..... | 30.02‡ | 762.5‡ | ..... | ..... | 69 | 20.6 | 65 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Plymouth, N. 30° 46′, W. 59° 35′..... | 30.44‡ | 773.2‡ | ..... | ..... | 66 | 18.9 | 89 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Powhatan, N. 24° 11′, W. 66° 48′..... | 30.22‡ | 767.6‡ | ..... | ..... | 72 | 22.2 | 76 | ENE | ..... | ..... | 5 | ..... | 2 | ..... | ENE | 0 | 0 | Long | SE | Clear | |
| Quinnebaug, N. 36° 34′, W. 2° 6′..... | 29.65‡ | 753.1‡ | ..... | ..... | 60 | 15.6 | 82 | W | ..... | ..... | 6 | ..... | 2 | ..... | W | ..... | ..... | Rough | ENE | Clear. | |
| Ranger. N. 25° 19′ 16″, E. 119° 54′ 06″*. | 30.18‡ | 766.6‡ | ..... | ..... | 59 | 15.0 | 76 | NNE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Rough | W | Fair | |
| Richmond. N. 20° 18′, E. 38° 45′..... | 29.93‡ | 760.2‡ | ..... | ..... | 84 | 28.9 | 47 | SSE | ..... | ..... | 0-1 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear | |
| Rio Bravo, Brownsville, Texas..... | 29.85 | 758.2 | 73 | 22.8 | 72 | 22.2 | 100 | SE | ..... | ..... | 1 | ..... | 10 | ..... | S | 0 | 0 | Smooth | ..... | Clear | |
| Santee, Annapolis, Md..... | 30.30‡ | 769.6‡ | ..... | ..... | 37 | 2.8 | 62 | E | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy | |
| Saratoga, Hampton Roads, Va..... | 30.21‡ | 767.3‡ | ..... | ..... | 47 | 8.3 | 92 | E | ..... | ..... | 5 | ..... | 8? | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy | |
| St. Louis, League Island, Pa..... | 30.20 | 767.1 | 55 | 12.8 | 39 | 3.9 | 73 | NE | 10 | 4.5 | ..... | ..... | 8 | ..... | NNE | 0 | 0 | ..... | ..... | Clear? | |
| Supply, Brooklyn, N. Y..... | 30.39‡ | 771.9‡ | ..... | ..... | 36 | 2.2 | 70 | E | ..... | ..... | 3 | ..... | 2 | ..... | E | ..... | ..... | ..... | ..... | Cloudy | |
| Trenton, Naples, Italy.....*... | 29.62‡ | 752.3‡ | ..... | ..... | 67 | 19.4 | 60 | S | ..... | ..... | 4 | ..... | 8 | ..... | SSE | 0 | 0 | ..... | ..... | Clear | |
| Tuscarora, Chipequa Bay, Mexico.. | 29.99‡ | 761.7‡ | ..... | ..... | 76 | 24.4 | 82 | Calm | ..... | ..... | 0 | ..... | 10k | ..... | Calm | 0 | 0 | Mod'ate | S. | Cloudy | |
| Wabash, Boston, Mass..... | 30.43‡ | 772.9‡ | ..... | ..... | 30 | — 1.1 | 89 | W | 4 | 1.8 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Smooth | ..... | Overcast | |
| Wyoming, Alexandria, Egypt....*... | 29.97‡ | 761.2‡ | ..... | ..... | 65 | 18.3 | 94 | NNW | ..... | ..... | 1-2 | ..... | 2 | ..... | NW | ..... | ..... | ..... | ..... | Hazy | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Smooth | ..... | Clear | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Colima, N. 31° 35', W. 119° 22'.† | | 30.24‡ | 768.1‡ | 62 | 16.7 | | WNW | | | 3 | | 4 | | Calm | | Mod'ate | NW | D. Clouds | Capt. Whitebury |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Granada, Capt. Austin, N. 23° 08', W. 106° 36'...† | | 30.20‡ | 767.1‡ | 70 | 21.1 | | Var. | | | 1 | | 0 | | | | | | Hazy | Capt. A. Fuller. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |
| S. S. Zealandia, N. 27° 20', W. 146° 08' | | 30.24‡ | 768.1‡ | | | | SW | | | 2 | | | | SW;W | | Long mod'ate | S | Showery | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; and no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WHITE STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
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| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

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| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, Capt. L. Meyer, N. 31° 44', E. 138° 36'.... | | 30.10‡ | 764.6‡ | 60 | 15.6 | 55 | NW | | | 4 | | k | | W | 0 | Mod'ate | WNW | Misty | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 22° 17', E. 114° 10'.....† | | 30.16‡ | 766.1‡ | | | | Var. | | | 2 | | s | | Var. | 0 | | | | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, N. 37° 33', W. 127° 26'.... | | 30.18‡ | 766.6‡ | 53 | 11.7 | 100 | S | | | 3 | | 4 | | S | | 2 | W | Misty | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 h. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

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| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andreesen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 49° 20', W. 9° 26' | | 29.86‡ | 758.2‡ | | | | NNE | | | 5 | | | | NNE | | Long | NNE | Cloudy | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 51° 11′, W. 15° 59′ | | 30.11‡ | 764.8‡ | 51 | 10.6 | | N | | | 6 | | 5 | | NW | Mod'ate | Smooth | | Hazy | Captain Sargent. Wm. Shackford, Chief Officer. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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**ALLAN LINE MARINE SERIES.**

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| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES.** (Miscellaneous.)

Furnished by the coöperation of the Observer named.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, N. 38° 52′, W. 73° 45′ | | 30.19‡ | 766.8‡ | 46 | 7.8 | 77 | ENE | 14 | 6.3 | | | 10d | | ESE | 0 | Cross | S;E | Cloudy | Capt. James Jorgensen. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

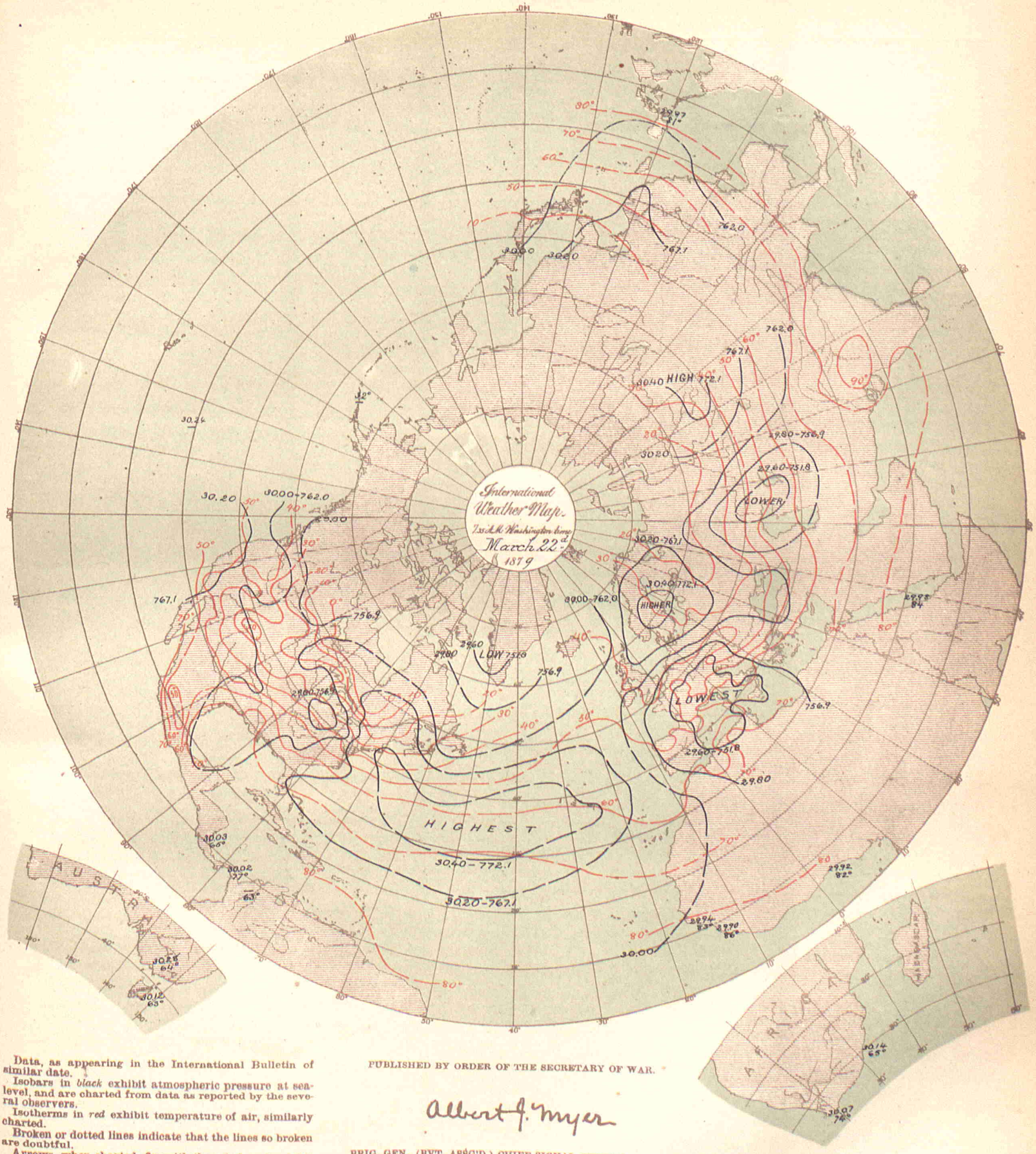
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASS'G'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 23, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 30.10 | 764.5 | 60.1 | 15.6 | 81 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.512 | 13.0 | Covered | |
| Nemours | ..... | ..... | 29.74 | 755.4 | 58.6 | 14.8 | 87 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.276 | 7.0 | Raining | Kesxuche. |
| Algiers | ..... | ..... | 29.68 | 761.2 | 56.1 | 13.4 | 65 | SW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.075 | 1.9 | Raining | Tourillere. |
| La Calle | ..... | ..... | 29.64 | 760.3 | 61.6 | 16.4 | 74 | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.028 | 0.7 | Very cloudy | Foufrede. |
| Tunis | ..... | ..... | 29.63 | 760.0 | 68.5 | 20.3 | 47 | E | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.087 | 2.2 | Very cloudy | Jacques. |
| Sfax | ..... | ..... | 29.69 | 754.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 29.78 | 756.3 | 60.9 | 10.5 | 70 | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.169 | 4.3 | Raining | Herbin. |
| Tebessa | ..... | ..... | 29.68 | 753.9 | 65.8 | 18.8 | 15 | W | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0.016 | 0.4 | Fair | Watrin. |
| Geriville | ..... | ..... | 29.73 | 755.1 | 54.1 | 12.3 | 100 | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Brugniaux. |
| Laghouat | ..... | ..... | 29.78 | 756.3 | 66.6 | 19.2 | 19 | SW | ..... | ..... | 7 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Bertrand. |
| Biskra | ..... | ..... | 29.69 | 754.0 | 71.2 | 21.8 | 33 | NW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE—In the originals the amount of cloudiness is given by the scale 0—4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.04 | 737.7 | 29.60 | 751.9 | 41.0 | 5.0 | 92 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.303 | 7.7 | Raining | Prof. Ivan Stosir. |
| Oracow, I. R. Observatory | 29.10 | 739.0 | 29.89 | 759.3 | 31.5 | — 0.3 | 98 | ENE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.016 | 0.4 | Snowy | Dr. Wierzbiski |
| Eperies | 28.86 | 733.1 | 29.78 | 756.3 | 33.1 | 0.6 | ..... | N | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.315 | 8.00 | ..... | Julius Mikolik. |
| Gratz | 28.87 | 720.6 | 29.65 | 753.0 | 37.5 | 3.2 | 88 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.094 | 2.4 | ..... | Andreas Rospini. |
| Hermannstadt | 28.21 | 716.6 | 29.64 | 752.8 | 50.2 | 10.1 | 71 | SE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. A. Gottschling. |
| Kremsmünster | 28.24 | 717.4 | 29.62 | 752.4 | 33.8 | 1.0 | 94 | E | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner. |
| Lemberg | 28.85 | 732.9 | 29.89 | 759.3 | 28.8 | — 1.8 | 100 | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Dr. T. Stanecki. |
| Pola | 29.39 | 746.6 | 29.60 | 749.4 | 57.6 | 14.2 | 79 | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.130 | 3.3 | ..... | I.R.Hydrographic Office. |
| Szathmar | 29.26 | 743.3 | 29.73 | 755.1 | 48.6 | 9.2 | 95 | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.236 | 6.0 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 29.43 | 747.4 | 29.53 | 750.0 | 54.7 | 12.6 | 87 | Calm | ..... | ..... | 0 | ..... | 4 | ..... | ..... | 2.976 | 75.6 | ..... | P. Busin. |
| Vienna | 28.98 | 736.2 | 29.73 | 755.1 | 32.4 | 0.2 | 96 | NNE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.087 | 2.3 | Rain & snow | I. R. Central Met. Ob'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | 29.55 | 750.6 | 29.76 | 755.9 | 35.2 | 1.8 | 65 | ENE | ..... | ..... | 6 | ..... | 10 | ..... | ENE | 0 | 0 | ..... | Royal Observatory |
| Furnes | 29.79 | 756.6 | 29.81 | 757.2 | 38.7 | 3.7 | 64 | ENE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae. |
| Maeseyck | 29.69 | 754.2 | 29.82 | 757.4 | 36.0 | 2.2 | 71 | E | ..... | ..... | 8 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:9, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instru'tal error and temperature. Inches. | Barometer. Corrected for instru'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.20 | 767.1 | 30.30 | 769.6 | 35.5 | 1.9 | ..... | SE | 19 | 8.5 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | D. clouds..... | W. Boswell. |
| Ardrossan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.10 | 764.5 | 38.2 | 3.4 | ..... | ENE | 15 | 6.7 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.00 | 762.0 | 39.6 | 4.2 | ..... | ENE | 34 | 15.2 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.97 | 761.2 | 39.0 | 3.9 | ..... | E | 54 | 24.1 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Squally..... | Thomas Mackereth. |
| Bradford, Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.07 | 1.8 | ..... | J. McClandsborough. |
| Bridgetown, (Barbados) | 29.98 | 761.5 | 30.01 | 762.2 | 82.0 | 27.8 | ..... | E | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | Gloomy..... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.91 | 759.7 | 39.0 | 3.9 | ..... | ENE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Snowy..... | H. Todd. [O. |
| Cardington | ..... | ..... | 29.87 | 758.7 | 37.0 | 2.8 | ..... | NE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.. | John McLaren. |
| Chatham, School M. E. | 29.72 | 754.9 | 29.86 | 758.4 | 36.2 | 2.3 | ..... | NE | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Corpl. Daly, R. E. |
| Dartmoor | 28.29 | 718.6 | 29 81 | 757.2 | 31.0 | — 0.6 | ..... | NE | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | Squally..... | Alexander Watt. |
| Donaghadee | 30.08 | 764.0 | 30.12 | 765.0 | 40 | 4.4 | ..... | ESE | ..... | ..... | 5 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.76 | 755.9 | 29.79 | 756.7 | 37 | 2.8 | ..... | ENE | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy ..... | J. Costello. |
| Falmouth, Observatory | 29.61 | 752.1 | 29.85 | 758.2 | 39.4 | 4.1 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.67 | 702.5 | 29,99 | 761.7 | 79.0 | 26.1 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.70 | 754.4 | 29.93 | 760.2 | 86 | 30.0 | ..... | SW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | 29.92 | 760.0 | 38.5 | 3.6 | ..... | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast.. ... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.70 | 754.4 | 29.75 | 755.6 | 59.0 | 15.0 | ..... | W | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | Sergt Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.97 | 761.2 | 30.17 | 766.3 | 37.3 | 2.9 | ..... | E | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | D. G. Maclean. |
| Great Yarmouth | 29.93 | 760.2 | 29.93 | 760.2 | 36 | 2.2 | ..... | ENE | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.68 | 753.9 | 29.86 | 758.4 | 33.6 | 0.9 | ..... | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | The Staff for G. B. Airy. |
| Guernsey | 29.53 | 750.0 | 29.76 | 755.9 | 39 | 3.9 | ..... | NE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | 29.32 | 757.4 | 29.94 | 760.5 | 41 | 5.0 | ..... | NE | ..... | ..... | 2 | ..... | 8k | ..... | ..... | 0.2 | 5. | Gloomy..... | M. P. Moyle. |
| Holyhead | 29.95 | 760.7 | 30.00 | 762.0 | 40 | 4.4 | ..... | ENE | ..... | ..... | 6 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 29.25 | 742 9 | 29.75 | 755.6 | 38.9 | 3.8 | ..... | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast ..... | J. Fisher. |
| Kew, Observatory | 29.82 | 757.4 | 29.85 | 758.2 | 34.2 | 1.2 | ..... | NE | 27 | 12.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy ..... | The Meteorological Of. |
| Leicester, Museum | 29.68 | 753.9 | 29.94 | 760.5 | 39.0 | 3.9 | ..... | NE | ..... | ..... | 6 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.41 | 747,0 | 29.50 | 749.3 | 64 | 17.8 | ..... | SW | ..... | ..... | 2 | ..... | 3k | ..... | ..... | ..... | ..... | D. clouds..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 30.11 | 764.8 | 30.21 | 767.3 | 43 | 6.1 | ..... | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.19 | 766.8 | 77.5 | 25.3 | ..... | SE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.80 | 756.9 | 29.99 | 761.7 | 39.2 | 4.0 | ..... | NE | ..... | ..... | 6 | ..... | 1ck;n | E | ..... | 0 | 0 | Blue sky..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.39 | 746.5 | 29.93 | 760.2 | 39.2 | 4.0 | ..... | NNE | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.89 | 759.2 | 34 | 1.1 | ..... | ENE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. E. Bellamy. |
| Plymouth | 29.76 | 755.9 | 29.84 | 757.9 | 37.5 | 3.2 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Merrifield. |
| Roche's Point | 29.92 | 760.0 | 29.96 | 761.0 | 39 | 3.9 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast ..... | W. Kennedy. |
| Saint Ann's Head | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 30.27 | 768.8 | 38.5 | 3.6 | ..... | S | 25 | 11.2 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds..... | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.81 | 757.2 | 54.0 | 12.2 | ..... | SSW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | W. H. Lyne. |
| Sheffield | 29.76 | 755.9 | 30.06 | 763.5 | 37.2 | 2.9 | ..... | NE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds..... | W. F. Cooper. |
| Silloth Rectory | 30.09 | 764.3 | 30.12 | 765.0 | 41.0 | 5.0 | ..... | E | ..... | ..... | 8 | ..... | 1 | ..... | ..... | 0 | 0 | D. clouds..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.63 | 752.6 | 30.04 | 763.0 | 38.0 | 3.3 | 58 | ENE | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | Squally..... | Rev. S. J. Perry. |
| Strathfield Turgiss | 29.63 | 752.6 | 29.86 | 758.4 | 34.2 | 1.2 | ..... | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Squally..... | C.H. Griffith, F.M.S. |
| Thurso | 30.19 | 766.8 | 30.25 | 768.3 | 39 | 3.9 | ..... | S | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | John Trotter. |
| Truro, Royal Institution | 29.78 | 756.4 | 29.84 | 757 9 | 41 | 5.0 | ..... | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | W. Newcombe. |
| Valencia, Observatory | 29.93 | 760.2 | 29.95 | 760.7 | 42.8 | 6.0 | ..... | NE | 14 | 6.3 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds... | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.08 | 764.0 | 30.12 | 765.0 | 70 | 21.1 | 65 | S | 9 | 4.0 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Fine..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.12 | 765.0 | 58.0 | 14.0 | 83 | SE | ..... | ..... | 1 | ..... | 10k | ..... | ..... | 0.02 | 0.5 | Covered..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 30.23 | 767.8 | 36.0 | 2.2 | ..... | E | ..... | ..... | 3 | ..... | 10k | ..... | ..... | 0 | 0 | Cloudy..... | Andrew Gibb. |
| Mauritius, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Meldrum. |
| Melbourne, Observatory | 30.15 | 765.8 | 30.24 | 768.1 | 63.0 | 17.2 | 90 | WSW | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Very fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 30.20 | 767.1 | 44 | 6.7 | ..... | S | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.32 | 770.1 | 37 | 2.8 | ..... | S | ..... | ..... | 4 | 5 | 7 | SSW | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

| British Marine Series. Vessels. | Barometer. Corrected for instru'tal error and temperature. Inches. | Barometer. Corrected for instru'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 24′, E. 26° 40′ | ..... | ..... | 29.84‡ | 757.9‡ | 51.2 | 10.7 | ..... | ENE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle Isle, N. 35° 51′, W. 57° 49′ | ..... | ..... | 30.48‡ | 774.2‡ | 65 | 18.3 | ..... | SSE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 4 | E | Overcast..... | Capt. A. J. Brown. |
| Ship British Commodore, —— City of Agra, N. 30° 48′ W. 44° 06′ | ..... | ..... | 30.48‡ | 774.2‡ | 73.8 | 23.2 | ..... | SE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 6 | N | Blue sky..... | Capt. J. W. Thorne. Capt. Thos. Young. |
| Barque Commewyne, N. 40° 47′, W. 36° 30′ | ..... | ..... | 30.39‡ | 771.9‡ | 61 | 16.1 | ..... | WNW | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Capt. A. Buchan. |
| Barque Fedalina, N. 36° 30′, W. 22° 10′ | ..... | ..... | 30.27 | 768.8 | 62 | 16.7 | ..... | WNW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | 1 | NNE | D. clouds..... | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam, N. 5° 54′, E. 82° 03′ | ..... | ..... | 29.89‡ | 759.2‡ | 82 | 27.8 | ..... | E | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. Barlow. |
| S. S. Strathleven, N. 33° 50′, E. 24° 21′ | ..... | ..... | 29.68‡ | 753.9‡ | 66 | 18.9 | ..... | WNW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount, the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrumental error and temperature. Inches. | BAROMETER. Corrected for instrumental error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.30 | 668.0 | 30.02 | 762.5 | 66.2 | 19.0 | 85 | SE | ..... | ..... | 2 | 3c;ks | ..... | ..... | E | 0 | 0 | ..... | Federico Maison. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.26 | 768.7 | 30.31 | 769.0 | 29.1 | — 1.6 | 84 | E | ..... | ..... | 6 | ..... | 9 | ..... | ..... | ..... | ..... | Snowing | ..... |
| Fanöe | 30.22 | 767.6 | 30.24 | 768.1 | 30.9 | — 0.6 | 61 | E | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.40 | 746.7 | 29.44 | 747.8 | 13 1 | —10.5 | 70 | ENE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 30.19 | 766.7 | 30.22 | 767.6 | 45.9 | 7.7 | 76 | Calm | ..... | ..... | 0 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 30.13 | 765.3 | 30.30 | 769.6 | 31.6 | — 0.2 | 81 | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.17 | 740.5 | 29.72 | 754.9 | 41.0 | 5 | 84 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.335 | 8.5 | Covered | Collignon, Director. |
| Amiens, Normal School | 29.60 | 751.8 | 29.71 | 754.6 | 50.0 | 10.0 | 74 | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bonvallet, Director. |
| Avignon, Normal School | 29.37 | 746.1 | 29.45 | 748.1 | 56.1 | 13.4 | 68 | E | ..... | ..... | 1 | ..... | 8 | ..... | SE | 0.571 | 14.5 | Raining | M. Giraud, Director. |
| §Bar-sur-Seine | 29.02 | 737.0 | 29.58 | 751.2 | 42.6 | 5.9 | 72 | Var. | ..... | ..... | 2 | ..... | 10 | ..... | NE | 0 | 0 | Covered | G. Saillard, Director. |
| Beauvais, Normal School | 29.42 | 747.3 | 29.71 | 754.7 | 40.1 | 4.5 | 80 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 28.60 | 726.3 | 29.48 | 748.9 | 50.5 | 10.3 | 68 | E | ..... | ..... | 1 | ..... | 5 | ..... | E | 0 | 0 | Cloudy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.65 | 727.8 | 29.55 | 750.6 | 56.3 | 13.5 | 80 | N | ..... | ..... | 3 | ..... | 8k | W | S | 0 | 0 | Very cloudy | M. Marlot, Director. |
| Bourges, Normal School | 29.00 | 736.5 | 29.54 | 750.4 | 50.0 | 10 | 66 | N | ..... | ..... | 3 | ..... | 8 | N | N | 0.004 | 0.1 | Very cloudy | A. Waquet, Director. |
| Brest, Naval Observatory | 29.46 | 748.3 | 29.71 | 754.5 | 43.5 | 6.4 | 73 | NE | ..... | ..... | 3 | ..... | 10 | ..... | NE | 0.010 | 0.25 | ..... | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.15 | 740.5 | 29.58 | 751.2 | 44.2 | 6.8 | 88 | NW | ..... | ..... | 3 | ..... | 5 | W | W | 1.57 | 40. | Cloudy | September, Director. |
| Caen, Normal School | 29.62 | 752 3 | 29.69 | 754.2 | 39.6 | 4.2 | 74 | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.240 | 6.1 | Covered | M. Lair, Director. |
| Chartres, Normal School | 29.04 | 737.7 | 29.62 | 752.4 | 40.3 | 4.6 | 80 | NE | ..... | ..... | 1 | ..... | 10 | ..... | SW | 0.04 | 1. | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.34 | 745.2 | 29.66 | 753.4 | 40.6 | 4.8 | 59 | ESE | ..... | ..... | 4 | ..... | 8 | N | N | ..... | ..... | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Ob | 28.12 | 714.2 | 29.44 | 747.8 | 57.2 | 14.0 | 50 | N | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.016 | 0.4 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.76 | 730.5 | 29.64 | 752.9 | 36.5 | 2.5 | 87 | E | ..... | ..... | 4 | ..... | 6kn | ..... | E | 0 | 0 | Cloudy | Dr. Coulet, Director. |
| Commune de Grésque* | 28.73 | 729.7? | 29.48 | 748.7 | 50.2 | 10.1 | 82 | SE | ..... | ..... | 2 | ..... | 10 | ..... | SE | 0.602 | 15.3 | Covered | M. Kina, Director. |
| Grenoble, Normal School | 28.68 | 728.5 | 29.43 | 747.6 | 55.8 | 13.2 | 66 | NNW | ..... | ..... | 1 | ..... | 8ks | ..... | ..... | 0 | 0 | Very cloudy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.43 | 747.4 | 29.64 | 752.9 | 46.0 | 7.8 | 89 | N | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.63 | 1.6 | Covered | Mouillot, Director. |
| Le Mans, Normal School | 29.35 | 745.4 | 29.66 | 753.4 | 42.3 | 5.7 | 81 | N | ..... | ..... | 3 | ..... | 8 | ..... | N | 0.522 | 13.25 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.Scho l | 28.64 | 727.5 | 29.56 | 750.7 | 48.4 | 9.1 | 65 | N | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Misty | Baudry, Director. |
| Lorient, Naval Observatory | 29.58 | 751.4 | 29.68 | 753.9 | 46.4 | 8.0 | 80 | NNE | ..... | ..... | 4 | ..... | ..... | ..... | N | 0.012 | 0.3 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galsin, Director |
| Mirecourt, Normal School | 28.55 | 725.2 | 29.63 | 752.6 | 36.0 | 2.2 | 89 | SE | ..... | ..... | 3 | ..... | kn | ..... | NW | 0 | 0 | ..... | M. Barbier, Director. |
| Nismes, Normal School | 29.28 | 743.6 | 29.48 | 748.8 | 52.2 | 11.2 | 86 | NE | ..... | ..... | 1 | ..... | 5 | ..... | NE | 0.797 | 20.25 | Cloudy | Boyer, Director. |
| Privas, Normal School | 28.45 | 722.7 | 29.39 | 746.6 | 50.0 | 10 | 86 | N | ..... | ..... | 1 | ..... | 10 | N | N | 0.59 | 15. | Raining | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.67 | 626.7 | ..... | ..... | 35.4 | 1.9 | 94 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.54 | 750.3 | 29.57 | 751.1 | 49.3 | 9.6 | 84 | NNW | ..... | ..... | 1 | ..... | 10 | NNW | NNW | 0 | 0 | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.64 | 752.8 | 29.72 | 755.0 | 40 1 | 4.5 | 69 | NE | ..... | ..... | 4 | ..... | 10 | ..... | NE | 0.031 | 0.8 | Covered | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.62 | 752.4 | 29.65 | 753.2 | 40.6 | 4.8 | 77 | NNE | ..... | ..... | 3 | ..... | 8 | NNE | NNE | 0.650 | 16.50 | Very cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.48 | 748.7 | 29.64 | 752.9 | 42.3 | 5.7 | 68 | NE | ..... | ..... | 2-3 | ..... | ..... | ..... | NE | 0 | 0 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.49 | 723.6 | 29.56 | 750 7 | 51.8 | 11 | 52 | SW | ..... | ..... | 2 | ..... | 2 | SW | W | 0 | 0 | Slightly cl'dy | T. Huguet, Director. |
| Versailles Observatory | 29.15 | 740.3 | 29.64 | 752.8 | 40.3 | 4.6 | 74 | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Foggy | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 28.65 | 732.9 | 29.55 | 750.6 | 50.0 | 10 | 93 | E | ..... | ..... | 1 | ..... | 2 | ..... | S | 0 | 0 | Slightly cl'dy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.86 | 758.4 | 29.89 | 759.1 | 77.0 | 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.08 | 2. | ..... | L'Abbé Marc 6sl. |
| Lyons Obs'y, (Park Station) | 29.88 | 733.6 | 29.48 | 748.8 | 55.4 | 13.0 | 61 | WNW | ..... | ..... | 1 | ..... | 4cn | ..... | E | 0.004 | 0.1 | ..... | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 24.28 | 616.6 | 29 59 | 751.6 | 32.5 | 0.3 | 75 | ENE | 10.1 | 4.5 | .. | ..... | 10 | ..... | NE | 0.575 | 14.6 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.51 | 749.6 | 57.6 | 14.2 | 68 | E | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0.532 | 13.5 | Covered | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.36 | 745.8 | ..... | ..... | 41.2 | 5.1 | 75 | NE | ... | ..... | 3 | ..... | 10 | ..... | NE | 0 | 0 | ..... | Marié Davy, Director. |
| Perpignan | 29.36 | 745.6 | 29.46 | 748.3 | 50.0 | 10.0 | 61 | NE | 33.6 | 15.0 | ..... | ..... | 6 | ..... | N | 0.697 | 17.7 | ..... | Dr. F nes. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 21.95 | 557.6 | ..... | ..... | 19.8 | — 6.8 | ..... | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 1.056 | 26.8 | Snowy | Gen'l de Nansouty. |
| Toulouse, Observatory | 28.85 | 732.9 | 29.57 | 751.0 | 42.8 | 6.0 | 97 | WNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.563 | 14.3 | ..... | M. Mercadier Juller. |
| Tours | 29.42 | 747.2 | 29.61 | 752.2 | 43.7 | 6.5 | 79 | NE | ..... | ..... | 1 | ..... | 10 | ..... | NE | 0.067 | 1.7 | ..... | Cousin-Marquets. |
| Zi-Ka-Wei, (near Shanghai) | 30.45 | 773.5 | 30.48 | 774 1 | 38.8 | 3.8 | 69 | NE | 7.4 | 3.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:58 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1.010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône. §Observation taken twelve minutes late.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–11 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.88 | 733.6 | 29.72 | 754.8 | 32.0 | 0.0 | 90 | E | | | 3 | | 9 | E | | 0.118 | 3.0 | Snowin g | Prof. Dr. Hoh. |
| Berlin | 29.88 | 759.0 | 30.06 | 763.6 | 32.9 | 0.5 | 87 | E | | | 5 | | 8 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.43 | 747.4 | 29.95 | 760.8 | 34.5 | 1.4 | 46 | E | | | 3 | | 8 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.21 | 742.0 | 29.65 | 753.0 | 36.7 | 2.6 | 77 | NE | | | 3 | | 10 | E | | 0 | 0 | | Albert Senx. |
| Cassel | 29.26 | 743.2 | 29.86 | 758.5 | 36.0 | 2.2 | 39 | NE | | | 6 | | 0 | E | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.62 | 752.3 | 29.78 | 756.4 | 37.9 | 3.3 | 52 | NE | | | 6 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.41 | 746.9 | 29.78 | 756.3 | 35.2 | 1.8 | | NE | | | 4 | | 10 | | | Inap. | Inap. | | Physical Society. |
| Friedrichshafen | 28.12 | 714.3 | 29.58 | 751.2 | 40.1 | 4.5 | 78 | NE | | | 7 | | 10 | | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 30.05 | 763.3 | 30.13 | 765.2 | 32.0 | 0.0 | | ENE | | | 6 | | 2k | | | 0 | 0 | Fair | Captain F. Hegemann. |
| Kiel | 30.18 | 766.5 | 30.19 | 766.9 | 30.9 | — 0.6 | 86 | ENE | | | 5 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.17 | 766.3 | 30.26 | 768.5 | 29.8 | — 1.2 | 43 | E | | | 4 | | 2 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 30.17 | 766.4 | 28.8 | — 1.8 | | E | | | 4 | | 1 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.48 | 748.8 | 29.92 | 759.9 | 34.9 | 1.6 | 51 | NE | | | 6 | | 5 | | | 0 | 0 | | Prof. Bruhns, Privy Counsellor. |
| Memel, Naval School | 30.25 | 768.4 | 30.30 | 769.6 | 28.2 | — 2.1 | 45 | ENE | | | 4–5 | | 7ks | | | | | | Skalweit. |
| Neufahrwasser | 30.25 | 768.3 | 30.26 | 768.7 | 28.0 | — 2.2 | 47 | ENE | | | 4 | | 1 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.80 | 757.0 | 30.11 | 764.8 | 29.5 | — 1.4 | 61 | E | | | 9 | | 4 | E | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.06 | 738.5 | 29.64 | 752.8 | 38.8 | 3.8 | 76 | NNE | | | 4 | | 10 | | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 28.67 | 728.2 | 29.63 | 752.5 | 38.8 | 3.8 | 68 | NE | | | 1 | | 10 | | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.14 | 740.2 | 29.66 | 753.3 | 37.0 | 2.8 | 66 | SE | | | 6 | | 10 | | | 0.031 | 0.79 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.11 | 714.0 | 29.66 | 753.3 | 36.1 | 2.3 | 69 | NE | 20 | 9 | | | 10 | | E | 0.028 | 0.7 | | Dr. Van Bebber. |
| Wustrow, Naval School | 30.18 | 766.5 | 30.20 | 767.1 | 30.0 | — 1.1 | 100 | ENE | | | 5 | | 10s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.39 | 746.5 | 29.75 | 755.7 | 67.3 | 19.6 | | SW | | | 1.5 | | | | | | | ⅛ Clear | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.89 | 759.1 | 29.94 | 760.4 | 79.1 | 26.2 | 52 | W | 19 | 8.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.39 | 746.4 | 29.85 | 758.2 | 96.3 | 35.7 | 18 | SW | 8.1 | 3.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.80 | 756.8 | 29.83 | 757.8 | 83.9 | 28.8 | 69 | NW | 15 | 6.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.13 | 739.8 | 29.87 | 758.6 | 83.0 | 28.3 | 28 | NW | 2.5 | 1.1 | | | 1 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.34 | 694.3 | 29.81 | 757.2 | 89.2 | 31.8 | 35 | E | 6.0 | 2.7 | | | 4 | | | 0 | 0 | Blue sky | |
| Roorkee | 28.93 | 734.7 | 29.81 | 757.2 | 85.8 | 29.9 | 15 | NW | 4.3 | 1.9 | | | | | | 0 | 0 | Blue sky | |
| Agra | 29.31 | 744.4 | 29.86 | 758.5 | 89.7 | 32.1 | 13 | W | | | | | | | | 0 | 0 | | |
| Nagpur | 28.84 | 732.4 | 29.86 | 758.4 | 91 | 32.8 | 12 | Calm | 3.3 | 1.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.47 | 748.4 | 29.84 | 757.9 | 84.8 | 29.3 | 31 | NNW | 2.8 | 1.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.55 | 750.6 | 29.86 | 758.5 | 86.1 | 30.1 | 30 | NW | 3.3 | 1.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.64 | 752.7 | 29.82 | 757.3 | 88.6 | 31.4 | 31 | W | 0.9 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.85 | 707.3 | 29.85 | 758.1 | 81.8 | 27.7 | 15 | NNW | 7.0 | 3.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.76 | 755 8 | 29.84 | 757.9 | 86.6 | 30.3 | 52 | S | 2.0 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.83 | 757.7 | 29.85 | 758.1 | 82.7 | 28.2 | 57 | SSW | 7.0 | 3.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.44 | 747.9 | 29.83 | 757.8 | 80.0 | 26.7 | 23 | Calm | 1.3 | 0.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.74 | 755.4 | 29.83 | 757.7 | 80.9 | 27.2 | 77 | WSW | 5.9 | 2.6 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.57 | 751.1 | 29.91 | 759.8 | 70.0 | 21.1 | 60 | ENE | 2.2 | 1.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.53 | 724.6 | 29.88 | 759.0 | 85.2 | 29.6 | 16 | Calm | 2.3 | 1.0 | | | 0 | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals; where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.5 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.13 | 739.9 | 29.54 | 750.4 | 53.2 | 11.8 | 66 | SE | 5.6 | 2.5 | ..... | ..... | 4 | ..... | ..... | 1.528 | 38.8 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.00 | 736.5 | 29.51 | 749.6 | 56.7 | 13.7 | 69 | SE | ..... | ..... | 2 | ..... | 8 | SE | ..... | 0.083 | 2.1 | ..... | Prof. Schiaparelli. |
| Padua | 29.42 | 747.3 | 29.53 | 750.1 | 53.8 | 12.1 | 77 | NE | 6.3 | 2.8 | ..... | ..... | 10 | E | ..... | 0.181 | 4.6 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.61 | 726.7 | 29.52 | 749.7 | 48.9 | 9.4 | 89 | W | 4.3 | 1.9 | ..... | ..... | 10 | ..... | ..... | 0.217 | 5.5 | ..... | Prof. P. F. Denza. |
| Genoa | 29.32 | 744.7 | 29.51 | 749.6 | 55.2 | 12.9 | 66 | NE | 7.4 | 3.3 | ..... | ..... | 4 | SW | ..... | 0.618 | 15.7 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.60 | 701.1 | 29.51 | 749.6 | 46.2 | 7.9 | 65 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.267 | 6.8 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.47 | 748.5 | 29.52 | 749.8 | 50.0 | 10.0 | 87 | N | 4.9 | 2.2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.28 | 743.7 | 29.54 | 750.2 | 51.8 | 11.0 | 88 | E | ..... | ..... | 2 | ..... | 10 | SW | ..... | 0.165 | 4.2 | ..... | Cav. F. Meucci |
| Leghorn | 29.39 | 746.4 | 29.47 | 748.6 | 57.2 | 14.0 | 74 | W | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 29.41 | 747.1 | 29.59 | 751.5 | 54.7 | 12.6 | 79 | S | 4.9 | 2.2 | ..... | ..... | 10 | ..... | ..... | 0.197 | 5.0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.35 | 745.5 | 29.60 | 751.9 | 60.8 | 16.0 | 74 | SSW | 16.1 | 7.2 | ..... | ..... | 7 | S | ..... | 0.071 | 1.8 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.71 | 729.2 | 29.59 | 751.5 | 64.8 | 18.2 | 81 | NW | 2.5 | 1.1 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.30 | 744.3 | 29.50 | 749.2 | 59.5 | 15.3 | 69 | SE | ..... | ..... | 2 | ..... | 7 | W | ..... | 0.315 | 8.0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.36 | 745.6 | 29.61 | 752.0 | 57.9 | 14.4 | 79 | NE | 4.3 | 1.9 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.54 | 750.4 | 29.62 | 752.3 | 62.8 | 17.1 | 77 | SE | 8.7 | 3.9 | ..... | ..... | 7 | SE | ..... | 0.016 | 0.4 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.08 | 738.5 | 29.03 | 752.6 | 53.2 | 11.8 | 85 | SSW | 6.9 | 3.1 | ..... | ..... | 10 | ..... | ..... | 0.335 | 8.5 | ..... | Prof. F. Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.18 | 766.6 | 30.20 | 767.1 | 39.6 | 4.2 | 74 | NNW | 3.2 | 1.4 | ..... | ..... | 3s | ..... | ..... | 0.030 | 0.76 | Fair | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 30.06 | 763.5 | 30.28 | 769.1 | 43.0 | 6.1 | 61 | WNW | 2.9 | 1.3 | ..... | ..... | 3s | ..... | ..... | 0 | 0 | Clear. | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.86 | 758.4 | 29.93 | 760.2 | 43.3 | 6.3 | 52 | N | 15.6 | 7.3 | ..... | ..... | 5ck;s | ..... | ..... | 0 | 0 | Fair | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 26.16 | 638.7 | 30.24 | 768.1 | 46.8 | 8.2 | 39 | Calm | ..... | ..... | 0 | 4 | ..... | ..... | ..... | 0 | 0 | ½ clouded | Prof. L. Perez. |
| Leon | 24.52 | 622.8 | 30.23 | 767.9 | 56.8 | 13.8 | 61 | SW | ..... | ..... | 2 | 1c | 0 | ..... | ..... | 0 | 0 | Foggy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.16 | 588.3 | 30.25 | 768.3 | 50.9 | 10.5 | 42 | Calm | 0 | 0 | ..... | 3c | 4k | ..... | ..... | 0 | 0 | Foggy | The Staff. |
| Pabellon, (Aguascallentes) | ..... | ..... | ..... | ..... | 50.4 | 10.2 | 46 | NNE | ..... | ..... | 1 | 2c | 0 | SW | ..... | 0 | 0 | Fair | M. V. de Leon, M. E. |
| Tlacotalpam | 29.99 | 761.7 | 30.00 | 762.0 | 75.6 | 24.2 | 88 | N | ..... | ..... | 3 | 3 | 0 | SW | ..... | 0 | 0 | Foggy | M. M. Chàzaro. |
| San Luis Potosi | 24.32 | 616.1 | 30.27 | 768.9 | 61.0 | 16.8 | 70 | SE | ..... | ..... | 1 | 2 | 0 | W | ..... | 0 | 0 | Clear | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.48 | 596.5 | 30.25 | 768 3 | 48.9 | 9.4 | 52 | N | 2.2 | 1.0 | ..... | ..... | 5 | ..... | Calm | 0 | 0 | Misty | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.43 | 722.2 | 30.09 | 764.3 | 74.3 | 23.5 | 52 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

NOTE.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,566.9 m., or 5,140.6 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,893 m., or 6,210.4 ft.; Zacatecas, 2,490 m., or 8,168.6 ft.; Puebla, Catholic Institute, 2,201m., or 7,220.8 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.83 | 757.6 | 29.83 | 757.6 | 37.0 | 2.6 | ..... | ENE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.98 | 761.4 | 30.03 | 762.8 | 35.2 | 1.8 | ..... | ENE | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.96 | 761.0 | 29.96 | 761 0 | 35.1 | 1.7 | ..... | NE | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.82 | 757.4 | 29.82 | 757.4 | 38.7 | 3.7 | 48 | ENE | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.84 | 757.8 | 29.88 | 759.0 | 38.7 | 3.7 | 93 | ESE | ..... | ..... | 6 | ..... | 3 | ..... | ..... | 0 | 0 | Slightlycl'dy | H. v. d. Brink. |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.35 | 771.0 | 30.41 | 772.4 | 33.1 | 0.6 | 71 | N | 4.3 | 1.9 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 30.27 | 768.8 | 30.31 | 769.8 | 34.2 | 1.2 | 72 | SSW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 30.27 | 768.8 | 30.42 | 772.7 | 33.1 | 0.6 | 46 | S | 2 | 1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.94 | 760.5 | 29.98 | 761.6 | 37.0 | 2.8 | 64 | SW | 34 | 15 | ..... | ..... | 10 | ..... | ..... | 0.118 | 3.0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.11 | 764.8 | 30.30 | 769.7 | 69.0 | 15.0 | 81 | N | 9.4 | 4.2 | ..... | ..... | 3 | ..... | ..... | 0 098 | 2.5 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.74 | 729.9 | 29.77 | 756.2 | 55.4 | 13.0 | 42 | NW | 15.0 | 6.7 | ..... | ..... | 4 | NW | ..... | 0 | 0 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.09 | 764.2 | 30.17 | 766.4 | 62.8 | 17.1 | 55 | SE | 3.8 | 1.7 | ..... | ..... | 2 | ..... | ..... | 0.075 | 1.9 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.50 | 749.4 | 29.87 | 758.7 | 55.0 | 12.8 | 57 | NNW | 17.4 | 7.8 | ..... | ..... | 9 | ..... | ..... | 0.020 | 0.5 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.22 | 767.6 | 30.29 | 769.4 | 65.8 | 18 6 | 69 | NW | 14.3 | 6.4 | ..... | ..... | 4 | ..... | ..... | 0.055 | 1.4 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell: Height scale 0-9 | Sea or swell: Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | ..... | ..... | 29.93 | 760.1 | 82.4 | 28.0 | ..... | WSW | ..... | ..... | 3 | ..... | 4 | ..... | WSW | 2 | WSW | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto de S. Jose de Bissao, Senegambia | ..... | ..... | 29.97 | 761.1 | 80.6 | 27 | ..... | ENE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 1 | ENE | Blue sky | A. Ferreira, 2d Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | 29.84 | 757.8 | 88.2 | 31.2 | ..... | WNW | ..... | ..... | 2 | ..... | 4 | ..... | WNW | ..... | ..... | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 30.04 | 763.1 | 64.4 | 18.0 | ..... | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 1 | ..... | Blue sky | J. M. T. Guimaraes, Com'd't. |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.63 | 752.5 | 30.07 | 763.7 | 30.5 | — 1.1 | 52 | ENE | 13 | 6 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.82 | 757.3 | 30.26 | 768.7 | 24.6 | — 4.3 | 57 | NNE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 30.11 | 764.8 | 30.37 | 771.4 | 27.3 | — 2.6 | 52 | NW | 7 | 3 | ..... | ..... | 3ck | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.26 | 768.7 | 30.28 | 769.1 | 30.2 | — 1.0 | 57 | NNW | 4 | 2 | ..... | ..... | 1s | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.39 | 746.4 | 30.06 | 763.6 | 26.4 | — 3.1 | 65 | NNE | 13 | 6 | ..... | ..... | 10ks;c;n | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.98 | 761.6 | 30.06 | 763.4 | 30.2 | — 1.1 | 64 | ENE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.02 | 762.5 | 30.04 | 763.0 | 34.2 | 1.2 | 65 | ENE | 7 | 3 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.45 | 748.1 | 30.05 | 763.3 | 11.7 | —11.3 | 61 | N | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.76 | 755 9 | 29.98 | 761.4 | 27.5 | — 2.5 | 50 | NW | 9 | 4 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.19 | 766.7 | 30.21 | 767.2 | 20.8 | — 6.2 | 82 | E | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Capt. Ssellwerstow. |
| Tiflis | 28.59 | 726.1 | 30.00 | 761.9 | 59.7 | 15.4 | 36 | Calm | 0 | 0 | ..... | ..... | 6k | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.06 | 763.5 | 29.98 | 761.4 | 38.8 | 3.8 | 32 | W | 18 | 8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 28.80 | 731.4 | 29.29 | 743.9 | 23.7 | — 4.6 | 85 | NNE | 31 | 14 | ..... | ..... | 10 | ..... | ..... | ..... | Snow-storm | Cand. Fatjanow. |
| Kasan | 29.00 | 736.6 | 29.28 | 743.7 | 21.4 | — 5.9 | 91 | N | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | Snow-storm | Physical Cabinet. |
| Ekaterinburg | 28.44 | 722.3 | 29.43 | 747.4 | 28.4 | — 2.0 | 68 | ENE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.83 | 757.7 | 30.07 | 763.7 | 53.6 | 12.0 | 51 | NW | 9 | 4 | ..... | ..... | 3cs | ..... | ..... | ..... | ..... | |
| Tashkend | 29.39 | 721.1 | 30.06 | 763.4 | 65.2 | 18.6 | 48 | NW | 34 | 15 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | Teich, A. M. |
| Barnaul | 29.63 | 752.5 | 30.15 | 765 9 | 26.4 | — 3.1 | 63 | NE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.05 | 763 3 | 30.36 | 771.2 | 25.3 | — 3.7 | 55 | WSW | 2 | 1 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 30.06 | 763.5 | 30.20 | 767.1 | 42.8 | 6.0 | 46 | SW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 30.07 | 763.7 | 30.17 | 766.2 | 20.6 | — 6.4 | 74 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount— and generally the kind of cloudiness— without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455 m., or 1,492.7 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165.2 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.27 | 743.5 | 29.38 | 746.3 | 54.5 | 12.5 | 75 | E | 3.6 | 1.61 | ..... | ..... | 5ks | ..... | ..... | 0.391 | 9.92 | ..... | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 29.61 | 752.1 | 29.67 | 753.6 | 54.5 | 12.5 | 69 | NW | 3.1 | 1.38 | ..... | 3 | 2 | N | ..... | 0.280 | 7.1 | Cloudy | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.65 | 676.9 | ..... | ..... | 40.1 | 4.5 | 87 | N | 6.4 | 2.87 | ..... | 0 | 8 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.36 | 695.0 | ..... | ..... | 48.4 | 9.1 | 48 | N | 7.4 | 3.33 | ..... | 0 | 4 | ..... | ..... | 0.047 | 1.2 | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 29.34 | 745.1 | 29.49 | 749.0 | 59.0 | 15.0 | 52 | NW | 5.5 | 2.47 | ..... | 3 | 6 | ESE | ..... | 0 | 0 | Almost cov'd | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.84 | 732.6 | 29.76 | 755.9 | 46.6 | 8.1 | 82 | N | 5.6 | 2.5 | ..... | ..... | 10 | ..... | ..... | 0.457 | 11.6 | Misty | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.07 | 763.7 | 30.13 | 765.4 | 72.2 | 22.3 | 89 | ESE | 2.7 | 1.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.91 | 759.9 | 29.97 | 761.3 | 80.6 | 27.0 | 66 | ENE | 4.5 | 2.0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.71 | 754.6 | 29.81 | 757.1 | 67.7 | 14.3 | 56 | WNW | 23.4 | 10.5 | ..... | 0 | 4 | ..... | N | 0. | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I | 30.03 | 762.8 | 30.12 | 765.1 | 77 4 | 25.2 | 86 | E? | 0 | 0 | ..... | 3k | 2kn | E | E | 0.010 | 0.26 | Cloudy | Leonardo de Tejada, Ch'f Eng'r. |

Note.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.31 | 769.8 | 30.35 | 770.8 | 16.9 | — 8.4 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.28 | 769.2 | 30.34 | 770.5 | 27.7 | — 2.4 | 60 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.30 | 769.5 | 30.35 | 770.8 | 37.0 | 2.8 | 53 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 30.26 | 768.7 | 30.44 | 773.2 | 28.9 | — 1.7 | 60 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 30.29 | 768.5 | 30.32 | 770.0 | 28.8 | — 1.8 | 80 | E | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing. | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.35 | 771.0 | 30.43 | 772.9 | 28.6 | — 1.9 | 56 | NNW | 3.1 | 1.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.08 | 713.2 | 29.52 | 749.9 | 48.2 | 9.0 | 66 | NNE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | The Observatory. |
| Zurich | 27.93 | 709.4 | 29.61 | 752.2 | 40.3 | 4.6 | 82 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —11.2 mm.; Thermometer, +0.3 Cent.; Relative Humidity, +6 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.84 | 758.0 | 53.2 | 11.8 | 70 | ESE | 4 | 2.0 | ..... | ..... | 10 | ..... | N | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.35 | 771.0 | 69.8 | 21.0 | ..... | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Stormy | |
| Valona | ..... | ..... | 29.70 | 754.3 | 66.4 | 18.9 | ..... | S | ..... | ..... | 8 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.86 | 758.4 | 29.97 | 761.3 | 67.5 | 19.7 | 65 | NW | ..... | ..... | 1 | 5ck | ..... | ..... | ..... | 0 | 0 | D. clouds | Prof. C. V. A. Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Brockville, Ontario | 29.65 | 753.1 | 29.97 | 761.2 | 23 | — 5.0 | ..... | W | 1 | 0.4 | ..... | ..... | 10s | ..... | W | 0.05 | 1.3 | Cloudy | Hon. J. Ferguson. |
| *Chatham, N. B | 29.94 | 760.5 | 30.01 | 762.2 | 26 | — 3.3 | 96 | E | 7 | 3.1 | ..... | ..... | 10n | ..... | E | 0.30 | 7.6 | Light snow | W. R. Bigr. |
| Charlottetown, P. E. Island | 29.97 | 761.2 | 30.02 | 762.5 | 26 | — 3.3 | 99 | E | 24 | 10.7 | ..... | ..... | 10n | ..... | ..... | 0.60 | 15.24 | Light snow | G. A. Blair. |
| Cornwall, Ontario | 29.68 | 753.9 | 29.88 | 758.9 | 24.5 | — 4.2 | 97 | N | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0.30 | 7.6 | Overcast | H. J. Cundall, C. E. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Smith, M. A. |
| Esquimault, B. C | 29.92 | 760.0 | 29.96 | 761.0 | 44.3 | 6.8 | 92 | SE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.17 | 4.3 | Overcast | H. A. Johnson. |
| *Father Point, Quebec | 29.91 | 759.7 | 29.94 | 760.5 | 23 | — 5.0 | 86 | E | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.03 | 0.8 | Light snow | W. H. Bevis. |
| Fredericton, N. B | 29.83 | 757.7 | 29.90 | 759.4 | 27.2 | — 2.7 | 98 | NE | 8 | 3.6 | ..... | ..... | 10n | ..... | ..... | 0.13 | 3.18 | Snowing | J. McWilliams. |
| *Fort Garry, Manitoba | 28.92 | 734.6 | 29.82 | 757.4 | 6 | —14.4 | 95 | SE | 8 | 1.3 | ..... | 5k | 5s | ..... | Calm | 0 | 0 | Fair | Prof. Harrison. |
| Granton, Ontario | 28.96 | 735.6 | 30.13 | 765.3 | 25 | — 3.8 | ..... | NW | ..... | ..... | 1 | ..... | 10n | ..... | ..... | Inap. | Inap. | Overcast | James Stewart. |
| *Halifax, N. S | 29.80 | 756.9 | 29.93 | 760.2 | 32 | 0.0 | 98 | E | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.34 | 8.64 | Heavy rain | James Grant. |
| Hamilton, Ontario | 29.71 | 754.6 | 30.10 | 764.5 | 26.9 | — 2.8 | 84 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.37 | 9.4 | Clear | F. Allison, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Geo. Dickson, M. A. |
| *Kingston, Ontario | 29.64 | 752.8 | 29.99 | 761.7 | 24 | — 4.4 | 87 | W | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0.83 | 21.1 | Cloudy | E. Weedon. |
| Little Glace Bay, N. S | 30.12 | 765.0 | 30.16 | 766.1 | 26.7 | — 2.9 | 95 | SE | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0.30 | 7.6 | Snowing | S. Woods, M. A. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. H. Rigby. |
| *Montreal, Quebec | 29.64 | 752.8 | 29.85 | 758.2 | 25 | — 3.9 | 90 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | ..... | 0.15 | 3.8 | Cloudy | J. R. Nason. |
| *Parry Sound, Ontario | 29.34 | 745.2 | 30.10 | 764.5 | 12 | —11.1 | 90 | Calm | 0 | 0 | ..... | 5k | 5ks | NE | NE | 0.23 | 5.8 | Cloudy | C. H. McLeod, C. E. |
| Peterboro, Ontario | 29.24 | 742.7 | 30.04 | 763.0 | 20.4 | — 6.4 | 53 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | Rev. R. Mosley. |
| Port Dover, Ontario | 29.37 | 746.0 | 30.11 | 764.8 | 26 | — 3.3 | 88 | NW | 2 | 0.9 | ..... | 10k | 0 | NW | ..... | 0.28 | 7.1 | Cloudy | J. F. Jeffers, B. A. |
| Port Hastings, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. Morgan. |
| Port Stanley, Ontario | 29.44 | 747.8 | 30.12 | 765.0 | 27 | — 2.8 | 86 | W | 12 | 5.4 | ..... | 8k | 0 | NW | ..... | 0.19 | 4.8 | Cloudy | Peter Grant. |
| *Quebec, Quebec | 29.56 | 750.8 | 29.90 | 759.4 | 25 | — 3.9 | 87 | NE | ..... | ..... | 3 | ..... | 10n | ..... | NE | 0.06 | 1.6 | Cloudy | M. Payne. |
| *Rockliffe, Ontario | 29.52 | 749.8 | 30.01 | 762.2 | 17 | — 8.3 | 78 | NW | 4 | 1.8 | ..... | 0 | 2s | ..... | NW | 0.44 | 11.2 | Fair | Capt. Ashe, R. N. |
| St. Andrews, N. B | 29.74 | 755.4 | 29.79 | 756.7 | 30 | — 1.1 | 89 | E | ..... | ..... | 3 | ..... | 10n | ..... | ..... | 0.28 | 7.1 | Hailing | W. H. McIntyre. |
| St. John, N. B | 29.60 | 751.8 | 29.77 | 756.1 | 30 | — 1.1 | 89 | E | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.28 | 7.1 | Hailing | Dr. Gove. |
| *Saugeen, Ontario | 29.35 | 745.0 | 30.08 | 764.0 | 27 | — 2.8 | 89 | W | 9 | 4.0 | ..... | ..... | 10ks | ..... | ..... | 0.96 | 24.4 | Sleeting | G. Murdock, C. E. |
| Stayner, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.20 | 5.1 | Cloudy | K. Stewart. |
| Stratford, Ontario | 28.77 | 730.7 | 30.12 | 765.0 | 26 | — 3.3 | 86 | NW | 10 | 4.5 | ..... | ..... | 10s | ..... | ..... | 0.27 | 6.9 | ..... | R. J. Cole. |
| *Sydney, C. B | 30.18 | 766.6 | 30.23 | 767.8 | 25 | — 3.9 | 96 | E | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.20 | 5.1 | Overcast | C. J. MacGregor, M. A. |
| *Toronto, Ontario | 29.68 | 753.9 | 30.09 | 764.3 | 25 | — 3.9 | 86 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.18 | 4.6 | Heavy snow | T. C. Hill. |
| Windsor, N. S | 29.75 | 755.6 | 29.84 | 757.9 | 33.5 | 0.8 | 95 | ..... | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.31 | 7.9 | Clear | Magnetic Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 28.0 | — 2.2 | 100 | SW | ..... | ..... | ..... | 5ks | 5s | ..... | ..... | 0.56 | 14.2 | Raining | Prof. John E. Oram. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.01 | 0.3 | Cloudy | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

1879.—March 23.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.68 | 753.9 | 29.91 | 759.7 | 31 | — 0.6 | 89 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.72 | 18.3 | Cloudy | |
| Alpena, Michigan | 29.39 | 746.5 | 30.08 | 764.0 | 20 | — 6.7 | 70 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0.50 | 12.7 | Fair | |
| Atlanta, Georgia | 28.95 | 735.3 | 30.11 | 764.8 | 48 | 8.9 | 71 | NW | 17 | 7.6 | ..... | 0 | Haze | ..... | Calm | 0.58 | 14.7 | Clear | |
| Atlantic City, New Jersey | 29.93 | 760.2 | 29.94 | 760.5 | 37 | 2.8 | 100 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | N | 1.05 | 26.7 | Cloudy | |
| Augusta, Georgia | 29.89 | 759.2 | 30.07 | 763.8 | 57 | 13.9 | 81 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | | 0.38 | 9.7 | Clear | |
| Baltimore, Maryland | 29.94 | 760.5 | 29.99 | 761.7 | 42 | 5.6 | 83 | NW | 4 | 1.8 | ..... | 5k | 5s | NW | NW | 0.56 | 14.2 | Cloudy | |
| Barnegat, New Jersey | 29.90 | 759.4 | 29.92 | 760.0 | 37 | 2.8 | 100 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | W | 1.33 | 33.8 | Cloudy | |
| Bismarck, Dakota | 27.89 | 708.4 | 29.75 | 755.6 | 34 | 1.1 | 79 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boerne, Texas | 28 74 | 730.0 | 29.99 | 761.7 | 48 | 8.9 | 43 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | | 0 | 0 | Clear | |
| Boise City, Idaho | 27.38 | 695.4 | 30.34 | 770.6 | 38 | 3 3 | 63 | SE | 2 | 0.9 | ..... | 2ck | 0 | W | | Inap | Inap. | Fair | |
| Boston, Massachusetts | 29.71 | 754.6 | 29.87 | 758.7 | 30 | — 1.1 | 100 | N | 15 | 6.7 | ..... | ..... | 10n | ..... | N | 0.85 | 21.6 | Light rain | |
| Brackettville, Texas | 29.07 | 738.4 | 30.11 | 764.8 | 53 | 11.7 | 80 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.72 | 729.5 | 29.75 | 755.6 | 23 | — 5.0 | 86 | SE | 12 | 5.4 | ..... | 8cs | 0 | Calm | | 0 | 0 | Cloudy. | |
| Brownsville, Texas | 30.07 | 763 8 | 30.12 | 765.0 | 68 | 20.0 | 95 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Buffalo, New York | 29 33 | 745.0 | 30.07 | 763.8 | 27.5 | — 2.5 | 82 | W | 10 | 4.5 | ..... | ..... | 10s | ..... | W | 0.25 | 6.3 | Cloudy | |
| Burkes, Arizona | . | ..... | ..... | ..... | 53 | 11.7 | 19 | S | ..... | ..... | 1 | 0 | 0 | ..... | | 0 | 0 | Clear | |
| Burlington, Vermont | 29.55 | 750.6 | 29.85 | 758.2 | 32 | 0.0 | 74 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.13 | 3.3 | Cloudy | |
| Cairo, Illinois | 29.91 | 759.7 | 30.32 | 770.1 | 42 | 5.6 | 83 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.30 | 642.6 | 30.10 | 764.5 | 46 | 7.8 | 47 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 45 | 7.2 | 39 | SW | ..... | ..... | 1 | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Campo, California | 27.57 | 700.3 | 30.14 | 765.5 | 33 | 0.6 | 69 | SW | 4 | 1.8 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 29.96 | 761.0 | 29.97 | 761.2 | 58 | 14.4 | 94 | SW | 11 | 4.9 | ..... | ..... | 10s | ..... | SW | 0.41 | 10.4 | Cloudy | |
| Cape Henry, Virginia | 29.99 | 761.7 | 30.00 | 762.0 | 46 | 7.8 | 92 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | NW | 1.80 | 33.0 | Cloudy | |
| Cape Lookout, N. Carolina | 29.96 | 761.0 | 29.98 | 761.5 | 58 | 14.4 | 88 | W | 20 | 8.9 | ..... | ..... | 10ks | ..... | W | 0.58 | 14.7 | Cloudy | |
| Cape May, New Jersey | 29.92 | 760.0 | 29.95 | 760.7 | 40 | 4.4 | 91 | NW | 22 | 9.8 | ..... | ..... | 10s | ..... | NW | 0.50 | 12.7 | Cloudy | |
| Castroville, Texas | 29.41 | 747.0 | 30.13 | 765.3 | 57 | 13.9 | 31 | E | 6 | 2.7 | ..... | 0 | 0 | ..... | | 0 | 0 | Clear | |
| Charleston, South Carolina | 29.97 | 761.2 | 30.03 | 762.8 | 60 | 15.6 | 58 | W | 4 | 1.8 | ..... | 0 | 4ks | ..... | W | 0.18 | 4.6 | Fair | |
| Cheyenne, Wyoming | 23.98 | 609.1 | 29.92 | 760.0 | 42 | 5.6 | 42 | NW | 20 | 8.9 | ..... | 2cs | 2s | W | NW | 0 | 0 | Fair | |
| Chicago, Illinois | 29.44 | 747.8 | 30.16 | 766.1 | 32 | 0.0 | 79 | W | 3 | 1.3 | ..... | Haze | 0 | ..... | | 0.02 | 0.5 | Clear | |
| Cincinnati, Ohio | 29.56 | 750.8 | 30.24 | 768.1 | 36 | 2.2 | 71 | NW | 6 | 2.7 | ..... | 2k | 0 | NW | | 0.03 | 0.8 | Clear | |
| Cleveland, Ohio | 29.40 | 746.7 | 30.16 | 766.1 | 30 | — 1.1 | 78 | W | 7 | 3.1 | ..... | 10k | 0 | W | | 0.53 | 13.5 | Cloudy. | |
| Coleman City, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Columbus, Ohio | 29.34 | 745.2 | 30.21 | 767.3 | 35 | 1.7 | 70 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | 1.54 | 39.1 | Cloudy | |
| Corcano, Texas | 28.25 | 717.5 | 29.91 | 759.7 | 44 | 6.7 | 35 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | | 0 | 0 | Clear | |
| Corsicana, Texas | 27.75 | 704.8 | 30.24 | 768.1 | 48 | 8.9 | 49 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | | 0 | 0 | Clear | |
| Davenport, Iowa | 29.47 | 748.5 | 30.14 | 765.5 | 29 | — 1.7 | 89 | W | 2 | 0.9 | ..... | 2cs | 0 | Calm | | 0 | 0 | Fair | |
| Deadwood, Dakota | 25.35 | 643.9 | ..... | ..... | 32 | 0.0 | 89 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Decatur, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Denison, Texas | 29.40 | 746.7 | 30.21 | 767.3 | 46 | 7.8 | 47 | SE | 6 | 2.7 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Denver, Colorado | 24.72 | 627.9 | 29.94 | 760.5 | 55 | 12.8 | 22 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Des Moines, Iowa | 29.11 | 739.4 | 30.12 | 765.0 | 34 | 1.1 | 70 | SW | 6 | 2.7 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Detroit, Michigan | 29.44 | 747.8 | 30.14 | 765.5 | 29 | — 1.7 | 89 | W | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.12 | 3.0 | Cloudy | |
| Dodge City, Kansas | 27.42 | 696.5 | 29.76 | 755.9 | 39 | 3.9 | 64 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.38 | 746.2 | 30.11 | 764.8 | 29 | — 1.7 | 78 | SW | 3 | 1.3 | ..... | 1cs | Fog | W | Calm | 0.01 | 0.3 | Foggy | |
| Duluth, Minnesota | 29.21 | 741.9 | 29.92 | 760.0 | 26 | — 3.3 | 75 | Calm | 0 | 0 | ..... | 5c | 0 | SW | ..... | 0 | 0 | Fair | |
| Eagle Pass, Texas | 29.44 | 747.8 | 30.18 | 766.6 | 58 | 14.4 | 53 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.70 | 754.4 | 29.77 | 756.1 | 31 | — 0.6 | 100 | NE | 30 | 13.4 | ..... | ..... | 10n | ..... | NE | 0.12 | 3.0 | Light rain | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 63 | 17.2 | 64 | Calm | ..... | ..... | 0 | 0 | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.33 | 668.8 | ..... | ..... | 57 | 13.9 | 25 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.88 | 746.2 | 30.13 | 765.3 | 30 | — 1.1 | 89 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | 0.51 | 13.0 | Cloudy | |
| Escanaba, Michigan | 29.36 | 745.7 | 30.06 | 763.5 | 15 | — 9.4 | 65 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | | 0.02 | 0.5 | Clear | |
| Florence, Arizona | 28.58 | 725.9 | 30.18 | 766.6 | 50 | 10.0 | 32 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.74 | 704.6 | ..... | ..... | 30 | — 1.1 | 67 | W | 11 | 4.9 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| Fort Craig, New Mexico | 25.63 | 651.0 | 29.69 | 754.1 | 37 | 2.8 | 30 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.30 | 642.6 | 30.26 | 768.6 | 42 | 5.6 | 56 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.64 | 752.8 | 30.20 | 767.1 | 42 | 5.6 | 50 | E | 7 | 3.1 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Fort Griffin, Texas | 28.88 | 733.5 | 30.20 | 767.1 | 42 | 5.6 | 50 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.36 | 694.9 | ..... | ..... | 35 | 1.7 | 90 | SW | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Cloudy | |
| Fort McKavett, Texas | 27.92 | 709.2 | 29.87 | 758.7 | 50 | 10.0 | 32 | NE | 4 | 1.8 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.95 | 735.3 | 30.10 | 764.5 | 39 | 3.9 | 64 | N | 4 | 1.8 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Fort Stevenson, Dakota | 27.88 | 708.1 | ..... | ..... | 27 | — 2.8 | 77 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fredericksburg, Texas | 28.46 | 722.9 | 30.02 | 762.5 | 60 | 15.6 | 44 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 30.14 | 765.5 | 30.18 | 766.6 | 63 | 17.2 | 47 | NE | 25 | 11.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Graham, Texas | 29.09 | 738.9 | 30.19 | 766.8 | 40 | 4.4 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.47 | 748.5 | 30.15 | 765.8 | 32 | 0.0 | 79 | W | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0.12 | 3.0 | Cloudy | |
| Indianapolis, Indiana | 29.39 | 746.5 | 30.20 | 767.1 | 35 | 1.7 | 80 | NW | 1 | 0.4 | ..... | 2k | 0 | Calm | ..... | Inap. | Inap. | Clear | |
| Indianola, Texas | 30.15 | 765.8 | 30.18 | 766.6 | 64 | 17.8 | 78 | NE | 24 | 10.7 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Jacksboro, Texas | 29.05 | 737.9 | 30.19 | 766.8 | 56 | 13.3 | 29 | SE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.07 | 763.8 | 30.10 | 764.5 | 67 | 19.4 | 74 | SW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.22 | 5.6 | Clear | |
| Keokuk, Iowa | 29.50 | 749.3 | 30.14 | 765.5 | 35 | 1.7 | 80 | SW | 8 | 3.6 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Clear | |
| Key West, Florida | 30.12 | 765.0 | 30.16 | 766.1 | 75 | 23.9 | 86 | SE | 7 | 3.1 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 29.94 | 760.5 | 29.96 | 761.0 | 59 | 15.0 | 100 | NE | 19 | 8.5 | ..... | ..... | 10n | ..... | E | 0.30 | 7.6 | Light rain | |
| Knoxville, Tennessee | 29.25 | 742.9 | 30.29 | 769.4 | 43 | 6.1 | 63 | N | 12 | 5.4 | ..... | 0 | 8ks | ..... | N | 0.47 | 11.9 | Fair | |
| La Crosse, Wisconsin | 29.26 | 743.2 | 30.02 | 762.5 | 28 | — 2.2 | 77 | S | 10 | 4.5 | ..... | 2ck | 0 | SW | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.18 | 665.0 | 30.33 | 770.4 | 40 | 4.4 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.76 | 755.9 | 30.10 | 764.5 | 59 | 15.0 | 76 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.22 | 742.2 | 30.10 | 764.5 | 33 | 0.6 | 70 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.81 | 757.2 | 30.16 | 766.1 | 47.0 | 8.3 | 85 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.66 | 753.4 | 30.24 | 768.1 | 38 | 3.3 | 63 | NW | 3 | 1.3 | ..... | 8k | 0 | NW | ..... | 0.03 | 0.8 | Fair | |
| Lynchburg, Virginia | 29.31 | 744.5 | 29.99 | 761.7 | 51 | 10.6 | 59 | NW | 6 | 2.7 | ..... | 0 | 5ks | ..... | Calm | 0.29 | 7.4 | Fair | |
| Madison, Wisconsin | 29.06 | 738.1 | 30.10 | 764.5 | 26 | — 3.3 | 63 | S | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Marquette, Michigan | 29.24 | 742.7 | 29.97 | 761.2 | 28 | — 2.2 | 66 | Calm | 0 | 0 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Mason, Texas | 28.57 | 725.7 | 30.38 | 771.6 | 47 | 8.3 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.98 | 761.5 | 30.31 | 769.9 | 42 | 5.6 | 75 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.36 | 745.7 | 30.12 | 765.0 | 32 | 0.0 | 69 | SW | 6 | 2.7 | ..... | 1c | 0 | Calm | ..... | 0.15 | 3.8 | Clear | |
| Mobile, Alabama | 29.16 | 740.7 | 30.20 | 767.1 | 56 | 13.3 | 90 | N | 10 | 4.5 | ..... | 1ck | 5s | W | NE | 0.57 | 14.5 | Clearing | |
| Montgomery, Alabama | 29.97 | 761.2 | 30.21 | 767.3 | 50 | 10.0 | 93 | N | 10 | 4.5 | ..... | 1k | 0 | N | ..... | 0.28 | 7.1 | Clear | |
| Morgantown, West Virginia | 29.06 | 738.1 | 30.16 | 766.1 | 33 | 0.6 | 79 | NW | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0.78 | 19.8 | Cloudy | |
| Mt. Washington, N. H. | 23.40 | 594.4 | 29.76 | 755.9 | 12 | —11.1 | 100 | NW | 54 | 24.1 | ..... | ..... | Fog | ..... | NW | 1.16 | 29.5 | Foggy | |
| Nashville, Tennessee | 29.72 | 754.9 | 30.28 | 769.1 | 41 | 5.0 | 57 | N | 2 | 0.9 | ..... | 1k | 0 | NW | ..... | 0.12 | 3.0 | Clear | |
| New Haven, Connecticut | 29.74 | 755.4 | 29.86 | 758.4 | 36 | 1.7 | 90 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 1.40 | 35.6 | Cloudy | |
| New London, Connecticut | 29.78 | 756.4 | 29.83 | 757.7 | 36 | 2.2 | 93 | N | 11 | 4.9 | ..... | ..... | 10n | ..... | Calm | 1.34 | 34.0 | Light rain | |
| New Orleans, Louisiana | 30.13 | 765.3 | 30.19 | 766.8 | 61 | 16.1 | 66 | N | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Newport, Rhode Island | 29.80 | 756.9 | 29.85 | 758.2 | 34.5 | 1.4 | 100 | NW | 9 | 4.0 | ..... | ..... | 10n | ..... | Calm | 2.02 | 51.3 | Light rain | |
| New York, New York | 29.76 | 755.9 | 29.94 | 760.5 | 36 | 2.2 | 90 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 37 | 9.4 | Cloudy | |
| Norfolk, Virginia | 29.94 | 760.5 | 30.09 | 762.0 | 48 | 8.9 | 100 | N | 3 | 1.3 | ..... | ..... | 10n | ..... | N | 0.70 | 17.8 | Light rain | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. | | Barometer. Reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. Direction. | Wind. Velocity. | | Wind. Force. | Clouds. Amount. | | Clouds. Direction. | | Rain-fall or melted snow in the past 24 hours. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10 | Up'er 0—10 | Low'r 0—10. | Upper. From— | Lower. From— | Inches. | Millimeters. | | |
| North Platte, Nebraska | 26.92 | 683.8 | 29.52 | 749.8 | 35 | 1.7 | 53 | NW | 6 | 2.7 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Olympia, Washington Ter. | 30.00 | 762.0 | 30.04 | 763.0 | 38.0 | 3.3 | 91 | S | 1 | 0.4 | ..... | ..... | 10n | ..... | ..... | 0.51 | 13.0 | Light rain | |
| Omaha, Nebraska | 28.76 | 730.5 | 29.88 | 758.9 | 36 | 2.2 | 61 | S | 11 | 4.9 | ..... | 2cs | 0 | NW | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.68 | 753.9 | 30.02 | 762.5 | 32 | 0.0 | 69 | W | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 0.24 | 6.1 | Cloudy | |
| Pembina, Dakota | 28.93 | 734.8 | 29.83 | 757.7 | 6 | —14.4 | 100 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Philadelphia, Pa | 29.89 | 759.2 | 29.94 | 760.5 | 38 | 3.3 | 91 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | 0.93 | 23.6 | Cloudy | |
| Phœnix, Arizona | 28.92 | 734.6 | 30.76 | 781.3 | 51 | 10.6 | 53 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.68 | 449.1 | 29.89 | 759.2 | 9 | —12.8 | 36 | W | 56 | 25.0 | ..... | 2k | 0 | W | ..... | 0 | 0 | Clear | |
| Ploche, Nevada | 24.13 | 612.9 | 29.90 | 759.4 | 38 | 3.3 | 64 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.30 | 744.2 | 30.14 | 765.5 | 33 | 0.6 | 89 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | 0.23 | 5.8 | Cloudy | |
| Port Huron, Michigan | 29.44 | 747.8 | 30.13 | 765.3 | 29 | — 1.7 | 78 | NW | 3 | 1.3 | ..... | ..... | 10ks | ..... | NW | 0.13 | 3.3 | Fair | |
| Portland, Maine | 29.79 | 756.7 | 29.84 | 757.9 | 29 | — 1.7 | 89 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.60 | 15.2 | Sleeting | |
| Portland, Oregon | 30.05 | 763.3 | 30.15 | 765.8 | 43.0 | 6.1 | 87 | W | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.27 | 6.9 | Light rain | |
| Prescott, Arizona | 24.84 | 630.9 | 30.20 | 767.1 | 42 | 5.6 | 50 | Calm | 0 | 0 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.14 | 740.1 | 29.96 | 761.0 | 57 | 13.9 | 80 | SE | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 30.13 | 765.3 | 30.15 | 765.8 | 70 | 21.1 | 85 | SE | 8 | 3.6 | ..... | 5ck | 2s | SW | Calm | 0 | 0 | Fair | |
| Red Bluff, California | 29.82 | 757.4 | 30.19 | 766.8 | 54 | 12.2 | 87 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0.05 | 1.3 | Cloudy | |
| Rio Grande City, Texas | 30.00 | 762.0 | 30.12 | 765.0 | 68 | 20.0 | 90 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Rochester, New York | 29.96 | 745.7 | 30.00 | 762.0 | 29 | — 1.7 | 67 | NW | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0.26 | 6.6 | Cloudy | |
| Roseburg, Oregon | 29.54 | 750.3 | 30.12 | 765.0 | 42.0 | 5.6 | 96 | W | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Cloudy | |
| Sacramento, California | 30.13 | 765.3 | 30.22 | 767.6 | 53 | 11.7 | 93 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0.03 | 0.8 | Cloudy | |
| St. Louis, Missouri | 29.64 | 752.8 | 30.25 | 768.3 | 36 | 2.2 | 80 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Marks, Florida | 30.12 | 765.0 | 30.14 | 765.5 | 62 | 16.7 | 94 | NW | 1 | 0.4 | ..... | 2k | 5s | N | N | 1.26 | 32.0 | Clearing | |
| St. Paul, Minnesota | 29.04 | 737.6 | 29.90 | 759.4 | 23 | — 5.0 | 73 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Salt Lake City, Utah | 25.81 | 655.6 | 30.14 | 765.5 | 39 | 3.9 | 55 | Calm | 0 | 0 | ..... | 1k | 0 | NW | ..... | Inap. | Inap. | Clear | |
| San Antonio, Texas | 29.50 | 749.3 | 30.09 | 764.3 | 57 | 13.9 | 31 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, Cal'fornia | 30.12 | 765.0 | 30.20 | 767.1 | 51 | 10.6 | 96 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.48 | 748.8 | 30.18 | 766.6 | 33 | 0.6 | 79 | NW | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0.09 | 2.3 | Cloudy | |
| Sandy Hook, New Jersey | 29.89 | 759.2 | 29.92 | 760.0 | 36 | 2.2 | 80 | W | 14 | 6.3 | ..... | ..... | 10s | ..... | W | 1.90 | 48.3 | Cloudy | |
| San Francisco, California | 30.16 | 766.1 | 30.22 | 767.6 | 53.3 | 11.8 | 93 | W | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0.11 | 2.8 | Foggy | |
| Santa Fé, New Mexico | 23.35 | 593.1 | 29.89 | 759.2 | 37 | 2.8 | 53 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.99 | 761.7 | 30.08 | 764.0 | 62 | 16.7 | 88 | W | 6 | 2.7 | ..... | 1cs | 0 | W | ..... | 0.04 | 1.0 | Clear | |
| Shreveport, Louisiana | 30.02 | 762.5 | 30.24 | 768.1 | 46 | 8.9 | 49 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Silver City, New Mexico | 24.39 | 619.5 | 30.67 | 779.0 | 40 | 4.4 | 56 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.00 | 762.0 | 30.04 | 763.0 | 69 | 15.6 | 94 | W | 12 | 5.4 | ..... | ..... | 10s | ..... | W | 0.16 | 4.1 | Cloudy | |
| Springfield, Massachusetts | 29.76 | 755.9 | 29.89 | 759.2 | 32 | 0.0 | 79 | N | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 1.16 | 29.5 | Threatening | |
| Stockton, Texas | 27.09 | 688.1 | 30.09 | 764.3 | 55 | 12.8 | 39 | S | 24 | 10.7 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.78 | 756.4 | 29.84 | 757.9 | 33 | 0.6 | 100 | W | 23 | 10.3 | ..... | ..... | 10n | ..... | W | 1.36 | 34.5 | Light rain | |
| Toledo, Ohio | 29.44 | 747.8 | 30.15 | 765.8 | 35 | 1.7 | 80 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Tucson, Arizona | 27.65 | 702.3 | 30.20 | 767.1 | 50 | 10.0 | 44 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.85 | 758.2 | 30.30 | 771.1 | 37.6 | 3.1 | 81 | E | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 23 | — 5.0 | 86 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Uvalde, Texas | 29.31 | 744.5 | 30.13 | 765.3 | 56 | 13.3 | 35 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 30.02 | 762.5 | 30.20 | 769.4 | 48 | 8.9 | 56 | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.16 | 4.1 | Clear | |
| Virginia City, Montana | 24.27 | 616.4 | 29.75 | 755.6 | 18 | — 7.8 | 68 | SW | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0.11 | 2.8 | Cloudy | |
| Visalia, California | 29.81 | 757.2 | 30.19 | 766.8 | 51.3 | 10.7 | 89 | W | 4 | 1.8 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Washington, D. C. | 29.88 | 758.9 | 30.00 | 762.0 | 41 | 5.0 | 82 | NW | 5 | 2.2 | ..... | 2ck | 8ks | SW | SW | 0.56 | 14.2 | Cloudy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 46 | 7.8 | 62 | NW | ..... | ..... | 1 | 10cs | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Wilmington, N. Carolina | 29.91 | 759.7 | 29.99 | 761.7 | 61 | 16.1 | 82 | W | 10 | 4.5 | ..... | ..... | 10s | ..... | W | 0.15 | 3.8 | Cloudy | |
| Winnemucca, Nevada | 25.79 | 655.0 | 30.15 | 765.8 | 33 | 0.6 | 70 | E | 8 | 3.6 | ..... | 0 | 5s | ..... | SW | 0 | 0 | Fair | |
| Wood's Holl, Mass | 29.77 | 756.1 | 29.81 | 757.2 | 36 | 2.2 | 100 | NW | 12 | 5.4 | ..... | ..... | 10n | ..... | NE | 1.41 | 35.8 | Heavy rain | |
| Yankton, Dakota | 28.50 | 723.9 | 29.79 | 756.7 | 40 | 4.4 | 56 | SW | 10 | 4.5 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.90 | 759.4 | 30.07 | 763.8 | 57 | 13.9 | 60 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.60 | 726.4 | 30.06 | 763.5 | 39 | 3.9 | 47 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.06 | 763.5 | 30.11 | 764.8 | 73 | 22.8 | 81 | SE | 1.2 | 0.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.26 | 641.6 | ..... | ..... | 65.8 | 18.8 | 80 | Calm | 0 | 0 | ..... | 1k | 1ks | ..... | ..... | 0 | 0 | ..... | Thomas Herran. |
| Navassa, W. I | 30.00 | 762.0 | 30.08 | 764.0 | 79 | 26.1 | ..... | NE | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.03 | 762.8 | 30.03 | 762.8 | 81 | 27.2 | 83 | E | ..... | ..... | 3 | 3c | 5k | E | ..... | 0 | 0 | Fair | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | 29.59 | 751.6 | 29.64 | 752.8 | —12.0 | —24.4 | 75 | NW | 12 | 5.4 | ..... | 4ck | 8s | NW | NW | 0 | 0 | Cloudy | J. Fortescue & W. Wood. |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,933 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,523 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,514 (?) ft., or 492.0 (?) m.; Graham, 2,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?),m.; Silver City, 6.898 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.83 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.14 | 765.5 | 54 | 12.2 | 54 | 12.2 | 57 | SW | 13 | 5.8 | ..... | ..... | 10 | ..... | S | 0.53 | 13.5 | ..... | ..... | Raining | |
| Navy Yard, Pensacola, Fla. | 30.25 | 768.3 | 60 | 15.6 | 60 | 15.6 | 94 | NE | 2 | 0.9 | ..... | ..... | 2 | ..... | W | 0 | 0 | ..... | ..... | Fair | |
| Navy Yard, Portsmouth, N.H | 29.85 | 758.2 | 55 | 12.8 | 29 | — 1.7 | 89 | NE | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rainy | |
| Naval Hospital, Yokohama, Japan.....* | 29.87‡ | 758.7‡ | ..... | ..... | 44.6 | 6.9 | 45 | N | ..... | ..... | 5 | ..... | 2k | ..... | N | Light | Light | ..... | ..... | Fair | |
| Adams, Panama .....* | 30.00 | 762.0 | 80 | 26.7 | 79 | 26.1 | 95 | NNW | ..... | ..... | 2 | ..... | 2 | ..... | N;W | ..... | ..... | ..... | ..... | Clear | |
| Alaska, N. 39° 32′, W. 124° 04′..... | 30.16‡ | 766.6‡ | ..... | ..... | 52 | 11.1 | 93 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.175 | 4.45 | Long | SE | Raining | |
| Alliance, Leghorn, Italy..... | 29.49‡ | 749.0‡ | ..... | ..... | 57 | 13.9 | 75 | SE | ..... | ..... | 3–4 | ..... | 10 | ..... | S;E | ..... | ..... | Light | S | Threatening | |
| Ashuelot, Hong-Kong, China. ...* | 30.15‡ | 765.8‡ | ..... | ..... | 63 | 17.2 | 57 | E | ..... | ..... | 4 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Overcast | |
| Canonicus, New Orleans, La.. .....* | 30.14 | 765.5 | 46 | 7.8 | 59 | 15.0 | 94 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Colorado. New York, N. Y..... | 29.90 | 759.4 | 38 | 3.3 | 37 | 2.8 | 90 | WSW | 3 | 1.3 | ..... | ..... | 5? | ..... | NNE | 1.44 | 36.6 | ..... | ..... | Rain & fog | |
| Constitution Lisbon, Portugal..... | 29.85‡ | 758.2‡ | ..... | ..... | 60 | 15.6 | 88 | NW | ..... | ..... | 1 | ..... | 5 | ..... | NNW | ..... | ..... | ..... | ..... | Fair | |
| Despatch. Naples, Italy..... | 29.58‡ | 751.3‡ | ..... | ..... | 59 | 15.0 | 70 | SW | ..... | ..... | 3 | ..... | 10 | ..... | SW | ..... | ..... | Smooth | ..... | Rainy | |
| Franklin, Norfolk, Va..... .....* | 30.11 | 764.8 | 66 | 18.9 | 51 | 10.6 | 86 | NW | 7.4 | 3.3 | ..... | ..... | 10 | ..... | NW | 0.07 | 1.8 | ..... | ..... | Overcast | |
| Gettysburg. Genoa, Italy ..... | 29.58‡ | 751.3‡ | ..... | ..... | 55 | 12.8 | 93 | NNE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 8 | 20. | ..... | ..... | Fair | |
| Hartford, Montevideo, Uruguay.* | 29.97 | 761.2 | 73 | 22.8 | 73 | 22.8 | 85 | NNE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.22 | 5.6 | Smooth | ..... | Cloudy | |
| Lackawana, S. 9° 38′, W. 78° 56′.....* | 29.81‡ | 757.2‡ | ..... | ..... | 68 | 20.0 | ?? | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Misty | |
| Michigan. Erie, Pa.....† | 30.00 | 762.0 | ..... | ..... | 29 | — 1.7 | 89 | NNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast | |
| Monocacy. Shanghai, China.....* | 30.48‡ | 774.2‡ | ..... | ..... | 40 | 4.4 | 74 | NNE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Monongahela Yokohama, Japan .....* | 29.87‡ | 758.7‡ | ..... | ..... | 46 | 7.8 | 62 | N | ..... | ..... | 3–5 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | ..... | Squally | |
| New Hampshire, Port Royal, S. C .....* | 30.20 | 767.1 | 66 | 18.9 | 64 | 17.8 | 78 | SW | 8 | 3.6 | ..... | ..... | 2 | ..... | SW | 0 | 0 | ..... | ..... | Fair | |
| Onward, Callao, Peru.....†* | 30.08 | 764.0 | ..... | ..... | 66 | 18.9 | 94 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty | |
| Palos, Tientsin, China.....* | 30.28 | 769.1 | 38 | 3.3 | 38 | 3.3 | 81 | SSE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 38 | 3.3 | 81 | NE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Pensacola. Valparaiso, Chili..... | 30.05‡ | 763.3‡ | ..... | ..... | 65 | 18.3 | 68 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Plymouth. N. 25° 05′, W. 59° 48′..... | 30.42‡ | 772.6‡ | ..... | ..... | 70 | 21.1 | 100 | E | ..... | ..... | 3–4 | ..... | 1 | ..... | ..... | ..... | ..... | Light | E | Pleasant | |
| Powhatan, N. 27° 12′, W. 70° 48′.. .... | 30.22‡ | 767.6‡ | ..... | ..... | 73 | 22.8 | 72 | SE | ..... | ..... | 3 | ..... | 8 | ..... | SE | 0 | 0 | Mod'ate | SE | Fair | |
| Quinnebaug, Roquetas, Spain..... | 29.58‡ | 751.3‡ | ..... | ..... | 61 | 16.1 | 77 | NW | ..... | ..... | 5 | ..... | 2 | ..... | NW | ..... | ..... | Mod'ate | NW | Fair | |
| Ranger. Amoy, China..... | 30.23‡ | 767.5‡ | ..... | ..... | 63 | 17.2 | 72 | ENE | ..... | ..... | 5–6 | ..... | 5 | ..... | NE | ..... | ..... | Rough | ..... | Cloudy | |
| Richmond. N. 17° 29′, E. 40° 12′..... | 29.94‡ | 760.5‡ | ..... | ..... | 82 | 27.8 | 60 | NE | ..... | ..... | 1–2 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear | |
| Rio Bravo, Brownsville, Texas..... | 30.09 | 764.3 | 71 | 21.7 | 70 | 21.1 | 100 | SE | ..... | ..... | 1 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Cloudy | |
| Santee, Annapolis, Md... ..... | 29.97‡ | 761.2‡ | ..... | ..... | 40 | 4.4 | 91 | W | ..... | ..... | 0–1 | ..... | 10 | ..... | W | 1.54 | 39.1 | ..... | ..... | Cloudy | |
| Saratoga, Hampton Roads, Va..... | 29.96‡ | 761.7‡ | ..... | ..... | 49 | 9.4 | 93 | WNW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | Mod'ate | Mod'ate | ..... | ..... | Showery | |
| St. Louis, League Island, Pa..... | 29.90 | 759.4 | 58 | 14.4 | 40 | 4.4 | 91 | WNW | 7 | 3.1 | ..... | ..... | 10 | ..... | NW | 1.13 | 28.7 | ..... | ..... | Cloudy | |
| Supply. Brooklyn, N. Y..... | 29.96‡ | 761.0‡ | ..... | ..... | 40 | 4.4 | 100 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Misty | |
| Trenton. Off Naples, Italy.....* | 29.60‡ | 751.8‡ | ..... | ..... | 55 | 12.8 | 93 | SSW | ..... | ..... | 4 | ..... | 10 | ..... | WSW | 0.04 | 1.0 | ..... | ..... | Squally | |
| Tuscarora. Chipequa Bay, Mexico.. | 29.94‡ | 760.5‡ | ..... | ..... | 80 | 26.7 | 66 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear | |
| Wabash, Boston, Mass..... | 29.84‡ | 757.9‡ | ..... | ..... | 31 | —0.6 | 79 | NE | 7 | 3.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast | |
| Wyoming. Alexandria, Egypt.....* | 29.85‡ | 758.2‡ | ..... | ..... | 72 | 22.2 | 76 | S | ..... | ..... | 3–4 | ..... | 5 | ..... | S | 0 | 0 | ..... | ..... | Fair | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.126 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Colima, N. 28° 18′, W. 116° 14′.† | | 30.14‡ | 766.5‡ | 59 | 15.0 | | WNW | | | 4 | | 5 | | NW | 0 | Heavy | NW | Misty | Capt. Whitebury |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | F. W. Hart, 1st Officer. |
| S. S. Granada, Capt. Austin, N. 23° 00′, W. 109° 30′.† | | 30.16‡ | 766.6‡ | 68 | 20.0 | | WSW | | | 3 | | k | | | | Long | WNW | Foggy | Capt. A. Fuller. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer |
| S. S. Zealandia, N. 25° 35′, W. 150° 35′ | | 30.13‡ | 765.3‡ | | | | SE | | | 2 | | | | SW | | Long; mod'ate | W | Fine | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; and no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Canning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, N. 34° 28′, E. 138° 45′ | | 29.86‡ | 758.4‡ | 60 | 15.6 | 55 | N | | | 6 | | k | | NE | 0 | Mod'ate | N | Squally | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 22° 17′, E. 114° 10′.† | | 30.21‡ | 767.3‡ | | | | NE | | | 3 | | k | | SW | Blank | | | | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, N. 38° 07′, W. 132° 00′ | | 29.99‡ | 761.7‡ | 57 | 13.9 | 94 | S | | | 4 | | 10n | | | | 2 | W | Overcast | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andreesen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 48° 21′, W. 16° 25′ | | 29.97‡ | 761.2‡ | | | | NNE | | | 6 | | | | N | | Rough | N | Cloudy | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 50° 33′, W. 23° 29′ | ..... | 30.21‡ | 767.3‡ | 48 | 8.9 | ..... | SW | ..... | ..... | 6 | ..... | 6 | ..... | SW | Mod'ate | Mod'ate | W | Cloudy. ..... | Captain Sargent. Wm. Shackford, Chief Officer. |
| S. S. Ohio | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. H. Dodge. |
| S. S. Pennsylvania, Capt. Harris | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Randle. |
| S. S. Switzerland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jackson. |
| S. S. Vaderland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Nichols. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Richardson. |
| S. S. Hibernian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, N. 39° 33,′ W. 73° 08′ | ..... | 29.88‡ | 758.9‡ | 41 | 5.0 | 91 | N | 5 | 2.2 | ..... | ..... | 10d | ..... | N | 0.85 in. or 21.6mm | Swell | S | Cloudy ..... | Capt. James Jorgensen. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

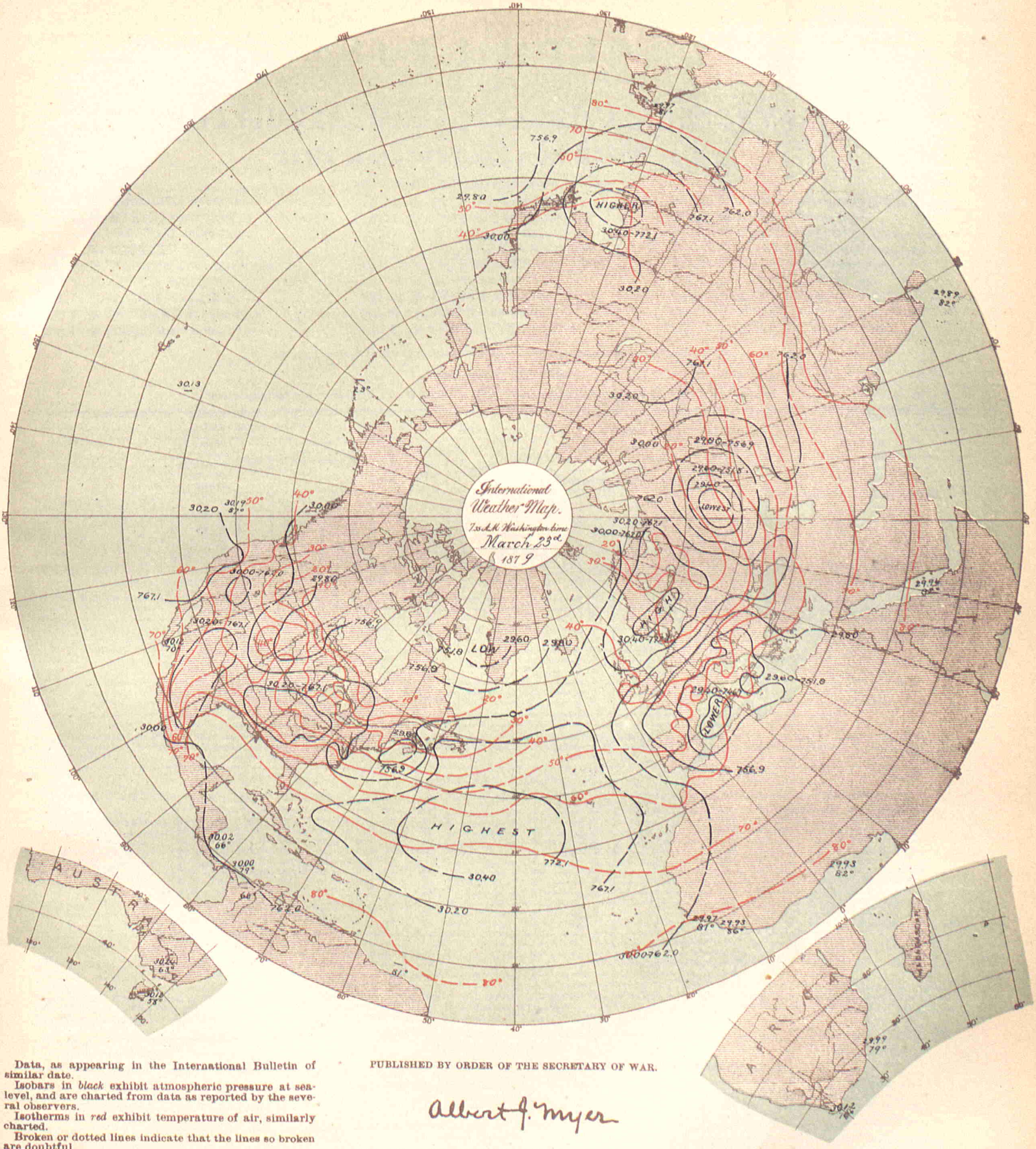
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 24, 1879.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | 30.10 | 764.6 | 61.2 | 16.2 | 88 | SW | | | 1 | | 10 | | | 0.472 | 12.0 | Covered | |
| Nemours | | | 29.80 | 757.0 | 59.9 | 15.5 | 96 | WNW | | | 1 | | 10 | | | 0.051 | 1.3 | Raining | Kesxuche. |
| Algiers | | | 29.72 | 755.0 | 61.5 | 16.4 | 52 | W | | | 3 | | 10 | | | 0.244 | 6.2 | Covered | Tourilliere. |
| La Calle | | | 29.67 | 753.7 | 61.3 | 16.3 | 59 | NW | | | 5 | | 8 | | | 0 | 0 | Very cloudy | Foufrede. |
| Tunis | | | 29.66 | 753.3 | 60.8 | 16.0 | 58 | NW | | | 8 | | 8 | | | 0.024 | 0.6 | Very cloudy | Jacques. |
| Sfax | | | 29.80 | 757.0 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 29.84 | 757.9 | 55.4 | 13.0 | 60 | SW | | | 2 | | 8 | | | 0.193 | 4.9 | Very cloudy | Herbin. |
| Tebessa | | | 29.80 | 756.8 | 55.9 | 13.3 | 58 | W | | | 5 | | 5 | | | 0.067 | 1.7 | Cloudy | Watrin. |
| Geriville | | | 29.79 | 756.7 | 50.4 | 10.2 | 90 | W | | | 4 | | 8 | | | 0 | 0 | Very cloudy | Brugniaux. |
| Laghouat | | | 29.86 | 758.4 | 59.7 | 15.4 | 39 | W | | | 4 | | 2 | | | 0 | 0 | Fair | Bertrand. |
| Biskra | | | 29.81 | 757.1 | 67.1 | 19.5 | 30 | NW | | | 4 | | 2 | | | 0 | 0 | Fair | Chanvaux. |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.10 | 739.0 | 29.66 | 753.3 | 39.6 | 4.2 | 78 | NE | | | 2 | | 10 | | | 0.063 | 1.6 | Rain & snow | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.15 | 740.3 | 29.95 | 760.7 | 28.8 | — 1.8 | 88 | E | | | 6 | | 10 | | | 0.004 | 0.1 | Snowy | Dr. Wierabiski |
| Eperies | 28.67 | 733.2 | 29.79 | 756.6 | 29.1 | — 1.6 | | N | | | 4 | | 10 | | | 0.220 | 5.60 | | Julius Mikolik. |
| Gratz | 28.44 | 722.4 | 29.71 | 754.7 | 38.5 | 3.6 | 77 | S | | | 3 | | 10 | | | 0.322 | 8.2 | | Andreas Rospini. |
| Hermannstadt | 28.18 | 715.8 | 29.60 | 751.7 | 51.4 | 10.8 | 61 | SE | | | 3 | | 10 | | | 0.057 | 1.45 | | Prof. A. Gottschling. |
| Kremsmünster | 28.38 | 720.8 | 29.78 | 756.4 | 28.9 | — 1.7 | 84 | ENE | | | 4 | | 10 | | | 0.039 | 1.0 | | Prof. C. Wagner. |
| Lemberg | 28.03 | 734.8 | 29.08 | 761.6 | 22.1 | — 5.5 | 100 | SE | | | 2 | | 10 | | | | | | Dr. T. Stanecki. |
| Pola | 29.39 | 746.6 | 29.80 | 749.4 | 54.3 | 12.4 | 61 | E | | | 3 | | 9 | | | 0 | 0 | | I.R.Hydrographic Office. |
| Szathmar | 29.20 | 741.7 | 29.67 | 753.7 | 39.7 | 4.3 | 96 | NW | | | 4 | | 10 | | | 0.268 | 6.8 | | Julius Csics, S. J. |
| Szegedin | | | | | | | | | | | | | | | | | | | Karl Stancel. |
| Trieste | 29.45 | 748.0 | 29.55 | 750.6 | 52.5 | 11.4 | 58 | E | | | 1 | | 9 | | | 0 | 0 | | P. Busin. |
| Vienna | 29.06 | 738.2 | 29.82 | 757.3 | 30.0 | — 1.1 | 86 | N | | | 2 | | 10 | | | 0.012 | 0.3 | | I. R. Central Met. Obs'y. |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.8 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.60 | 751.7 | 29.80 | 757.0 | 34.2 | 1.2 | 64 | E | | | 5 | 5 | 5 | E | E | 0.002 | 0.05 | Light snow | Royal Observatory. |
| Furnes | 29.81 | 757.2 | 29.84 | 757.8 | 36.1 | 2.3 | 66 | E | | | 4 | | 8 | | | 0.004 | 0.1 | Snowing | M. E. de Cae. |
| Maeseyck | 29.71 | 754.5 | 29.83 | 757.7 | 34.9 | 1.6 | 87 | E | | | 4 | | 10 | | | 0 | 0 | | M. Pierrot. |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:9, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.19 | 766.8 | 30.30 | 769.6 | 34.2 | 1.2 | | SE | 20 | 8.9 | | | 9 | | | 0 | 0 | Overcast | W. Boswell. |
| Ardrossan | 30.12 | 765.0 | 30.14 | 765.5 | 37 | 2.8 | | E | | | 5 | | 8 | | | | | Overcast | William McNeil. |
| Armagh, Observatory | | | 30.08 | 764.0 | 35.0 | 1.7 | | ENE | 16 | 7.2 | | | 10 | | | | | Snowing | S. Call. |
| Bidston, (Liverpool Obs.) | | | 30.01 | 762.2 | 32.9 | 0.5 | | ENE | 33 | 14.8 | | | 10 | | | | | Overcast | John Hartnup. |
| Bolton, (Sharples) | | | 30.03 | 762.8 | 32.8 | 0.4 | | ENE | 48 | 21.5 | | | 10 | | | | | Squally | Thomas Mackereth. |
| Bradford, Yorkshire | 29.67 | 753.6 | 30.06 | 763.5 | 33.1 | 0.6 | | E | | | 6 | | 10 | | | 0 | 0 | Overcast | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.98 | 761.5 | 30.02 | 762.5 | 81.0 | 27.2 | | NE | | | 2 | | 3 | | | | | D. clouds | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | | | 29.95 | 760.7 | 33.0 | 0.6 | | ENE | | | 2 | | 10 | | | | | Snowy | H. Todd. [C. |
| Cardington | | | 29.89 | 759.2 | 33.0 | 0.6 | | E | | | 5 | | 10 | | | | | Overcast | John McLaren. |
| Chatham, School M. E. | 29.75 | 755.6 | 29.88 | 758.9 | 31.2 | — 0.4 | | NE | | | 5 | | 10 | | | | | Snowing | Corpl. Daly, R. E. |
| Dartmoor | 28.27 | 718.0 | 29.80 | 756.9 | 30.0 | — 1.1 | | NE | | | 6 | | 8 | | | | | Squally | Alexander Watt. |
| Donaghadee | 30.06 | 763.5 | 30.11 | 764.8 | 36 | 2.2 | | ESE | | | 5 | | 3 | | | | | D. clouds | J. Mac Gowan. |
| Dover | 29.79 | 756.7 | 29.81 | 757.2 | 34 | 1.1 | | ENE | | | 6 | | 7 | | | | | Gloomy | J. Costello. |
| Falmouth, Observatory | 29.59 | 751.6 | 29.82 | 757.4 | 35.5 | 2.1 | | ENE | | | 5 | | 10 | | | | | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.68 | 703.1 | 30.10 | 764.5 | 75.2 | 24.0 | | E | | | 2 | | 4 | | | | | D. clouds | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.71 | 754.6 | 29.94 | 760.5 | 85 | 29.4 | | Calm | | | 0 | | 3 | | | | | D. clouds | |
| Galway, Queen's College | | | 29.93 | 760.2 | 37 | 2.8 | | E | | | 4 | | 10 | | | | | Overcast | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.73 | 755.1 | 29.78 | 756.4 | 59.7 | 15.4 | | W | | | 4 | | 2 | | | | | Blue sky | Sergt. Wm. Allen, A. H. C. |
| Glasgow, Observatory | 29.95 | 760.7 | 30.16 | 766.1 | 34.2 | 1.2 | | NE | | | 6 | | | | | | | Gloomy | D. G. Maclean. |
| Great Yarmouth | 29.95 | 760.7 | 29.96 | 761.0 | 33 | 0.6 | | E | | | 6 | | 6 | | | | | D. clouds | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.70 | 754.4 | 29.89 | 759.2 | 30.5 | — 0 8 | | ENE | | | 4 | | 10 | | | | | Showery | The Staff, for G. B. Airy. |
| Guernsey | 29.52 | 749.8 | 29.77 | 756.1 | 36 | 2.2 | | NE | | | 6 | | 10 | | | | | Raining | Dr. S. E. Hoskins, F.R.S. |
| Helston | 29.82 | 757.4 | 29.94 | 760.5 | 38 | 3.3 | | NE | | | 4 | | 10k | | | 0.3 | 8. | Gloomy | M. P. Moyle. |
| Holyhead | 29.92 | 760.0 | 29.99 | 761.7 | 35 | 1.7 | | E | | | 6 | | 4 | | | | | D. clouds | John Tilston. |
| Jersey | 29.44 | 747.8 | 29.74 | 755.4 | 36.6 | 2.6 | | ENE | | | 5 | | 10 | | | | | Misty | J. Fisher. |
| Kew, Observatory | 29.86 | 758.4 | 29.89 | 759.2 | 31.4 | — 0.3 | | NE | 27 | 12.1 | | | 10 | | | Blank | Blank | Gloomy | The Meteorological Of. |
| Leicester, Museum | 29.71 | 754.6 | 29.98 | 761.5 | 32.8 | 0.4 | | NE | | | 4 | | 10 | | | | | Overcast | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.86? | 758.4? | 29.94? | 760.5? | 62 | 16.7 | | W | | | 3 | | 4k | | | | | D. clouds | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 30.16 | 766.1 | 30.26 | 768.6 | 35 | 1.7 | | ESE | | | 2 | | 5 | | | | | ½ clouded | W. D. Penny. |
| Nassau, (Bahamas) | | | 30.16 | 766.1 | 76.8 | 24.9 | | SE | | | 1 | | 5 | | | | | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.82 | 757.4 | 30.02 | 762.5 | 32.7 | 0.4 | | NE | | | 6 | | 10d | NE | | 0 | 0 | Overcast | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.42 | 747.2 | 29.96 | 761.0 | 31.3 | — 0.4 | | ENE | | | 6 | | 9 | | | | | D. clouds | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | | | 29.92 | 760.0 | 30 | — 1.1 | | ENE | | | 4 | | 10 | | | | | Overcast | H. E. Bellamy. |
| Plymouth | 29.74 | 755.4 | 29.82 | 757.4 | 36.5 | 2.5 | | NE | | | 5 | | 10 | | | | | Overcast | John Merrifield. |
| Roche's Point | 29.88 | 758.9 | 29.91 | 759.7 | 36 | 2.2 | | ENE | | | 5 | | 10 | | | | | Overcast | W. Kennedy. |
| Saint Ann's Head | 29.74 | 755.4 | 29.91 | 759.7 | 33 | 0.6 | | ENE | | | 5 | | 10 | | | | | Overcast | John C. Walker. |
| Sandwick Manse, (Orkneys) | | | 30.31 | 769.9 | 35.2 | 1.8 | | SE | 23 | 10.3 | | | 10 | | | | | Overcast | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery, (Turkey) | | | 29.72 | 754.6 | 56.6 | 13.7 | | Calm | | | 0 | | 9 | | | Blank | Blank | D. clouds | W. H. Lyne. |
| Sheffield | 29.78 | 756.4 | 30.08 | 764.0 | 31.5 | — 0.3 | | NE | | | 4 | | 10 | | | 0.03 | 0.8 | Overcast | W. F. Cooper. |
| Silloth Rectory | 30.09 | 764.3 | 30.12 | 765.0 | 36.2 | 2.3 | 69 | SE | | | 7 | | 7 | | | 0 | 0 | D. clouds | Francis Redford, A. M |
| Stonyhurst, Observatory | 29.64 | 752.3 | 30.04 | 763.0 | 32.4 | 0.2 | | ENE | | | 4 | | 10 | | | | | Overcast | Rev. S. J. Perry. |
| Stratfield Turgiss | 29.67 | 753.6 | 29.89 | 759.2 | 31.9 | — 0 1 | | NE | | | 3–4 | | 10 | | | | | Squally | C. H. Griffith, F. R. S. |
| Thurso | 30.23 | 767.8 | 30.30 | 769.6 | 36 | 2.2 | | SE | | | 3 | | 10 | | | | | Gloomy | John Trotter. |
| Truro, Royal Institution | 29.76 | 755.9 | 29.83 | 757.7 | 40 | 4.4 | | NE | | | 4 | | 10 | | | | | Gloomy | W. Newcombe. |
| Valencia, Observatory | 29.88 | 758.9 | 29.90 | 759.4 | 42.1 | 5.6 | | E | 23 | 10.3 | | | 4 | | | | | D. clouds | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.00 | 762 0 | 30.04 | 763.0 | 65.2 | 29.6 | 38 | SSE | 9 | 4.0 | | 0 | 0 | | | 0 | 0 | Fine | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | | | 29.64 | 752.8 | 61.0 | 16.1 | 88 | NW | | | 1 | | 10kn | | | 0 | 0 | Cloudy | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | | | 30.22 | 767.6 | 34.0 | 1.1 | | E | | | 4 | | 10ks | | | 0 | 0 | Overcast | Andrew Gibb. |
| Mauritius, Observatory | | | | | | | | | | | | | | | | | | | C. Meldrum. |
| Melbourne, Observatory | 29.84 | 757.9 | 29.93 | 760.2 | 77.8 | 25.4 | 35 | N | 16 | 7.2 | | | 0 | | | 0 | 0 | Fine | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | | | 30.18 | 766.6 | 38 | 3.3 | | SE | | | 4 | 5 | 0 | SE | | 0 | 0 | | J. Youngclause. |
| North Unst, (Shetland Is.) | | | 30.37 | 771.4 | 37 | 2.8 | | SSW | | | 2 | 4 | 2 | SSE | | | | | Robert Burnet. |

Note—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

| British Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 24', E. 27° 19' | | | 29.74‡ | 755.4‡ | 57 | 13.9 | | SW | | | 1 | | 4 | | | | | D. clouds | Capt. W. J. L. Wharton. |
| Brig Alliance | | | | | | | | | | | | | | | | | | | Capt. W. Scott. |
| S. S. Amanda, N. 35° 50', E. 15° 00' | | | 29.62‡ | 752.3‡ | 62 | 16.7 | | W | | | 6 | | 1 | | | | | Blue sky | Capt. B. Boyes. |
| Barque Belle Isle, N. 36° 28', W. 54° 30' | | | 30.48‡ | 774.2‡ | 65 | 18.3 | | S | | | 6 | | 3 | | | 4 | W | D. clouds | Capt. A. J. Brown. |
| Ship British Commodore, —— City of Agra, N. 32° 15' W. 44° 40' | | | 30.56‡ | 776.2‡ | 66.5 | 19.2 | | ENE | | | 4 | | 4 | | | | | D. clouds | Capt. J. W. Thorne. Capt. Thos. Young. |
| Barque Commewyne, N. 41° 45', W. 33° 25' | | | 30.46‡ | 773.4‡ | 55.5 | 13.1 | | N | | | 3 | | 3 | | | | | D. clouds | Capt. A. Buchan. |
| Barque Fedalina, N. 33° 00', W. 23° 29' | | | 30.20 | 767.1 | 62 | 16.7 | | NW | | | 6 | | 4 | | | 3 | NNE | D. clouds | Capt. H. L. Fox. |
| Barque Mertole | | | | | | | | | | | | | | | | | | | Capt. E. W. Turner. |
| S. S. Nizam, N. 5° 50', E. 86° 02' | | | 29.91‡ | 759.7‡ | 79 | 26.1 | | E | | | 2 | | 8 | | | | | Showery | Capt. Barlow. |
| S. S. Strathleven, N. 34° 54', E. 20° 07' | | | 29.61‡ | 752.1‡ | 64 | 17.8 | | SW | | | 4 | | 4 | | | | | D. clouds | Capt. C. W. Pearson. |
| S. S. Wyberton | | | | | | | | | | | | | | | | | | | Capt. W. R. McMontry. |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.30 | 668.0 | 30.02 | 762.5 | 67.6 | 19.8 | 79 | SE | ..... | ..... | 1 | 4c;k;s | ..... | ..... | ..... | Inap | Inap. | ..... | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.4 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.25 | 768.3 | 30.30 | 769.5 | 32.2 | 0.1 | 65 | ESE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 30.21 | 767.4 | 30.23 | 767.9 | 31.8 | — 0.1 | 54 | E | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.56 | 750.9 | 29.61 | 752.0 | 14.2 | — 9.9 | 67 | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 30.26 | 768.6 | 30.30 | 769.5 | 40.3 | 4.6 | 67 | SSE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 30.16 | 766.0 | 30.33 | 770.3 | 30.9 | — 0.6 | 85 | E | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.17 | 740.9 | 29.72 | 754.9 | 36.7 | 2.6 | 93 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Collignon, Director. |
| Amiens, Normal School | 29.61 | 752.0 | 29.72 | 754.8 | 45.3 | 7.4 | 85 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bonvallet, Director. |
| Avignon, Normal School | 29.48 | 748.8 | 29.56 | 750.8 | 60.1 | 15.6 | 62 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | M. Giraud, Director. |
| Bar-sur-Seine | 29.09 | 738.9 | 29.66 | 753.4 | 37.9 | 3.3 | 89 | ESE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Inap. | Inap. | Misty | C. Saillard, Director. |
| Beauvais, Normal School | 29.47 | 748.5 | 29.77 | 756.1 | 35.6 | 2 | 71 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | E | 0 | 0 | Covered | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 28.74 | 730.1 | 29.65 | 753.0 | 44.2 | 6.8 | 73 | NE | ..... | ..... | 3 | ..... | 10 | ..... | E | 0 | 0 | Covered | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.81 | 731.8 | 29.67 | 753.7 | 47.1 | 8.4 | 70 | N | ..... | ..... | 2 | ..... | 10n | N | N | 0 | 0 | Covered | M. Marlot, Director. |
| Bourges, Normal School | 29.09 | 738.9 | 29.65 | 753.2 | 41.7 | 5.4 | 76 | N | ..... | ..... | 2 | ..... | 10 | N | N | 0 | 0 | Covered | A. Waquet, Director |
| Brest, Naval Observatory | 29.42 | 747.3 | 29.66 | 753.4 | 41.0 | 5.0 | 71 | NE | ..... | ..... | 2 | ..... | 10 | ..... | NE | 0.010 | 0.26 | ..... | M.de Rermarez, Director |
| Carcassonne, Normal School | 29.19 | 741.4 | 29.60 | 751.9 | 53.6 | 12 | 72 | NW | ..... | ..... | 2 | ..... | 2 | NW | NW | 0.08 | 2. | Slightly cl'dy | September, Director. |
| Caen, Normal School | 29.65 | 753.2 | 29.73 | 755.1 | 37.4 | 3 | 66 | NE | ..... | ..... | 2 | ..... | 8 | ..... | ENE | 0 | 0 | Very cloudy | M. Lair, Director. |
| Chartres, Normal School | 29.09 | 738.9 | 29.67 | 753.7 | 36.3 | 2.4 | 89 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | W | 0.12 | 3. | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.41 | 747.1 | 29.74 | 755.4 | 35.2 | 1.8 | 67 | SE | ..... | ..... | 3 | ..... | 8 | SE | SE | ..... | ..... | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Ob | 28.23 | 717.0 | 29.60 | 751.9 | 43.3 | 6.3 | 82 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.83 | 732.2 | 29.72 | 754.9 | 32.9 | 0.5 | 92 | E | ..... | ..... | 4 | ..... | 8kn | ..... | E | 0 | 0 | Misty | Dr. Coulet, Director. |
| Commune de Grésque* | 28.43 | 722.0 | 29.57 | 751.0 | 58.8 | 14.9 | 61 | W | ..... | ..... | 2 | ..... | 8 | NW | W | 0.024 | 0.6 | ¾ covered | M. Kina, Director. |
| Grenoble, Normal School | 28.85 | 732.7 | 29.61 | 752.1 | 49.3 | 9.6 | 76 | NW | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.205 | 5.20 | Covered | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.44 | 747.7 | 29.65 | 753.2 | 44.6 | 7.0 | 88 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Mouillot, Director. |
| Le Mans, Normal School | 29.40 | 746.8 | 29.72 | 754.8 | 39.0 | 3.9 | 73 | E | ..... | ..... | 2 | ..... | 8 | ..... | E | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.72 | 729.4 | 29.63 | 752.7 | 47.3 | 8.5 | 76 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Misty | Baudry, Director. |
| Lorient, Naval Observatory | 29.60 | 751.8 | 29.70 | 754.3 | 41.0 | 5.0 | 93 | NE | ..... | ..... | 2 | ..... | ..... | ..... | N | 0 | 0 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Mirecourt, Normal School | 28.60 | 726.5 | 29.69 | 754.0 | 36.7 | 2.7 | 89 | NE | ..... | ..... | 1 | ..... | km | ..... | SW | 0 | 0 | ..... | M. Barbier, Director. |
| Nismes, Normal School | 29.34 | 745.2 | 29.54 | 750.2 | 63.0 | 17.2 | 52 | NW | ..... | ..... | 1 | ..... | 2 | ..... | N | 0.32 | 8. | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 28.53 | 724.7 | 29.59 | 751.6 | 51.8 | 11 | 63 | N | ..... | ..... | 1 | ..... | 10s | N | N | 0.43 | 11. | Raining | M. Cantier, Director. |
| Puy de Dome (Summit, Obs | 24.71 | 627.6 | ..... | ..... | 30.9 | — 0.6 | 100 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.61 | 752.2 | 29.65 | 753.0 | 49.1 | 9.5 | 70 | ESE | ..... | ..... | 1 | ..... | 10 | ESE | ESE | 0 | 0 | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.59 | 751.6 | 29.68 | 753.8 | 36.5 | 2.5 | 61 | ENE | ..... | ..... | 4 | ..... | 8 | ..... | NE | 0 | 0 | Very cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.66 | 753.4 | 29.69 | 754.2 | 37.6 | 3.1 | 76 | ENE | ..... | ..... | 2 | ..... | 8 | NE | NE | 0 | 0 | Very cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.54 | 750.4 | 29.71 | 754.6 | 36.9 | 2.6 | 69 | E | ..... | ..... | 1-2 | ..... | ..... | ..... | ENE;NE | 0 | 0 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.49 | 723.7 | 29.56 | 750.8 | 51.8 | 11 | 41 | S | ..... | ..... | 2 | ..... | 10 | * | ..... | 0 | 0 | Covered | T. Huguet, Director. |
| Versailles Observatory | 29.20 | 741.7 | 29.69 | 754.2 | 35.2 | 1.8 | 67 | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.057 | 1.34 | Snowing | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S | 28.89 | 733.9 | 29.58 | 751.4 | 51.8 | 11 | 92 | E | ..... | ..... | 1 | ..... | 5 | ..... | SW | 0 | 0 | Cloudy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.86 | 758.5 | 29.89 | 759.2 | 75.6 | 24.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.055 | 14. | ..... | L'Abbé Marc ésl. |
| Lyons Obs'y, (Park Station) | 29.00 | 736.7 | 29.02 | 752.3 | 47.3 | 8.5 | 66 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 24.43 | 620.5 | 29.74 | 755.5 | 39.2 | 4.0 | 66 | W | 13.0 | 5.8 | ..... | ..... | 10 | ..... | ..... | 0.669 | 17.0 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.54 | 750.2 | 59.0 | 15.0 | 76 | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | Covered | Dr. A. Nieper, Jr. |
| Paris, Montsouris Obs'y | 29.43 | 747.4 | ..... | ..... | 35.6 | 2.0 | 71 | ENE | ..... | ..... | 3 | ..... | 10 | ..... | ENE | 0.004 | 0.1 | Hailing | Marié Davy, Director. |
| Perpignan | 29.50 | 749.3 | 29.61 | 752.0 | 53.1 | 11.7 | 66 | NE | 16.8 | 7.5 | ..... | ..... | 8 | ..... | NW | 1.295 | 32.9 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. I | 22.09 | 560.1 | ..... | ..... | 29.5 | — 1.4 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.587 | 14.9 | Snowy | Gen'l de Nansouty. |
| Toulouse, Observatory | 28.95 | 735.4 | 29.67 | 753.6 | 49.6 | 9.8 | 84 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.091 | 2.3 | ..... | M. Mercadier Juller. |
| Tours | 29.47 | 748.6 | 29.67 | 753.6 | 41.7 | 5.4 | 73 | E | ..... | ..... | 2 | ..... | 10 | ..... | E | 0 | 0 | ..... | Cousin-Marquete. |
| Zi-Ka-Wei, (near Shanghai) | 30.26 | 768.5 | 30.28 | 769.1 | 44.1 | 6.7 | 87 | ESE | 13.7 | 6.1 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a.m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p.m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grésque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,589.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.97 | 735.7 | 29.80 | 757.0 | 32.9 | 0.5 | 75 | E | | | 5 | | 8 | E | | 0.012 | 0.3 | | Prof. Dr. Hoh. |
| Berlin | 29.93 | 760.3 | 30.11 | 764.9 | 30.4 | — 0.9 | 44 | E | | | 5 | | 0 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.48 | 748.8 | 30.01 | 762.3 | 30.0 | — 1.1 | 49 | NE | | | 3 | | 8 | | | 0 | 0 | | Royal University Obe'y |
| Carlsruhe | 29.29 | 744.0 | 29.73 | 755.1 | 35.6 | 2.0 | 72 | NE | | | 2 | | 10 | E | | 0 | 0 | | Albert Senz. |
| Cassel | 29.30 | 744.2 | 29.91 | 759.6 | 31.3 | — 0.4 | 53 | E | | | 5 | | 6 | E | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.69 | 754.1 | 29.85 | 758.2 | 34.7 | 1.5 | 47 | E | | | 6 | | 8 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.45 | 748.1 | 29.82 | 757.5 | 34.3 | 1.3 | | NNE | | | 3 | | 10 | | | 0.039 | 1.0 | | Physical Society. |
| Friedrichshafen | 28.21 | 716.4 | 29.66 | 753.3 | 39.9 | 4.4 | 69 | NE | | | 6 | | 10 | ESE | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 30.06 | 763.4 | 30.13 | 765.3 | 29.5 | — 1.4 | 38 | ENE | | | 5 | | 0 | | | 0 | 0 | Clear | Captain F. Hegemann. |
| Kiel | 30.17 | 766.4 | 30.19 | 766 8 | 31.3 | — 0.4 | 57 | E | | | 2 | | 2 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.14 | 765.6 | 30.23 | 767.8 | 30.6 | — 0.8 | 53 | NE | | | 4 | | 0 | | | 0 | 0 | | Prof. E Luther. |
| Köslin | | | 30.17 | 766.4 | 32.7 | 0.4 | | E | | | 6 | | 1 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.54 | 750.2 | 29.98 | 761.4 | 31.3 | — 0.4 | 66 | E | | | 6 | | 7 | E | | 0 | 0 | | Prof. Bruhns, Privy Counsellor. |
| Memel, Naval School | 30.23 | 767.7 | 30.27 | 768.9 | 29.1 | — 1.6 | 44 | NE | | | 4–5 | | 0 | | | | | | Skalweit. |
| Neufahrwasser | 30.24 | 768.1 | 30.26 | 768.5 | 30.7 | — 0.7 | 73 | NE | | | 3 | | 1 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.85 | 758.2 | 30.16 | 766.0 | 27.0 | — 2.8 | 48 | E | | | 9 | | 1 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.15 | 740.5 | 29.72 | 754.8 | 39.9 | 4.4 | 62 | NE | | | 3 | | 10 | E | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 28.74 | 730.0 | 29.71 | 754.6 | 35.6 | 2.0 | 68 | E | | | 3 | | 10 | | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.21 | 741.9 | 29.72 | 755.0 | 34.3 | 1.3 | 77 | NE | | | 7 | | 10 | | | 0.044 | 1.13 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.21 | 716.6 | 29.78 | 756.3 | 32.2 | 0.1 | 94 | E | 16 | 7 | | | 10 | | ESE | 0.118 | 3.0 | Foggy | Dr. Van Bebber. |
| Wustrow, Naval School | 30.18 | 766.6 | 30.21 | 767.2 | 32.0 | 0.0 | 89 | E | | | 5 | | 8k | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.32 | 744.8 | 29.69 | 754.2 | 69.1 | 20.6 | | SW | | | 3.0 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.88 | 758.9 | 29.93 | 760.2 | 79.0 | 26.1 | 55 | WNW | 23 | 10.3 | | | 3 | | | 0 | 0 | D. clouds | |
| Deesa | 29.37 | 745.9 | 29.83 | 757.6 | 93.8 | 34.3 | 14 | W | 7.9 | 3.5 | | | 8 | W | | 0 | 0 | D. clouds | |
| Bombay | 29.79 | 756.7 | 29.83 | 757.6 | 85.1 | 29.5 | 60 | NNW | 15 | 6.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.05 | 737.8 | 29.78 | 756.5 | 85.0 | 29.4 | 32 | Calm | 1.8 | 0.6 | | | 10 | | | 0 | 0 | Overcast | |
| Belgaum | 27.33 | 694.2 | 29.62 | 757.5 | 85.6 | 29.8 | 64 | W | 10.0 | 4.5 | | | 2 | | SE by E | 0 | 0 | | |
| Roorkee | 28.86 | 733.2 | 29.75 | 755.6 | 87.8 | 31.0 | 16 | NW | 4.3 | 1.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Agra | 29.30 | 744.1 | 29.85 | 758.2 | 90.7 | 32.6 | 16 | W | | | | | | | | 0 | 0 | | |
| Nagpur | 28.81 | 731.8 | 29.82 | 757.5 | 92.5 | 33.6 | 13 | E | 2.6 | 1.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.44 | 747.7 | 29.81 | 757.1 | 87.2 | 30.7 | 39 | NW | 3.1 | 1.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.52 | 749.7 | 29.82 | 757.5 | 89.2 | 31.8 | 30 | NW | 4.3 | 1.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.65 | 753.2 | 29.83 | 757.8 | 84.4 | 29.1 | 35 | W | 0.9 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.84 | 707.2 | 29.84 | 757.9 | 83.6 | 28.7 | 14 | NW | 8.1 | 3.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.70 | 755.9 | 29.84 | 757.9 | 88.6 | 31.4 | 50 | S | 4.2 | 1.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.81 | 757.2 | 29.84 | 757.8 | 82.7 | 28.2 | 36 | WNW | 1.0 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.49 | 749.0 | 29.87 | 758.8 | 82.1 | 27.8 | 26 | N | 3.3 | 1.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.81 | 757.2 | 29.90 | 759.6 | 81.1 | 27.3 | 77 | Calm | 4.7 | 2.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Sibsagar | 29.58 | 751.2 | 29.92 | 759.9 | 70.0 | 21.1 | 66 | Calm | 1.0 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.49 | 723.7 | 29.83 | 757.7 | 91.1 | 32.8 | 9 | Calm | 2.2 | 1.0 | | | 0 | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.6 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the cooperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.15 | 740.5 | 29.57 | 751.0 | 50.5 | 10.8 | 58 | SE | 10.5 | 4.7 | ..... | ..... | 4 | ..... | ..... | 0.177 | 4.5 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.00 | 736.6 | 29.52 | 749.7 | 55.4 | 13.0 | 70 | SSE | ..... | ..... | 2 | ..... | 7 | SE | ..... | 0.024 | 0.6 | ..... | Prof. Schiaparelli. |
| Padua | 29.44 | 747.8 | 29.55 | 750.6 | 52.0 | 11.1 | 73 | ENE | 9.4 | 4.2 | ..... | ..... | 10 | N | ..... | 0.287 | 7.3 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.60 | 726.4 | 29.50 | 749.4 | 52.7 | 11.5 | 77 | ESE | 1.8 | 0.8 | ..... | ..... | 6 | WNW | ..... | 0.098 | 2.5 | ..... | Prof. P. F. Denza. |
| Genoa | 29.31 | 744.5 | 29.50 | 749.4 | 57.0 | 14.2 | 59 | NW | 5.6 | 2.5 | ..... | ..... | 4 | SE | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi |
| Mondovi | 27.62 | 701.4 | 29.52 | 749.9 | 51.3 | 10.7 | 68 | E | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.44 | 747.8 | 29.49 | 749.1 | 53.6 | 12.0 | 58 | NW | 13.7 | 6.1 | ..... | ..... | 10 | NW | ..... | 0.173 | 4.4 | ..... | Prof. Luigi Guidi. |
| Florence | 29.22 | 742.1 | 29.47 | 748.6 | 60.8 | 16.0 | 43 | N | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.118 | 3.0 | ..... | Cav. F. Meucci |
| Leghorn | 29.37 | 745.9 | 29.45 | 748.1 | 58.3 | 14.6 | 61 | ESE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.016 | 0.4 | ..... | Prof. P. Monte. |
| Rome | 29.25 | 743.0 | 29.43 | 747.4 | 54.1 | 12.3 | 83 | N | 1.8 | 0.8 | ..... | ..... | 10 | ..... | ..... | 0.087 | 2.2 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.22 | 742.1 | 29.47 | 748.5 | 58.6 | 14.8 | 88 | S | 24.8 | 11.1 | ..... | ..... | 10 | S | ..... | 0.118 | 3.0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.60 | 726.4 | 29.48 | 748.8 | 53.6 | 12.0 | 77 | SE | 8.1 | 1.4 | ..... | ..... | 10 | ..... | ..... | 0.500 | 12.7 | ..... | Prof. D. Conti. |
| Cagliari | 29.30 | 744.1 | 29.49 | 749.0 | 60.8 | 16.0 | 55 | W | ..... | ..... | 4 | ..... | 5 | N | ..... | 0.335 | 8.5 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.19 | 741.4 | 29.44 | 747.8 | 64.5 | 12.5 | 79 | WSW | 15.4 | 6.9 | ..... | ..... | 10 | ..... | ..... | 0.130 | 3.3 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.46 | 748.3 | 29.53 | 750.1 | 61.9 | 16.6 | 59 | WSW | 24.8 | 11.1 | ..... | ..... | 8 | W | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 28.91 | 734.2 | 29.46 | 748.3 | 52.9 | 11.6 | 80 | WSW | 1.8 | 0.8 | ..... | ..... | 10 | ..... | ..... | 0.319 | 8.1 | ..... | Prof. T. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the cooperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.40 | 772.1 | 30.42 | 772.6 | 42.2 | 5.7 | 85 | NNE | 2.0 | 0.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Fair | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 30.22 | 767.6 | 30.44 | 773.2 | 43.0 | 6.1 | 77 | SSW | 0.5 | 0.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 30.27 | 768.8 | 30.34 | 770.6 | 36.7 | 2.6 | 79 | NW | 4.0 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the cooperation of Senor Mariano Barcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | | | | | | | | | | | | | | | | | | | P. Ceballos. |
| Guadalajara | 25.12 | 638.0 | 30.18 | 766.5 | 51.4 | 10.8 | 36 | Calm | ..... | ..... | 0 | 8 | ..... | NW | ..... | 0 | 0 | Cloudy | Prof. L. Perez. |
| Leon | 24.49 | 622.1 | 30.17 | 766.5 | 60.1 | 15.6 | 70 | NW | ..... | ..... | 1 | 1c | 1k | ..... | ..... | 0 | 0 | Foggy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.15 | 587.9 | 30.20 | 767.1 | 52.3 | 11.3 | 68 | Calm | 0 | 0 | ..... | 10k | 0 | NW | ..... | 0 | 0 | Covered | The Staff. |
| Pabellon, (Aguascalientes) | | | | | 57.2 | 14.0 | 63 | Calm | ..... | ..... | 0 | 9c | 0 | SW | ..... | 0 | 0 | Cloudy | M. V. de Leon, M. E. |
| Tlacotalpam | 30.04 | 763.0 | 30.05 | 763.3 | 74.3 | 23.5 | 93 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Misty | M. M. Chazaro. |
| San Luis Potosi | 24.24 | 615.3 | 30.27 | 768.9 | 55.0 | 12.8 | 73 | SE | ..... | ..... | 1 | 9 | 0 | W | ..... | 0 | 0 | Covered | G. Barroeta, M. D. |
| Vera-Cruz | | | | | | | | | | | | | | | | | | | Prof. J. Rossell. |
| Zacatecas | | | | | | | | | | | | | | | | | | | |
| Puebla, (Catholic Institute) | 23.49 | 596.7 | 30.26 | 768.5 | 50.0 | 10.0 | 69 | NE | 0.9 | 0.4 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | Misty | Prof. P. Spina. |
| Durango | | | | | | | | | | | | | | | | | | | M. V. de Leon, C. E. |
| Colima | 28.42 | 721.9 | 30.06 | 763.6 | 75.9 | 24.4 | 61 | NE | ..... | ..... | 1 | 0 | 7 | ..... | SW | 0 | 0 | ½ clouded | R. Banda, C. E. |
| San Juan E. Michapam | | | | | | | | | | | | | | | | | | | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,550.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,490 m., or 8,169.1 ft.; Puebla, Catholic Institute, 2,201 m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the barometer at Mexico, which has been corrected for the instrumental error —0.88 mm.

## NETHERLANDS SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.87 | 758.6 | 29.87 | 758.6 | 34.5 | 1.4 | ..... | ENE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.98 | 761.5 | 30.04 | 762.9 | 32.2 | 0.1 | ..... | ENE | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.99 | 761.7 | 29.99 | 761.7 | 32.5 | 0.3 | ..... | NE | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.88 | 759.0 | 29.88 | 759.0 | 32.9 | 0.5 | 94 | ENE | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.89 | 759.1 | 29.98 | 760.3 | 33.3 | 0.7 | 74 | ESE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Pressure. Corrected for instrumental error and temperature. Inches. | Pressure. Corrected for instrumental error and temperature. Millimeters. | Pressure. Reduced to sea-level. Inches. | Pressure. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.35 | 770.8 | 30.40 | 772.2 | 34.5 | 1.4 | 59 | SE | 2.9 | 1.3 | | | 0 | | | 0 | 0 | | |
| Brönö | 30.34 | 770.5 | 30.37 | 771.5 | 39.2 | 4.0 | 77 | Calm | 0 | 0 | | | 3 | | | 0 | 0 | | |
| Christiania | 30.22 | 767.5 | 30.37 | 771.5 | 28.8 | — 1.8 | 62 | E | 0 | 0 | | | 10 | | | 0 | 0 | Foggy | |
| Tromsö | 30.14 | 765.6 | 30.19 | 766.7 | 38.1 | 3.4 | 68 | W | 16 | 8 | | | 6 | | | 0.063 | 1.6 | | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.09 | 764.2 | 30.25 | 769.1 | 55.0 | 12.8 | 68 | NNE | 9.8 | 4.4 | | | 4 | | | 0 | 0 | | Dr. J. A. Sampaio. |
| Campo Major | 28.73 | 729.7 | 29.77 | 756.2 | 51.8 | 10.7 | 77 | W | 10.5 | 4.7 | | | 7 | | | 0.118 | 3.0 | | Dr. A.M. R. dos Santos |
| Funchal, (Madeira) | 29.91 | 759.8 | 30.00 | 762.0 | 64.0 | 17.8 | 68 | WSW | 14.3 | 6.4 | | | 6 | | | 0 | 0 | | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.43 | 747.6 | 29.80 | 756.8 | 55.6 | 13.1 | 52 | WNW | 17.4 | 7.8 | | | 6 | | | 0.071 | 1.8 | | The Staff. |
| Ponta Delgada, (Azores) | 30.14 | 765.5 | 30.21 | 767.3 | 56.8 | 13.8 | 62 | N | 26.6 | 11.9 | | | 3 | | | 0.071 | 1.8 | | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series Vessels. | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| Bartholomew Dias | | | | A. G. da Silva Costa Com'd.t. |
| D. Fernando | | | | A.M.de Sande, Com'd't. |
| India | | | | A. D. Pedroso, Com'd't. |
| Mindello | | | | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | 2 | SW | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | | | | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto de S. Jose de Bissao, Senegambia | 1 | ENE | D. clouds | A. Ferreira, 2d Lt. |
| Sá da Bandeira, St. Paul de Loando | | | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | | | | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | 1 | | Blue sky | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.67 | 753.5 | 30.11 | 764.8 | 26.8 | — 2.9 | 57 | E | 11 | 5 | | | 0 | | | | | | Astronomical Obs. |
| Wilna | 29.75 | 755.7 | 30.20 | 767.0 | 27.1 | — 2.7 | 60 | N | 4 | 2 | | | 1 | | | | | Light clouds | Astronomical Obs. |
| Dorpat | 29.97 | 761.2 | 30.23 | 767.7 | 29.3 | — 1.5 | 68 | WNW | 9 | 4 | | | 7ck | | | | | | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.18 | 766.5 | 30.19 | 766.9 | 24.8 | — 4.3 | 66 | NE | 9 | 4 | | | 0 | | | | | | Central Physical Obs. |
| Kieff | 29.41 | 746.9 | 30.19 | 764.3 | 19.2 | — 7.1 | 61 | NNE | 9 | 4 | | | 10ks;cs | | | | | | Physical Cabinet. |
| Nikolaiev | 29.95 | 760.6 | 30.02 | 762.4 | 28.4 | — 2.0 | 80 | ENE | 31 | 14 | | | 10n | | | | | Snowing | Kurdakof. |
| Kertch | 29.87 | 758.6 | 29.89 | 759.1 | 38.1 | 3.4 | 85 | ENE | 13 | 6 | | | 4 | | | | | | Lagorio. |
| Moscow | 29.50 | 749.3 | 30.10 | 764.4 | 18.0 | — 7.8 | 54 | N | 11 | 5 | | | 0 | | | | | | Meteorological Obs. |
| Lugan | 29.78 | 756.5 | 30.00 | 762.0 | 26.2 | — 3.2 | 44 | NE | 4 | 2 | | | 5 | | | | | | Meteorological Obs. |
| Archangel | 30.15 | 765.8 | 30.17 | 766.3 | 17.2 | — 8.2 | 85 | Calm | 0 | 0 | | | 0 | | | | | | Capt. Ssellwerstow. |
| Tiflis | 28.42 | 721.9 | 29.82 | 757.4 | 59.2 | 15.1 | 43 | W | 4 | 2 | | | 9s | | | | | | Physical Observatory. |
| Astrakhan | 30.10 | 764.5 | 30.02 | 762.4 | 37.6 | 3.1 | 40 | NNW | 2 | 1 | | | 10s | | | | | | Capt. Wisganow. |
| Krotkowo* | 29.29 | 744.0 | 29.70 | 756.7 | 20.5 | — 6.4 | 57 | NNW | 16 | 7 | | | 3k | | | | | | Cand. Fatjanow. |
| Kasan | 29.48 | 748.7 | 29.76 | 755.9 | 21.4 | — 5.9 | 68 | NNW | 9 | 4 | | | 9 | | | | | | Physical Cabinet. |
| Ekaterinburg | 28.89 | 721.0 | 29.89 | 746.5 | 19.6 | — 6.9 | 92 | NNW | 18 | 8 | | | 10 | | | | | | Meteorological Obs. |
| Nukuss | 29.78 | 756.5 | 30.01 | 762.3 | 62.4 | 16.9 | 32 | SE | 9 | 4 | | | 0 | | | | | | |
| Tashkend | 28.40 | 721.4 | 30.11 | 764.9 | 63.2 | 11.8 | 96 | NW | 13 | 6 | | | 10 | | | Blank | Blank | | Teich, A. M. |
| Barnaul | 29.42 | 747.3 | 29.94 | 760.5 | 32.9 | 0.5 | 83 | SW | 7 | 3 | | | 10 | | | | | | Meteorological Obs. |
| Yeniseisk | 29.57 | 751.1 | 29.87 | 758.7 | 29.7 | — 1.3 | 49 | ESE | 18 | 8 | | | 10 | | | | | | |
| Irkutsk | | | | | | | | | | | | | | | | | | | Marks. |
| Peking, (China) | 29.87 | 758.6 | 30.01 | 762.2 | 40.1 | 4.5 | 57 | Calm | 0 | 0 | | | 5ks | | | | | | Physical Observatory. |
| Nertchinsk | | | | | | | | | | | | | | | | | | | Meteorological Obs. |
| Vladivostock | 30.13 | 765.2 | 30.23 | 767.7 | 30.7 | — 0.7 | 54 | Calm | 0 | 0 | | | 0 | | | | | | |
| Nikolaievsk, on the Amoor | 29.94 | 760.5 | 30.03 | 762.7 | 0.7 | —17.4 | 78 | Calm | 0 | 0 | | | 0 | | | | | | |

NOTE.—The originals give the amount— and generally the kind of cloudiness— without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.49 | 749.1 | 29.60 | 751.8 | 57.0 | 13.9 | 61 | S | 4.5 | 2.00 | | | 1ks | | | 0.180 | 4.58 | Clear | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 29.62 | 752.4 | 29.68 | 753.9 | 55.0 | 12.8 | 72 | NW | 2.9 | 1.31 | | 0 | 10 | | | 0.028 | 0.7 | Covered | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.70 | 678.1 | | | 45.5 | 7.5 | 81 | SE | 5.2 | 2.32 | | 0 | 7 | | | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Osevratory | 27.47 | 697.6 | | | 52.5 | 11.4 | 59 | SW | 4.9 | 2.17 | | 7 | 0 | NW | | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.57 | 751.0 | 29.72 | 754.8 | 64.8 | 18.2 | 51 | SW | 1.8 | 0.81 | | 2 | 2 | ESE | | 0.044 | 1.12 | Raining | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.75 | 730.2 | 29.65 | 753.1 | 49.8 | 9.9 | 67 | N | 1.3 | 0.6 | | 0 | 9 | | | 0 | 0 | Almost cov'd | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.08 | 763.9 | 30.14 | 765.6 | 71.1 | 21.7 | 90 | ENE | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.92 | 760.1 | 29.98 | 761.5 | 81.0 | 27.2 | 65 | E? | 0 | 0 | | | | | | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.74 | 755.4 | 29.84 | 758.0 | 57.2 | 14.0 | 91 | WSW | 14.8 | 6.6 | | 0 | 8 | | W | 0.274 | 7.0 | | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I | 29.98 | 761.6 | 30.08 | 763.9 | 78.1 | 25.6 | 84 | E | 13.0 | 5.81 | | 3c | 2k | E | E | 0.532 | 13.50 | Cloudy | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.22 | 767.6 | 30.26 | 768.6 | 22.3 | — 5.4 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.26 | 768.7 | 30.32 | 770.0 | 34.5 | 1.4 | 78 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.28 | 767.8 | 30.28 | 769.1 | 35.6 | 2.0 | 87 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 30.10 | 764.4 | 30.27 | 768.9 | 31.0 | — 0.2 | 66 | WNW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 30.28 | 767.9 | 30.29 | 769.4 | 29.5 | — 1.4 | 72 | NNW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.18 | 766.5 | 30.25 | 768.4 | 33 6 | 1.0 | 84 | NNW | 2.2 | 1.0 | ..... | ..... | 8 | E | ..... | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.17 | 715.6 | 29.63 | 752.5 | 45.1 | 7.3 | 76 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | The Observatory. |
| Zurich | 28.01 | 711.5 | 29.71 | 754.5 | 37.8 | 3.2 | 82 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —8.8 mm.; Thermometer,—1.5 Cent.; Relative Humidity, +17 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.84 | 757.9 | 57.7 | 14.3 | 73 | SW | 7 | 3.0 | ..... | ..... | 9 | ..... | SW | 0.150 | 3.8 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.32 | 770.0 | 68.0 | 20.0 | ..... | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| Valona | ..... | ..... | 29.56 | 750.8 | 71 2 | 21.8 | ..... | S | ..... | ..... | 8 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy ..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.67 | 753.6 | 29.78 | 756.5 | 76.5 | 24.7 | 67 | SW | ..... | ..... | 1 | 6ck | ..... | ..... | ..... | 0 | 0 | D. clouds..... | Prof. C. V. A. Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.10 | 764.5 | 30.16 | 766.1 | 21.7 | — 5.7 | 59 | Calm | 0 | 0 | ..... | c | 0 | ..... | ..... | 0.30 | 7.6 | Fine..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.74 | 755.4 | 30.06 | 763.5 | 28 | — 2.2 | ..... | S | 1 | 0.4 | ..... | ..... | 8s | ..... | S | 0 | 0 | Cloudy..... | W. R. Rigg. |
| *Chatham, N. B | 30.10 | 764.5 | 30.17 | 766.3 | 14 | —10.0 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.14 | 3.6 | Clear..... | G. A. Blair. |
| Charlottetown, P. E. Island | 30.10 | 764.5 | 30.14 | 765.5 | 28 | — 2.2 | 87 | NE | 7 | 3.1 | ..... | ..... | 10s | ..... | ..... | 0.445 | 11.31 | Cloudy..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.86 | 758.4 | 30.07 | 763.8 | 27.1 | — 2.7 | 95 | N | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | Overcast..... | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 29.44 | 747.8 | 29.48 | 748.8 | 45.3 | 7.4 | 100 | Calm | ..... | ..... | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| *Father Point, Quebec | 30.08 | 764.0 | 30.10 | 764.5 | 22 | — 5.6 | 81 | S | 12 | 5.4 | ..... | 2cs | 2s | W | Calm | 0.30 | 7.6 | Overcast..... | W. H. Bevis. |
| Fredericton, N. B | 30.16 | 766.1 | 30.23 | 767.8 | 11.1 | —11.6 | 100 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.13 | 3.3 | Clear..... | J. McWilliams. |
| *Fort Garry, Manitoba | 29.39 | 746.5 | 30.33 | 770.4 | — 4 | —20.0 | 97 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Prof. Harrison. |
| Granton, Ontario | 28.66 | 728.0 | 29.79 | 756.7 | 33 | 0.6 | ..... | S | ..... | ..... | 3 | ..... | 10n | ..... | ..... | 0 | 0 | Clear..... | James Stewart. |
| *Halifax, N. S | 29.98 | 761.5 | 30.12 | 765.0 | 29 | — 1.7 | 89 | NE | 4 | 1.8 | ..... | ..... | 10ks | ..... | N | 0 | 0 | Overcast..... | James Grant. |
| Hamilton, Ontario | 29.54 | 750.3 | 29.92 | 760.0 | 35.5 | 1.9 | 75 | SW | ..... | ..... | 2 | 10cs | 0 | SW | ..... | 0.892 | 22.65 | Cloudy..... | F. Allison, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Overcast..... | Geo. Dickson, M. A. |
| *Kingston, Ontario | 29.56 | 751.3 | 29.93 | 760.2 | 27 | — 2.8 | 86 | E | 12 | 5.4 | ..... | 10cs | 0 | Calm | ..... | ..... | ..... | ..... | E. Weedon. |
| Little Glace Bay, N. S | 30.04 | 763.0 | 30.08 | 764.0 | 27.2 | — 2.7 | 94 | NE | 9 | 4.0 | ..... | 8ck | 0 | N | ..... | 0 | 0 | Cloudy..... | S. Woods, M. A. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.46 | 11.7 | Cloudy..... | C. H. Rigby. |
| *Montreal, Quebec | 29.92 | 760.0 | 30.13 | 765.3 | 21 | — 6.1 | 77 | S | 13 | 5 8 | ..... | 0 | 2s | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Parry Sound, Ontario | 29.08 | 738.6 | 29.80 | 756.9 | 30 | — 1.1 | 92 | SE | 18 | 8.0 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Clear..... | C. H. McLeod, C. E. |
| Peterboro, Ontario | 29.18 | 741.2 | 29.96 | 761.0 | 31.7 | — 0.2 | 87 | S | ..... | ..... | ..... | ..... | 10 | ..... | SE | 0.06 | 1.5 | Light snow.. | Rev. R. Mosley. |
| Port Dover, Ontario | 29.19 | 741.4 | 29.90 | 759.4 | 32 | 0.0 | 100 | S | 14 | 6.3 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast..... | T. F. Jeffers, B. A. |
| Port Hastings, N. S | 30.05 | 763.8 | 30.10 | 764.5 | 26.7 | — 2.9 | ..... | NW | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | Inap. | Inap. | Heavy snow | H. Morgan. |
| Port Stanley, Ontario | 29.21 | 741.9 | 29.87 | 758.7 | 33 | 0.6 | 90 | S | 12 | 5.4 | ..... | ..... | 10n | ..... | E | 0.10 | 2.5 | Fine..... | Peter Grant. |
| *Quebec, Quebec | 29.75 | 755.6 | 30.09 | 764.3 | 19 | — 7.2 | 92 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | Calm | 0 | 0 | Light snow.. | M. Payne. |
| *Rockliffe, Ontario | 29.44 | 747.8 | 29.92 | 760.0 | 22 | — 5.6 | 94 | E | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Cloudy..... | Capt. Ashe, R. N. |
| St. Andrews, N. B | 30.12 | 765.0 | 30.17 | 766.3 | 31 | — 0.6 | 78 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.12 | 3.0 | Light snow.. | W. H. McIntyre. |
| St. John, N. B | 30.01 | 762.2 | 30.19 | 766.8 | 26 | — 3.3 | 94 | N | 5 | 2·2 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | Clear..... | Dr. Gove. |
| *Saugeen, Ontario | 28.99 | 736.3 | 29.72 | 754.9 | 35 | 1.7 | 90 | S | 38 | 17.0 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Fine..... | G. Murdock, C. E. |
| Stayner, Ontario | 28.98 | 736.1 | 29.78 | 756.4 | 30 | — 1.1 | 96 | SE | 11 | 4.9 | ..... | ..... | 10n | ..... | S | 0.02 | 0.5 | Cloudy..... | K. Stewart. |
| Stratford, Ontario | 28.48 | 723.4 | 29.61 | 752.2 | 30.3 | — 0.9 | 96 | SE | 15.0 | 6.7 | ..... | ..... | 10n | ..... | SE | 0 | 0 | Threatening | R. J. Cole. |
| *Sydney, C. B | 30.04 | 763.0 | 30.08 | 764.0 | 30 | — 1.1 | 78 | NW | 10 | 4.5 | ..... | 8cs | 2ks | W | N | 0.42 | 10.7 | Snowing..... | C. J. MacGregor, M. A. |
| *Toronto, Ontario | 29.50 | 749.3 | 29.90 | 759.4 | 33 | 0.6 | 78 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Fair..... | T. C. Hill. |
| Windsor, N. S | 30.06 | 763.5 | 30.16 | 766.1 | 28.0 | — 2.2 | 88 | ..... | ..... | ..... | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | Cloudy..... | Magnetic Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | 0.28 | 7.1 | Cloudy ..... | Prof. John E. Oram. |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 38.0 | 3.3 | 100 | SW | ..... | ..... | ..... | 5ks | 5s | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.20 | 5.1 | Cloudy..... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Cloud. Amount. Upper. 0—10. | Cloud. Amount. Lower. 0—10. | Cloud. Direction. Upper. From— | Cloud. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.98 | 761.5 | 30.22 | 767.6 | 28 | — 2.2 | 77 | NW | 1 | 0.4 | ..... | Haze | 2s | ..... | W | 0 | 0 | Fair | |
| Alpena, Michigan | 28.92 | 734.6 | 29.58 | 751.3 | 29 | — 1.7 | 78 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Atlanta, Georgia | 29.04 | 737.6 | 30.20 | 767.1 | 48 | 8.9 | 56 | NW | 6 | 2.7 | ..... | 2c | Sm'e | Calm | Calm | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 30.26 | 768.6 | 30.28 | 769.1 | 32 | 0.0 | 69 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Augusta, Georgia | 30.05 | 763.3 | 30.23 | 767.8 | 47 | 8.3 | 85 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 30.25 | 768.3 | 30.30 | 769.6 | 35 | 1.7 | 70 | N | 2 | 0.9 | ..... | 5ck | 5s;fog | SW | Calm | 0 | 0 | Foggy | |
| Barnegat, New Jersey | 30.23 | 767.8 | 30.25 | 768.9 | 35 | 1.7 | 70 | N | 2 | 0.9 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 28.31 | 719.1 | 30.16 | 766.1 | 19 | — 7.2 | 100 | Calm | 0 | 0 | ..... | 5c | 0 | Calm | ..... | Inap. | Inap. | Fair | |
| Boerne, Texas | 28.66 | 728.0 | 29.96 | 761.0 | 62 | 16.7 | 94 | SW | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.26 | 692.4 | 30.22 | 767.6 | 49 | 9.4 | 85 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.14 | 3.6 | Cloudy | |
| Boston, Massachusetts | 30.07 | 763 8 | 30.24 | 768.1 | 31 | — 0.6 | 89 | N | 6 | 2.7 | ..... | 8k | 0 | SE | ..... | 0.08 | 2.0 | Fair | |
| Brackettville, Texas | 28.96 | 735.6 | 29.98 | 761.5 | 65 | 18.3 | 89 | E | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light rain | |
| Breckenridge, Minnesota | 29.18 | 741.2 | 30.27 | 768.8 | 16 | — 8.9 | 83 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Brownsville, Texas | 30.03 | 762.8 | 30.07 | 763.8 | 74 | 23.3 | 90 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.16 | 740.7 | 29.87 | 758.7 | 35 | 1.7 | 70 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 26 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.88 | 758.9 | 30.19 | 766.8 | 22 | — 5.6 | 72 | S | 7 | 3.1 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Cairo, Illinois | 29.79 | 756.7 | 30.19 | 766.8 | 48 | 8.9 | 70 | SW | 4 | 1.8 | ..... | 0 | 2s | ..... | SW | 0 | 0 | Fair | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.30 | 642.6 | 30.10 | 764.5 | 53 | 11.7 | 31 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 45 | 7.2 | 39 | NW | ..... | ..... | 1 | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Campo, California | 27.56 | 700.0 | 30.13 | 765.3 | 35 | 1.7 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolin | 30.28 | 769.1 | 30.29 | 769.4 | 45 | 7.2 | 76 | NE | 16 | 7.2 | ..... | Haze | Haze | ..... | ..... | 0.01 | 0.3 | Hazy | |
| Cape Henry, Virginia | 30.27 | 768.8 | 30.29 | 769.4 | 42 | 5.6 | 74 | SE | 13 | 5.8 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| Cape Lookout, N. Carolin | 30.23 | 767.8 | 30.24 | 768.1 | 50 | 10.0 | 79 | NE | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape May, New Jersey | 30.24 | 768.1 | 30.27 | 768.8 | 37 | 2.8 | 71 | SE | 6 | 2.7 | ..... | 8c | Haze | Calm | ..... | 0 | 0 | Fair | |
| Castroville, Texas | 29.32 | 744.7 | 30.02 | 762.5 | 64 | 17.8 | 94 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Threatening | |
| Charleston, South Carolin | 30.15 | 765.8 | 30.21 | 767.3 | 60 | 15.6 | 88 | NE | 4 | 1.8 | ..... | 0 | Sm'e | ..... | NE | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 24.13 | 612.9 | 30.07 | 763.8 | 30 | — 1.1 | 47 | E | 1 | 0.4 | ..... | 2cs | 0 | W | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.12 | 739.6 | 29.82 | 757.4 | 39 | 3.9 | 52 | W | 13 | 5.8 | ..... | ..... | 10s | ..... | W | 0.03 | 0.8 | Cloudy | |
| Cincinnati, Ohio | 29.37 | 746.0 | 30.03 | 762.8 | 45 | 7.2 | 64 | S | 10 | 4.5 | ..... | ..... | 9n | ..... | SW | Inap. | Inap. | Light rain | |
| Cleveland, Ohio | 29.15 | 740.4 | 29.89 | 759.2 | 36 | 2.2 | 90 | SE | 16 | 7.2 | ..... | ..... | 10n | ..... | S | 0.06 | 1.5 | Light rain | |
| Coleman City, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Columbus, Ohio | 29.69 | 738.9 | 29.94 | 760.5 | 40 | 4.4 | 82 | S | 4 | 1.8 | ..... | ..... | 10s; fg | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Concho, Texas | 28.15 | 715.0 | 29.79 | 756.7 | 63 | 17.2 | 73 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.66 | 753.4 | 30.14 | 765.6 | 52 | 11.1 | 73 | S | 3 | 1.3 | ..... | 1k | 1s | N | E | 0 | 0 | Clear | |
| Davenport, Iowa | 29.36 | 745.7 | 30.02 | 762.5 | 37 | 2.8 | 81 | W | 16 | 6.7 | ..... | ..... | 10s | ..... | NW | Inap. | Inap. | Cloudy | |
| Deadwood, Dakota | 25.41 | 645.4 | ..... | ..... | 22 | — 5.6 | 72 | SE | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Decatur, Texas | 28.98 | 736.1 | 30.16 | 766.1 | 55 | 12.8 | 93 | NE | ..... | ..... | ..... | 0 | 9s | ..... | NE | 0 | 0 | Cloudy | |
| Denison, Texas | 29.38 | 746.2 | 30.18 | 766.6 | 54 | 12.2 | 43 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.90 | 632.4 | 30.12 | 765.0 | 32 | 0.0 | 50 | S | 4 | 1.8 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Des Moines, Iowa | 29.26 | 743.2 | 30.17 | 766.3 | 35 | 1.7 | 80 | NW | 7 | 3.1 | ..... | ..... | 10s | ..... | NW | 0.02 | 0.5 | Cloudy | |
| Detroit, Michigan | 29.04 | 737.6 | 29.72 | 754.9 | 37 | 2.8 | 51 | S | 14 | 6.3 | ..... | 2cs | 2s | SW | S | Inap. | Inap. | Fair | |
| Dodge City, Kansas | 27.69 | 703.3 | 30.11 | 764.8 | 31 | — 0.6 | 69 | N | 8 | 3.6 | ..... | 5c | 2s | NW | N | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.28 | 743.7 | 30.00 | 762.0 | 38 | 3.3 | 63 | NW | 14 | 6.3 | ..... | ..... | 10ks | ..... | NW | Inap. | Inap. | Cloudy | |
| Duluth, Minnesota | 29.40 | 746.7 | 30.11 | 764.8 | 25 | — 3.9 | 75 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Clear | |
| Eagle Pass, Texas | 29.26 | 743.2 | 29.99 | 761.7 | 64 | 17.8 | 100 | SE | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | Inap. | Inap. | Drizzling | |
| Eastport, Maine | 30.11 | 764.8 | 30.18 | 766.6 | 31 | — 0.6 | 79 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0.11 | 2.8 | Clear | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 64 | 17.8 | 78 | S | ..... | ..... | 1 | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| El Paso, Texas | 26.32 | 668.5 | ..... | ..... | 55 | 12.8 | 27 | W | 6 | 2.7 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Erie, Pennsylvania | 29.16 | 740.7 | 29.89 | 759.2 | 38 | 3.3 | 63 | S | 18 | 8.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.04 | 737.6 | 29.70 | 754.4 | 32 | 0.0 | 79 | N | 31 | 13.9 | ..... | ..... | 10ks | ..... | N | 0.37 | 9.4 | Cloudy | |
| Florence, Arizona | 28.57 | 725.7 | 30.17 | 766.3 | 50 | 10.0 | 58 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 28.00 | 711.2 | ..... | ..... | 19 | — 7.2 | 69 | SE | 5 | 2.2 | ..... | 10cs | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Fort Craig, New Mex co | 25.66 | 651.8 | 29.73 | 755.1 | 50 | 10.0 | 18 | NW | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.27 | 641.8 | 30.23 | 767.8 | 55 | 12.8 | 38 | SW | 4 | 1.8 | ..... | 2k | 0 | W | ..... | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.68 | 753.9 | 30.23 | 767.8 | 44 | 6.7 | 68 | W | 2 | 0.9 | ..... | 2k | 5ks | W | W | 0 | 0 | Fair | |
| Fort Griffin, Texas | 28.77 | 730.7 | 30.04 | 763.0 | 57 | 13.9 | 63 | Calm | 0 | 0 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort Keogh, Montana | 27.42 | 696.5 | ..... | ..... | 32 | 0.0 | 79 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort McKavett, Texas | 27.83 | 706.9 | 29.71 | 754.6 | 63 | 17.2 | 83 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.97 | 735.8 | 30.09 | 764.3 | 53 | 11.7 | 36 | N | 18 | 8.0 | ..... | 2k | 0 | Calm | ..... | 0 | 0 | Clear | |
| Fort Stevenson, Dakota | 28.28 | 718.3 | ..... | ..... | 8 | —13.3 | 78 | NW | 3 | 1.3 | ..... | 1c | 0 | Calm | ..... | 0.02 | 0.5 | Fair | |
| Fredericksburg, Texas | 28.38 | 720.8 | 29.92 | 760.0 | 62 | 16.7 | 88 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 30.11 | 764.8 | 30.16 | 766.1 | 63 | 17.2 | 94 | SE | 3 | 1.3 | ..... | 2ck | 0 | Calm | ..... | 0 | 0 | Clear | |
| Graham, Texas | 29.03 | 737.3 | 30.08 | 764.0 | 55 | 12.8 | 81 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.02 | 737.1 | 29.66 | 753.4 | 37 | 2.8 | 81 | W | 32 | 14.3 | ..... | ..... | 10s | ..... | W | 0.05 | 1.3 | Cloudy | |
| Indianapolis, Indiana | 29.16 | 740.7 | 29.94 | 760.5 | 45 | 7.2 | 61 | SW | 8 | 3.6 | ..... | 2ck | 0 | W | ..... | 0 | 0 | Clear | |
| Indianola, Texas | 30.10 | 764.5 | 30.13 | 765.3 | 68 | 20.0 | 95 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 28.07 | 735.8 | 30.10 | 764.5 | 60 | 15.6 | 44 | E | 12 | 5.4 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Jacksonville, Florida | 30.15 | 765.8 | 30.17 | 766.3 | 62 | 16.7 | 83 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.44 | 747.8 | 30.07 | 763.8 | 40 | 4.4 | 73 | NW | 20 | 8.9 | ..... | ..... | 10s | ..... | NW | 0.01 | 0.3 | Cloudy | |
| Key West, Florida | 30.12 | 765.0 | 30.16 | 766.1 | 75 | 23.9 | 86 | SE | 6 | 2.7 | ..... | 5k | Fog | SE | Calm | 0 | 0 | Fair | |
| Kittyhawk, North Carolin | 30.25 | 768.3 | 30.28 | 769.1 | 42 | 5.6 | 74 | SE | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.19 | 741.4 | 30.25 | 768.3 | 34 | 1.1 | 95 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Dense fog | |
| La Crosse, Wisconsin | 29.22 | 742.2 | 29.96 | 761.0 | 38 | 3.3 | 72 | NW | 16 | 7.2 | ..... | ..... | 10ks | ..... | NW | 0.08 | 2.0 | Cloudy | |
| La Mesilla, New Mexico | 26.17 | 664.7 | 30.32 | 770.1 | 43 | 6.1 | 59 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.63 | 752.6 | 29.96 | 761.0 | 72 | 22.2 | 76 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.37 | 746.0 | 30.25 | 768.3 | 36 | 2.2 | 61 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.89 | 756.9 | 30.15 | 765.8 | 49.0 | 9.4 | 89 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.49 | 749.0 | 30.06 | 763.5 | 48 | 8.9 | 63 | SW | 7 | 3.1 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Lynchburg, Virginia | 29.52 | 749.8 | 30.22 | 767.6 | 39 | 3.9 | 63 | NW | 2 | 0.9 | ..... | 0 | 5ks | ..... | Calm | 0 | 0 | Fair | |
| Madison, Wisconsin | 28.86 | 733.0 | 29.85 | 758.2 | 37 | 2.8 | 71 | NW | 30 | 13.4 | ..... | ..... | 10s | ..... | NW | 0.12 | 3.0 | Cloudy | |
| Marquette, Michigan | 28.11 | 714.0 | 29.84 | 757.9 | 29 | — 1.7 | 100 | NW | 20 | 8.9 | ..... | ..... | 10n | ..... | Calm | 0.31 | 7.9 | Light snow | |
| Mason, Texas | 28.26 | 717.8 | 30.19 | 766.8 | 63 | 17.2 | 40 | S | 7 | 3.1 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.88 | 758.9 | 30.21 | 767.3 | 48 | 8.9 | 77 | SW | 2 | 0.9 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Milwaukee, Wisconsin | 29.00 | 736.6 | 29.73 | 755.1 | 38 | 3.3 | 81 | W | 28 | 12.5 | ..... | ..... | 10s | ..... | NW | 0.06 | 1.5 | Cloudy | |
| Mobile, Alabama | 30.21 | 767.3 | 30.26 | 768.6 | 49 | 9.4 | 85 | N | 6 | 2.7 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Montgomery, Alabama | 30.01 | 762.2 | 30.25 | 768.3 | 45 | 7.2 | 76 | N | 4 | 1.8 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.98 | 736.1 | 30.06 | 763.5 | 42 | 5.6 | 66 | S | 3 | 1.3 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Mt. Washington, N. H. | 23.66 | 601.0 | 30.02 | 762.5 | 17 | — 8.3 | 67 | W | 18 | 8.0 | ..... | 0 | 2ks | ..... | W | 0 | 0 | Clear | |
| Nashville, Tennessee | 29.62 | 752.3 | 30.17 | 766.3 | 43 | 6.1 | 67 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 30.12 | 765.0 | 30.25 | 768.3 | 33 | 0.6 | 70 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New London, Connecticut | 30.20 | 767.1 | 30.25 | 768.3 | 35 | 1.7 | 61 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| New Orleans, Louisiana | 30.14 | 765.5 | 30.20 | 767.1 | 57 | 13.9 | 69 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 30.18 | 766.6 | 30.23 | 767.8 | 35 | 1.7 | 61 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| New York, New York | 30.07 | 763.8 | 30.28 | 768.6 | 33 | 0.6 | 69 | E | 5 | 2.2 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Norfolk, Virginia | 30.22 | 767.6 | 30.28 | 769.1 | 43 | 6.1 | 83 | S | 6 | 2.7 | ..... | 5k | 5s | S | S | 0.03 | 0.8 | Cloudy | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS | Barometer. Corrected for instru'm'tal error and temperature. | | Barometer. Reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. Direction. | Wind. Velocity. | | Wind. Force. | Clouds. Amount. | | Clouds. Direction. | | Rain-fall or melted snow in the past 24 hours. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10 | Up'er 0—10 | Low'r 0—10. | Upper. From— | Lower. From— | Inches. | Millimeters. | | |
| North Platte, Nebraska | 27.34 | 694.4 | 30.09 | 764.3 | 25 | — 3.9 | 75 | NW | 4 | 1.8 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.02 | 752.3 | 29.65 | 753.1 | 54.2 | 12.3 | 93 | S | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 1.96 | 49.8 | Heavy rain. | |
| Omaha, Nebraska | 29.06 | 738.1 | 30.21 | 767.3 | 33 | 0.6 | 79 | NW | 8 | 3.6 | ..... | 2c | 0 | NW | ..... | Inap. | Inap. | Clear | |
| Oswego, New York | 29.75 | 755.6 | 30.08 | 764.0 | 38 | 0.0 | 79 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Pembina, Dakota | 29.35 | 745.5 | 30.26 | 768.6 | —10 | —23.3 | 100 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pa | 30.22 | 767.6 | 30.27 | 768.8 | 34 | 1.1 | 70 | SW | 5 | 2.2 | ..... | 10cs | Haze | Calm | Calm | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.91 | 734.3 | 30.73 | 780.5 | 56 | 13.3 | 40 | NW | 1 | 0.4 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.81 | 452.4 | 30.02 | 762.5 | 12 | —11.1 | 42 | NW | 30 | 13.4 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Pioche, Nevada | 24.19 | 614.4 | 29.96 | 761.0 | 42 | 5.6 | 50 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.20 | 741.7 | 30.04 | 763.0 | 36 | 2.2 | 71 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | S | Inap | Inap. | Cloudy | |
| Port Huron, Michigan | 29.03 | 737.3 | 29.70 | 754.4 | 36 | 2.2 | 80 | S | 20 | 8.9 | ..... | 2ck | 0 | W | ..... | 0.04 | 1.0 | Clear | |
| Portland, Maine | 30.16 | 766.1 | 30.21 | 767.3 | 35 | 1.7 | 80 | NW | 5 | 2.2 | ..... | 5k | 5s | Calm | Calm | 0.02 | 0.5 | Cloudy | |
| Portland, Oregon | 29.74 | 755.4 | 29.84 | 757.9 | 57.6 | 14.2 | 91 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | ..... | 1.26 | 32. 0 | Cloudy | |
| Prescott, Arizona | 24.87 | 631.7 | 30.23 | 767.8 | 36 | 3.3 | 63 | W | 2 | 0.9 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Pilot Point, Texas | 29.14 | 740.1 | 29.95 | 760.7 | 60 | 15.6 | 82 | SE | 11 | 4.9 | ..... | 8k | 2s | S | SE | 0 | 0 | Cloudy | |
| Punta Rassa, Florida | 30.17 | 766.3 | 30.19 | 766.8 | 71 | 21.7 | 85 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Red Bluff, California | 29.84 | 757.9 | 30.20 | 767.1 | 57 | 13.9 | 87 | S | 15 | 6.7 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.3 | Light rain | |
| Rio Grande City, Texas | 29.90 | 759.4 | 30.11 | 764.8 | 71 | 21.7 | 85 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Rochester, New York | 29.38 | 746.2 | 30.02 | 762.5 | 30 | — 1.1 | 78 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Roseburg, Oregon | 29.38 | 746.2 | 29.83 | 760.2 | 56.6 | 13.6 | 87 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | ..... | 0.23 | 5.8 | Cloudy | |
| Sacramento, California | 30.15 | 765.8 | 30.28 | 769.1 | 57 | 13.9 | 94 | S | 1 | 0.4 | ..... | ..... | 8ks | ..... | W | 0.02 | 0.5 | Cloudy | |
| St. Louis, Missouri | 29.52 | 749.8 | 30.11 | 764.8 | 47 | 8.3 | 48 | W | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Marks, Florida | 30.17 | 766.3 | 30.19 | 766.8 | 67 | 13.9 | 63 | N | 4 | 1.8 | ..... | 2k | 5s | S | S | 0 | 0 | Fair | |
| St. Paul, Minnesota | 29.20 | 741.7 | 30.06 | 763.5 | 32 | 0.0 | 74 | NW | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 22 | 5.6 | Clear | |
| Salt Lake City, Utah | 25.80 | 655.3 | 30.12 | 765.0 | 44 | 6.7 | 52 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| San Antonio, Texas | 29.42 | 747.2 | 30.00 | 762.0 | 63 | 17.2 | 94 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| San Diego, California | 30.10 | 764.5 | 30.18 | 766.6 | 52 | 11.1 | 100 | NE | 3 | 1.3 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Sandusky, Ohio | 29.16 | 738.1 | 29.84 | 757.9 | 39 | 3.9 | 82 | SW | 22 | 9.8 | ..... | 2c | 2s | W | SW | 0.02 | 0.5 | Fair | |
| Sandy Hook, New Jersey | 30.20 | 767.1 | 30.23 | 767.8 | 33 | 0.6 | 70 | SE | 8 | 3.6 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |
| San Francisco, California | 30.16 | 766.1 | 30.22 | 767.6 | 58 | 14.4 | 88 | SW | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Santa Fé, New Mexico | 23.43 | 595.1 | 29.97 | 761.2 | 33 | 0.6 | 61 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.11 | 764.8 | 30.20 | 767.1 | 54 | 12.2 | 74 | NW | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Shreveport, Louisiana | 29.96 | 761.0 | 30.18 | 766.6 | 53 | 11.7 | 78 | S | 1 | 0.4 | ..... | 0 | 5ks | ..... | SW | 0 | 0 | Fair | |
| Silver City, New Mexico | 24.41 | 620.0 | 30.63 | 778.0 | 45 | 7.2 | 60 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.22 | 767.6 | 30.25 | 768.3 | 56 | 13.3 | 87 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Springfield, Massachusetts | 30.12 | 765.0 | 30.26 | 768.6 | 32 | 0.0 | 69 | NW | 2 | 0.9 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Fair | |
| Stockton, Texas | 27.05 | 687.1 | 30.05 | 763.3 | 63 | 17.2 | 24 | W | 12 | 5.4 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Thatcher's Island, Mass | 30.19 | 766.8 | 30.24 | 768.1 | 35 | 1.7 | 61 | N | 6 | 2.7 | ..... | 8k | 0 | NW | ..... | Inap. | Inap. | Fair | |
| Toledo, Ohio | 29.08 | 738.6 | 29.77 | 756.1 | 43 | 6.1 | 75 | SW | 22 | 9.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap | Clear | |
| Tucson, Arizona | 27.65 | 702.3 | 30.20 | 767.1 | 50 | 10.0 | 44 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.51 | 749.5 | 30.00 | 762.0 | 46.6 | 7.8 | 92 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | W | 0.05 | 1.3 | Cloudy | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 24 | — 4.4 | 74 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Uvalde, Texas | 29.21 | 741.9 | 30.02 | 762.5 | 66 | 18.9 | 89 | S | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light rain | |
| Vicksburg, Mississippi | 29.98 | 761.5 | 30.25 | 768.3 | 51 | 10.6 | 65 | SE | 12 | 5.4 | ..... | 8c | 0 | W | ..... | 0 | 0 | Fair | |
| Virginia City, Montana | 24.21 | 614.9 | 29.69 | 754.1 | 38 | 3.3 | 72 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Visalia, California | 29.84 | 757.9 | 30.22 | 767.6 | 55 | 12.8 | 93 | N | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Washington, D. C. | 30.16 | 766.1 | 30.28 | 769.1 | 33 | 0.6 | 89 | S | 4 | 1.8 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 58 | NW | ..... | ..... | 1 | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 30 16 | 766.1 | 30.24 | 768.1 | 53 | 11.7 | 80 | E | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.81 | 655.6 | 30.17 | 766.3 | 40 | 7.8 | 77 | SW | 10 | 4.5 | ..... | ..... | 10s | ..... | SW | 0.01 | 0.3 | Cloudy | |
| Wood's Holl, Mass | 30.20 | 767.1 | 30.24 | 768.1 | 37 | 2.8 | 62 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear | |
| Yankton, Dakota | 28.96 | 735.6 | 30.33 | 770.4 | 27 | — 2.8 | 76 | NW | 9 | 4.0 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Yuma, Arizona | 29.88 | 758.9 | 30.05 | 763.3 | 69 | 15.0 | 76 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28 64 | 727.4 | 30.08 | 764.0 | 48 | 8.9 | 42 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.09 | 764 3 | 30.14 | 765.5 | 74 | 23.3 | 81 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.26 | 641.6 | ..... | ..... | 65.0 | 18.3 | 80 | SW | 1 | 0.4 | ..... | ..... | 10ks | ..... | ..... | 1.05 | 26.1 | ..... | Thomas Herran. |
| Navassa, W. I | 30.01 | 762.2 | 30.09 | 764.8 | 79 | 26.1 | ..... | NE | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.04 | 763.0 | 30.04 | 763.0 | 80 | 26.7 | 82 | E | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0.600 | 15.24 | Raining | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | 30.05 | 763.3 | 30.11 | 764 8 | —14.0 | —25.6 | 73 | N | 10 | 4.5 | ..... | 4c | 6s | NE | NE | 0.03 | 0.8 | Snowing | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 2,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.556 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

## UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Up'er. From— | Clouds. Direction. Low'r. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.18 | 766.6 | 58 | 14.4 | 56 | 13.3 | 100 | S | 6 | 2.7 | ..... | ..... | 10 | ..... | S | 0 | 0 | ..... | ..... | Overcast..... | |
| Navy Yard, Pensacola, Fla. | 30.30 | 769.6 | 54 | 12.2 | 54 | 12.2 | 86 | NE | 3 | 1.3 | ..... | ..... | 2 | ..... | W | 0 | 0 | ..... | ..... | Fair..... | |
| Navy Yard, Portsmouth, N.H. | 30.25 | 768.3 | 70 | 21.1 | 33 | 0.6 | 80 | W | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan.....* | 30.30‡ | 769.6‡ | ..... | ..... | 43.5 | 6.4 | 64 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Adams, Panama .....* | 29.98 | 761.5 | 79 | 26.7 | 78 | 25.6 | 95 | NW | ..... | ..... | 1 | ..... | 2 | ..... | N; W | ..... | ..... | ..... | ..... | Clear..... | |
| Alaska, N. 42° 30′, W. 124° 25′..... | 29.98‡ | 761.5‡ | ..... | ..... | 53 | 11.7 | 100 | SE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 2.6 | 7. | Long | SE | Raining..... | |
| Alliance, N. 43° 31′, E. 16° 06′..... | 29.46‡ | 748.3‡ | ..... | ..... | 56 | 13.3 | 69 | NNW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | Light | N | Pleasant..... | |
| Ashuelot, Hong-Kong, China. ...* | 30.16‡ | 766.1‡ | ..... | ..... | 59 | 15.0 | 82 | ESE | ..... | ..... | 4 | ..... | 10? | ..... | ESE | ..... | ..... | ..... | ..... | Fair?..... | |
| Canonicus, New Orleans, La. .....* | 30.19 | 766.8 | 44 | 6.7 | 56 | 13.3 | 94 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Colorado, New York, N. Y..... | 30.23 | 767.8 | 39 | 3.9 | 35 | 1.7 | 100 | NE | 2 | 0.9 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Hazy..... | |
| Constitution Lisbon, Portugal..... | 29.76‡ | 755.9‡ | ..... | ..... | 60 | 15.6 | 88 | NW | ..... | ..... | 2 | ..... | 3 | ..... | NW | ..... | ..... | ..... | ..... | Pleasant..... | |
| Despatch, N. 41° 07′, E. 13° 06′..... | 29.42‡ | 747.2‡ | ..... | ..... | 55 | 12.8 | 93 | E | ..... | .... | 3 | ..... | 8 | ..... | NW | ..... | ..... | Smooth | ..... | Rainy..... | |
| Franklin, Norfolk, Va.....* | 30.41 | 772.4 | 64 | 17.8 | 45 | 7.2 | 76 | SSE | 5.1 | 2.3 | ..... | ..... | 2 | ..... | SW | 0 | 0 | ..... | ..... | Clear..... | |
| Gettysburg, Genoa, Italy ..... | 29.76‡ | 755.9‡ | ..... | ..... | 60 | 15.6 | 82 | NNW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Fair..... | |
| Hartford, Montevideo, Uruguay.* | 29.86 | 758.4 | 73 | 22.8 | 71 | 21.7 | 80 | WSW | ..... | ..... | 2 | ..... | 8 | ..... | WSW | 0.32 | 8.1 | Smooth | ..... | Cloudy..... | |
| Lackawana, S. 11° 10′, W. 78° 10′.....* | 29.80‡ | 756.9‡ | ..... | ..... | 69 | 20.6 | 95 | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Misty..... | |
| Michigan, Erie, Pa.....† | 29.96 | 761.0 | ..... | ..... | 38 | 3.3 | 81 | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Monocacy. Shanghai, China.....* | 30.32‡ | 770.1‡ | ..... | ..... | 45 | 7.2 | 76 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monongahela Yokohama, Japan .....* | 30.30‡ | 769.6‡ | ..... | ..... | 49 | 9.4 | 38 | SW | ..... | ..... | 1-2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Blue sky..... | |
| New Hampshire, Port Royal, S. C.....* | 30.24 | 768.1 | 65 | 18.3 | 61 | 16.1 | 82 | NE | 7 | 3.1 | ..... | ..... | 2 | ..... | NE | 0 | 0 | ..... | ..... | Clear..... | |
| Onward, Callao, Peru.....†* | 30.06 | 763.5 | ..... | ..... | 67 | 19.4 | 95 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Palos, Tientsin, China.....* | 29.98 | 761.5 | 45 | 7.2 | 45 | 7.2 | 68 | NNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 31 | — 0.6 | 79 | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Pensacola, Valparaiso, Chili..... | 30.05‡ | 763.3‡ | ..... | ..... | 72 | 22.2 | 55 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Plymouth, N. 25° 37′, W. 61° 22′..... | 30.33‡ | 770.4‡ | ..... | ..... | 72 | 22.2 | 90 | SE | ..... | ..... | 3 | ..... | 2 | ..... | NW | ..... | ..... | Light | SE | Clear..... | |
| Powhatan, N. 29° 44′, W. 72° 29′..... | 30.23‡ | 767.8‡ | ..... | ..... | 67 | 19.4 | 89 | NE | ..... | ..... | 4 | ..... | 8 | ..... | NE | 0.425 | 10.80 | Mod'ate | NE | Raining..... | |
| Quinnebaug, N. 36° 37′, W. 3° 06′..... | 29.80‡ | 756.9‡ | ..... | ..... | 59 | 15.0 | 76 | W | ..... | ..... | 6 | ..... | 5 | ..... | W | ..... | ..... | Long | W | Fair..... | |
| Ranger. Amoy, China..... | 30.24‡ | 768.1‡ | ..... | ..... | 60 | 15.6 | 76 | NE | ..... | ..... | 1 | ..... | 2? | ..... | NE | ..... | ..... | Smooth | ..... | Cloudy?..... | |
| Richmond. N. 15° 09′, E. 42° 06′..... | 29.92‡ | 760.0‡ | ..... | ..... | 58 | 14.4 | 68 | WSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Smoot | ..... | Clear..... | |
| Rio Bravo, Brownsville, Texas..... | 30.06 | 763.5‡ | 72 | 22.2 | 72 | 22.2 | 100 | SE | ..... | ..... | 1 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Threatening | |
| Santee, Annapolis, Md..... | 30.24‡ | 768.1‡ | ..... | ..... | 40 | 4.4 | 82 | S | ..... | ..... | 1 | ..... | 10 | ..... | W | 0 | 0 | ..... | ..... | Hazy..... | |
| Saratoga, Hampton Roads, Va..... | 30.29‡ | 769.4‡ | ..... | ..... | 43 | 6.1 | 83 | ESE | .... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds..... | |
| St. Louis, League Island, Pa..... | 30.15 | 765.8 | 51 | 10.6 | 33 | 0.6 | 80 | S | 5 | 2.2 | ..... | ..... | 8 | ..... | SSW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Supply, Brooklyn, N. Y..... | 30.2‡ | 768.3‡ | ..... | ..... | 35 | 1.7 | 70 | ESE | .... | ..... | 1 | ..... | 2 | ..... | ESE | ..... | ..... | ..... | ..... | Clear..... | |
| Trenton N. 42° 43′, E. 16° 36′.....* | 29.45‡ | 748.0‡ | ..... | ..... | 66 | 18.9 | 64 | NNW | ..... | ..... | 3 | ..... | 8 | ..... | WSW | 0.02 | 0.5 | Mod'ate | S | Fair..... | |
| Tuscarora, Ventosa, Mexico ..... | 29.94‡ | 760.5‡ | ..... | ..... | 81 | 27.2 | 62 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Wabash, Boston, Mass..... | 30.27‡ | 768.8‡ | ..... | ..... | 30 | — 1.1 | 89 | NW | 5 | 2.2 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Wyoming, Alexandria, Egypt. ...* | 29.80‡ | 756.9‡ | ..... | ..... | 71 | 21.7 | 90 | NE | ..... | ..... | 1-2 | ..... | 8 | ..... | NE | ..... | ..... | Smooth | ..... | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | SEA-SWELL | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | CHARACTER. | DIRECTION FROM— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Colima, N. 24° 45′, W. 113° 20′.† | | 30.09‡ | 764.3‡ | 63 | 17.2 | | NW | | 3 | | 10 | | SE | 0 | Mod'ate | NW | Foggy | | Capt. Whitebury |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Granada, Capt. Austin, N. 25° 30′, W. 113° 10′.†. | | 30.19‡ | 766.8‡ | 61 | 16.1 | | WNW | | 5 | | Fog | | | | Heavy | NW | Foggy | | Capt. A. Fuller. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |
| S. S. Zealandia, N. 23° 00′, W. 154° 40′ | | 30.09‡ | 764.3‡ | | | | S | | 2 | | | | S | | Long mod'ate | W | Pleasant | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; and no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, Yokohama, Japan | | 30.32‡ | 770.1‡ | 47 | 8.3 | | N | | 4 | | k | | N | 0 | Smooth | N | D. Clouds | | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 22° 17′, E. 114° 10′.....†. | | 30.27‡ | 768.8‡ | | | | Var. | | 2 | | s | | Var. | Blank | | | | | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, N. 38° 26′, W. 136° 25′ | | 29.76‡ | 756.4‡ | 58 | 14.4 | 94 | SSE | | 5 | | 10n | | | | 4 | SW | Showery | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andreesen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 47° 07′, W. 22° 58′ | | 30.01‡ | 762.2‡ | | | | NNE | | 6 | | | | N | | Rough | NNW | Cloudy | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Lo'wr 0—10. | Upper. From— | Lower. From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 49° 19′, W. 29° 45′ | | 30.17‡ | 766.3‡ | 46 | 7.8 | | NW | | | 4 | | 7 | | WNW | 0 | Heavy | NNW | Cloudy. | Captain Sargent |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

## RED STAR LINE MARINE SERIES.

Furnished by the cooperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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## ALLAN LINE MARINE SERIES.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
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Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

## MARINE SERIES. (Miscellaneous.)

Furnished by the cooperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, N. 40° 55′, W. 71° 50′ | | 30.11† | 764.8‡ | 41 | 5.0 | 83 | Calm | 0 | 0 | | | 8k | | Calm | 0 | Smooth | | Cloudy | Capt. James Jorgensen. |
| | | | | | | | | | | | | | | | | | | | |
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Note.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

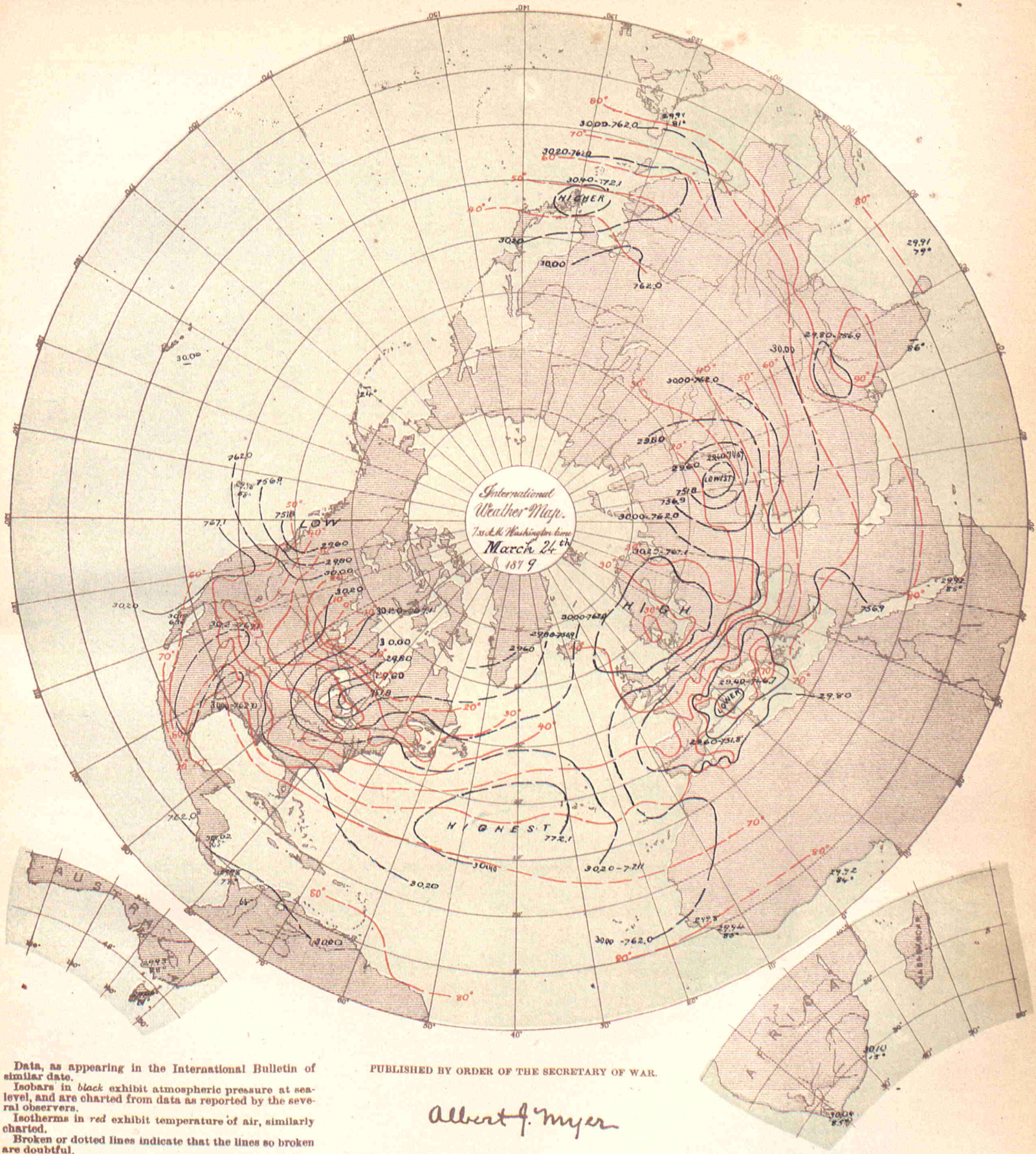
Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assgd.) Chief Signal Officer, U. S. A.*




**Data**, as appearing in the International Bulletin of similar date.

**Isobars** in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

**Isotherms** in *red* exhibit temperature of air, similarly charted.

**Broken or dotted lines** indicate that the lines so broken are doubtful.

**Arrows**, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 25, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
8:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:35 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time
1:26 P. M. CHRISTIANIA mean time.
1:38 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGEGIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 30.13 | 765.4 | 59.9 | 15.5 | 79 | SW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.571 | 14.5 | Very cloudy | |
| Nemours | ..... | ..... | 29.76 | 756.0 | 60.1 | 15.6 | 96 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.264 | 6.7 | Covered | Kesxuche. |
| Algiers | ..... | ..... | 29.69 | 754.1 | 62.6 | 17.0 | 67 | N | ..... | ..... | 1 | ..... | 2 | ..... | ..... | Inap. | Inap. | Fair | Tourilière. |
| La Calle | ..... | ..... | 29.69 | 754.2 | 69 4 | 20.8 | 75 | ESE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Foufrede. |
| Tunis | ..... | ..... | 29.87 | 758.8 | 79.8 | 21.3 | 33 | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 29.72 | 755.0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 29.78 | 756.5 | 69.4 | 15.2 | 50 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.075 | 1.9 | Covered | Herbin. |
| Tebessa | ..... | ..... | 29.80 | 757.0 | 50.4 | 10.2 | 18 | W | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Watrin. |
| Geriville | ..... | ..... | 29.74 | 755.3 | 56.5 | 13.6 | 95 | SW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.012 | 0.3 | Covered | Brugniaux. |
| Laghouat | ..... | ..... | 29.76 | 755.8 | 68.4 | 20.2 | 22 | SSW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Bertrand. |
| Biskra | ..... | ..... | 29.73 | 755.2 | 74.3 | 23.5 | 31 | SE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

## AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.25 | 742.9 | 29.81 | 757.2 | 42.3 | 5.7 | 62 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.024 | 0.6 | ..... | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.19 | 741.5 | 30.00 | 762.1 | 27.0 | — 2.8 | 97 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski |
| Eperies | 28.95 | 735.2 | 29.87 | 758.8 | 27.0 | — 2.8 | ..... | N | ..... | ..... | 5 | ..... | 10s | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.57 | 725.6 | 29.85 | 758.2 | 36.0 | 2.7 | 70 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.016 | 0.4 | ..... | Andreas Rospini. |
| Hermannstadt | 28.23 | 717.1 | 29.67 | 753.7 | 43.2 | 6.2 | 88 | NW? | ..... | ..... | 07 | ..... | 10 | ..... | ..... | 0.256 | 6.50 | Raining | Prof. A. Gottschling. |
| Kremsmünster | 28.45 | 722.7 | 29.84 | 758.0 | 34.2 | 1.2 | 68 | ENE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner. |
| Lemberg | 28.89 | 733.8 | 29.95 | 760.6 | 21.7 | — 5.7 | 98 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Dr. T. Stanecki. |
| Pola | 29.60 | 751.7 | 29.71 | 754.5 | 52.3 | 11.3 | 51 | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office. |
| Szathmar | 29.30 | 744.1 | 29.78 | 756.4 | 33.4 | 0.8 | 92 | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.059 | 1.5 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 29.63 | 752.5 | 29.73 | 755.1 | 50.7 | 10.4 | 51 | ENE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | P. Busin. |
| Vienna | 29.17 | 740.8 | 29.92 | 759.9 | 29.3 | — 1.5 | 70 | N | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

## BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | 29.57 | 751.1 | 29.78 | 756.4 | 32.5 | 0.3 | 90 | E | ..... | ..... | 4 | ..... | 10 | ..... | ENE | 0.156 | 3.95 | Snowing | Royal Observatory. |
| Furnes | 29.76 | 755.9 | 29.78 | 756.5 | 32.0 | 0.0 | 93 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.118 | 3.0 | Snowing | M. E. de Cae. |
| Maeseyck | 29.69 | 754.2 | 29.82 | 757.4 | 34.5 | 1.4 | 76 | SSE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.031 | 0.8 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:9, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.07 | 763.8 | 30.17 | 766.3 | 34.0 | 1.1 | ..... | SE | 26 | 11.6 | ..... | ..... | 9 | ..... | ..... | 0.010 | 0.25 | Overcast | W. Boswell. |
| Ardrossan | 29.99 | 761.7 | 30.01 | 762.2 | 36 | 2.2 | ..... | E | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Snowing | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.94 | 760.5 | 33.9 | 1.1 | ..... | ESE | 17 | 7.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.89 | 759.2 | 32.8 | 0.4 | ..... | ENE | 37 | 16.5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.92 | 760.0 | 31.3 | — 0.4 | ..... | ESE | 30 | 13.4 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Squally | Thomas Mackereth. |
| Bradford, Yorkshire | 29.54 | 750.3 | 29.94 | 760.5 | 33.1 | 0.6 | ..... | E | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.96 | 761.0 | 29.99 | 761.7 | 51.0 | 27.2 | ..... | NE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.66 | 758.4 | 33.0 | 0.6 | ..... | ENE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Snowy | H. Todd. [C. |
| Cardington | ..... | ..... | 29.83 | 757.7 | 33.0 | 0.6 | ..... | E | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.68 | 753.9 | 29.82 | 757.4 | 31.2 | — 0.4 | ..... | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Corpl. Daly, R. E. |
| Dartmoor | 28.22 | 716.8 | 29.74 | 755.4 | 32.0 | 0.0 | ..... | NE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Snowing | Alexander Watt. |
| Donaghadee | 29.93 | 760.2 | 29.97 | 761.2 | 35 | 1.7 | ..... | ESE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | J. Mac Gowan. |
| Dover | 29.74 | 755.4 | 29.76 | 755.9 | 33 | 0.6 | ..... | E | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Snow & fog | J. Costello. |
| Falmouth, Observatory | 29.53 | 750.0 | 29.77 | 756.1 | 36.7 | 2.6 | ..... | E | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.75 | 704.8 | 30.07 | 763.8 | 74.0 | 23.3 | ..... | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 87 | 30.6 | ..... | NW? | ..... | ..... | 0? | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.77 | 756.1 | 38 | 3.3 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.60 | 751.8 | 29.66 | 753.4 | 57.2 | 14.0 | ..... | W | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | Blue sky | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.82 | 757.4 | 30.02 | 762.5 | 34.9 | 1.6 | ..... | NE | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | ..... | Gloomy | D. G. Maclean. |
| Great Yarmouth | 29.87 | 758.7 | 29.88 | 758.9 | 33 | 0.6 | ..... | E | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.63 | 752.6 | 29.81 | 757.2 | 31.0 | — 0.6 | ..... | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | The Staff, for G. B. Airy. |
| Guernsey | 29.50 | 749.3 | 29.73 | 755.1 | 37.5 | 3.1 | ..... | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Showery | Dr. S. E. Hoskins, F.R.S. |
| Helston | 29.64 | 752.8 | 29.86 | 758.4 | 42 | 5.6 | ..... | E | ..... | ..... | 2 | ..... | 6k | ..... | ..... | ·0 | 0 | Fair | M. P. Moyle. |
| Holyhead | 29.80 | 756.9 | 29.87 | 758.7 | 35 | 1.7 | ..... | E | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | John Tilston. |
| Jersey | 29.44 | 747.8 | 29.74 | 755.4 | 36.4 | 2.4 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast | J. Fisher. |
| Kew, Observatory | 29.77 | 756.1 | 29.81 | 757.2 | 32.2 | 0.1 | ..... | NE | 20 | 8.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | The Meteorological Of. |
| Leicester, Museum | 29.61 | 752.1 | 29.88 | 758.9 | 32.2 | 0.1 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.79 | 756.7 | 29.87 | 758.7 | 64 | 17.8 | ..... | W | ..... | ..... | 2 | ..... | 3ck | ..... | ..... | ..... | ..... | Blue sky | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 30.03 | 762.8 | 30.12 | 765.0 | 37 | 2.8 | ..... | ESE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.10 | 764.5 | 75.5 | 24.2 | ..... | SE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.76 | 755.9 | 29.96 | 761.0 | 31.6 | — 0.2 | ..... | SE | ..... | ..... | 6 | ..... | 10d;k | ..... | ENE | ..... | ..... | Snowing | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.32 | 744.7 | 29.87 | 758.7 | 31.1 | — 0.5 | ..... | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.83 | 757.7 | 32 | 0.0 | ..... | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | H. E. Bellamy. |
| Plymouth | 29.70 | 754.4 | 29.77 | 756.1 | 37.1 | 2.8 | ..... | ENE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | John Merrifield. |
| Roche's Point | 29.76 | 755.9 | 29.81 | 757.2 | 34 | 1.1 | ..... | NE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | W. Kennedy. |
| Saint Ann's Head | 29.64 | 752.8 | 29.81 | 757.2 | 35 | 1.7 | ..... | E | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | Light snow | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 30.19 | 766.8 | 36.4 | 2.4 | ..... | SE | 25 | 11.2 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.58 | 751.3 | 57.6 | 14.2 | ..... | S | ..... | ..... | 3 | ..... | 9 | ..... | ..... | Blank | Blank | D. clouds | W. H. Lyne. |
| Sheffield | 29.67 | 753.6 | 29.96 | 761.0 | 32.2 | 0.1 | ..... | ENE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | W. F. Cooper. |
| Silloth Rectory | 29.95 | 760.7 | 29.98 | 761.5 | 38.4 | 3.6 | 66 | SE | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.52 | 749.8 | 29.93 | 760.2 | 32.6 | 0.3 | ..... | E | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds | Rev. S. J. Perry. |
| Strathfield Turgiss | 29.60 | 751.8 | 29.82 | 757.4 | 32.5 | 0.3 | ..... | NE | ..... | ..... | 2–3 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | C.H. Griffith, F.M.S. |
| Thurso | 30.12 | 765.0 | 30.19 | 766.8 | 35 | 1.7 | ..... | ESE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | John Trotter. |
| Truro, Royal Institution | 29.70 | 754.4 | 29.78 | 756.4 | 43 | 6.1 | ..... | E | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | W. Newcombe. |
| Valencia, Observatory | 29.75 | 755.6 | 29.78 | 756.4 | 39.4 | 4.1 | ..... | SSE | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.95 | 760.7 | 29.99 | 761.7 | 77.8 | 25.4 | 57 | NW | 18 | 8.0 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Fine | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.74 | 755.4 | 58.0 | 14.5 | 88 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0.10 | 2.5 | Starlight | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 30.08 | 764.0 | 33.2 | 0.7 | ..... | E | ..... | ..... | 4 | ..... | 10ks | ..... | ..... | 0.01 | 0.3 | Overcast | Andrew Gibb. |
| Mauritius, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Meldrum. |
| Melbourne, Observatory | 29.98 | 761.5 | 30.07 | 763.8 | 60.8 | 16.0 | 72 | WSW | 13 | 5.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Squally | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 30.07 | 763.8 | 36 | 2.2 | ..... | SE | ..... | ..... | 4 | 10 | 0 | SE | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.25 | 768.3 | 37 | 2.8 | ..... | NW | ..... | ..... | 2 | 5 | 2 | SE | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

## British Marine Series.

| Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 24′, E. 27° 19′ | ..... | ..... | 29.59‡ | 751.6‡ | 63 | 17.2 | ..... | SW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Misty | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle Isle, N. 37° 16′, W. 51° 19′ | ..... | ..... | 30.37‡ | 771.4‡ | 65 | 18.3 | ..... | SSW | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 5 | SW | Blue sky | Capt. A. J. Brown. |
| Ship British Commodore, —— City of Agra, N. 34° 19′ W. 44° 15′ | ..... | ..... | 30.52‡ | 775.1‡ | 67.8 | 19.9 | ..... | SE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 2 | ..... | D. clouds | Capt. J. W. Thorne. Capt. Thos. Young. |
| Barque Commewyne, N. 43° 30′, W. 30° 28′ | ..... | ..... | 30.11‡ | 764.8‡ | 60.3 | 15.7 | ..... | W | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Capt. A. Buchan. |
| Barque Fedalina, N. 30° 00′, W. 26° 32′ | ..... | ..... | 30.26 | 768.6 | 62 | 16.7 | ..... | NE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 4 | Confused. | Squally | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam, N. 5° 54′, E. 90° 06′ | ..... | ..... | 29.92‡ | 760.0‡ | 82 | 27.8 | ..... | E | ..... | ..... | 2 | ..... | 8cs | ..... | SE | ..... | ..... | D. clouds | Capt. Barlow. |
| S. S. Strathleven, N. 36° 33′, E. 17° 02′ | ..... | ..... | 29.83‡ | 758.2‡ | 60 | 15.6 | ..... | W | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.30 | 668.0 | 30.02 | 762.5 | 67.1 | 19.5 | 86 | SE | ..... | ..... | 1 | 8ks | ..... | E | ..... | 0.013 | 0.32 | ..... | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.6 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.17 | 766.2 | 30.21 | 767.4 | 32.0 | 0.0 | 52 | NNE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 30.18 | 766.6 | 30.20 | 767.1 | 33.8 | 1.0 | 55 | E | ..... | ..... | 6 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.77 | 756.1 | 29.81 | 757.2 | 14.6 | — 9.7 | 74 | ENE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 30.18 | 766.5 | 30.21 | 767.4 | 39.6 | 4.2 | 68 | SSE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 30.07 | 763.7 | 30.24 | 768.0 | 34.2 | 1.2 | 78 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.15 | 740.5 | 29.71 | 754.5 | 37.0 | 2.8 | 96 | SSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.028 | 0.7 | Covered | Collignon, Director. |
| Amiens, Normal School | 29.56 | 750.8 | 29.67 | 753.6 | 42.4 | 5.8 | 82 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bouvallet, Director. |
| Avignon, Normal School | 29.61 | 752.2 | 29.69 | 754.2 | 60.4 | 15.8 | 61 | NNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0.04 | 1. | Very clear | M. Giraud, Director. |
| Bar-sur-Seine | 29.10 | 739.2 | 29.66 | 753.4 | 46.4 | 8.0 | 68 | S | ..... | ..... | 1 | ..... | 8kn | ..... | SW | 0.067 | 1.7 | Very cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.43 | 747.5 | 29.76 | 756.0 | 37.9 | 3.3 | 81 | ENE | ..... | ..... | 1 | ..... | 10 | ..... | E | 0.020 | 0.50 | Covered | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 28.80 | 731.5 | 29.69 | 754.1 | 49.1 | 9.5 | 61 | W | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0 | 0 | Covered | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.84 | 732.4 | 29.74 | 755.4 | 50.0 | 10 | 62 | W | ..... | ..... | 1 | ..... | 10n | S | S | 0 | 0 | Covered | M. Marlot, Director. |
| Bourges, Normal School | 29.09 | 738.9 | 29.65 | 753.0 | 48.2 | 9 | 84 | NW | ..... | ..... | 4 | ..... | 10 | NW | NW | 0 | 0 | Covered | A. Waquet, Director |
| Brest, Naval Observatory | 29.43 | 747.6 | 29.68 | 753.8 | 45.3 | 7.4 | 66 | NNE | ..... | ..... | 1 | ..... | 8 | ..... | NNE | 0.010 | 0.25 | ..... | M. de Rermaree, Director |
| Carcassonne, Normal School | 29.29 | 744.0 | 29.70 | 754.3 | 60.1 | 15.6 | 52 | NW | ..... | ..... | 1 | ..... | 2 | SE | SE | 0.059 | 1.5 | Slightly cl'dy | September, Director. |
| Caen, Normal School | 29.63 | 752.5 | 29.70 | 754.4 | 37.0 | 2.8 | 72 | ENE | ..... | ..... | 2 | ..... | 8 | ..... | ENE | ..... | ..... | Snowing | M. Lair, Director. |
| Chartres, Normal School | 29.07 | 738.3 | 29.65 | 753.2 | 38.5 | 3.6 | 93 | NW | ..... | ..... | 1 | ..... | 10 | ..... | W | 0.098 | 2.5 | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.39 | 746.6 | 29.72 | 755.0 | 36.5 | 2.5 | 75 | SE | ..... | ..... | 3 | ..... | 8 | SE | SE | ..... | ..... | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.25 | 717.5 | 29.58 | 751.4 | 54.7 | 12.6 | 47 | SW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 028 | 0.7 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.85 | 732.8 | 29.74 | 755.4 | 34.2 | 1.2 | 93 | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.098 | 2.5 | Covered | Dr. Coulet, Director. |
| Commune de Gréasque* | 28.38 | 720.8 | 29.52 | 749.8 | 58.5 | 14.7 | 52 | NW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0 | 0 | ½ covered | M. Kina, Director. |
| Grenoble, Normal School | 28.89 | 733.8 | 29.65 | 753.2 | 54.0 | 12.2 | 56 | WNW | ..... | ..... | 3 | ..... | 8k | ..... | SW | 0 | 0 | Very cloudy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.47 | 748.6 | 29.69 | 754.1 | 43.5 | 6.4 | 82 | NNE | ..... | ..... | 1 | ..... | 8 | ..... | NNE | 0.150 | 3.8 | Very cloudy | Mouillot, Director |
| Le Mans, Normal School | 29.38 | 746.3 | 29.70 | 754.3 | 38.3 | 3.5 | 90 | N | ..... | ..... | 1 | ..... | 8 | ..... | N | 0.04 | 1. | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.77 | 730.8 | 29.69 | 754.1 | 51.6 | 10.9 | 58 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Misty | Baudry, Director. |
| Lorient, Naval Observatory | 29.63 | 752.6 | 29.74 | 755.5 | 44.6 | 7.0 | 79 | NW | ..... | ..... | 1 | ..... | ..... | ..... | NW | 0.098 | 2.5 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galxin, Director |
| Mirecourt, Normal School | 28.64 | 727.4 | 29.72 | 755.0 | 32.7 | 0.4 | 92 | NE | ..... | ..... | 3 | ..... | kn | ..... | SW | 0 | 0 | ..... | M. Barbier, Director. |
| Nismes, Normal School | 29.47 | 748.6 | 29.67 | 753.7 | 50.7 | 10.4 | 63 | SW | ..... | ..... | 1 | ..... | 2 | ..... | W | 0.138 | 3.5 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 28.61 | 726.7 | 29.68 | 753.8 | 50.0 | 10 | 74 | N | ..... | ..... | 1 | ..... | 10s | N | N | 0.16 | 4. | Raining | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.76 | 628.9 | ..... | ..... | 30.4 | — 0.9 | 100 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.047 | 1.2 | Fog & snow | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.65 | 753.0 | 29.68 | 753.8 | 48.9 | 9.4 | 81 | NNW | ..... | ..... | 1 | ..... | 10 | NNW | NNW | 0 | 0 | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.64 | 752.8 | 29.72 | 755.0 | 37.8 | 3.2 | 72 | ENE | ..... | ..... | 2 | ..... | 8 | ..... | NE | 0.028 | 0.7 | Very cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.66 | 753.4 | 29.69 | 754.2 | 39.2 | 4.0 | 70 | E | ..... | ..... | 1 | ..... | 8 | NW | NE | 0.098 | 2.44 | Very cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.51 | 749.6 | 29.68 | 753.8 | 38.8 | 3.8 | 88 | NE | ..... | ..... | 1 | ..... | ..... | ..... | E | 0.106 | 2.7 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.49 | 723.7 | 29.56 | 750.7 | 51.8 | 11 | 52 | SW | ..... | ..... | 2 | ..... | 5 | WSW | W | 0 | 0 | Cloudy | T. Huguet, Director. |
| Versailles Observatory | 29.17 | 741.0 | 29.66 | 753.4 | 30.7 | 2.6 | 86 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.061 | 1.54 | Snowing | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 28.91 | 734.4 | 29.68 | 753.8 | 57.2 | 14 | 89 | SE | ..... | ..... | 1 | ..... | 2 | ..... | SW | 0 | 0 | Slightly cl'dy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.84 | 758.0 | 29.87 | 758.7 | 75.2 | 24 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.43 | 11. | ..... | L'Abbé Marel 6si. |
| Lyons Obs'y, (Park Station) | 29.05 | 737.8 | 29.66 | 753.3 | 53.2 | 11.8 | 51 | SSE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 24.51 | 622.5 | 29.82 | 757.5 | 41.0 | 5.0 | 65 | SSW | 18.0 | 5.8 | ..... | ..... | 4 | ..... | W | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.69 | 754.0 | 61.3 | 16.3 | 70 | SSW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.39 | 746.5 | ..... | ..... | 36.9 | 2.7 | 89 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.098 | 2.5 | Sprinkling | Marié Davy, Director. |
| Perpignan | 29.60 | 751.7 | 29.70 | 754.4 | 55.8 | 13.2 | 62 | SE | 7.4 | 3.3 | ..... | ..... | 2 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.02 | 559.4 | ..... | ..... | 30.0 | — 1.1 | ..... | W | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.343 | 8.7 | Snowy | Gen'l de Nansouty. |
| Toulouse, Observatory | 29.04 | 737.6 | 29.76 | 755.9 | 52.9 | 11.6 | 73 | W | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | M. Mercadier Juller. |
| Tours | 29.45 | 748.0 | 29.65 | 753.0 | 48.8 | 9.3 | 90 | NE | ..... | ..... | 1 | ..... | 10 | ..... | E | 0.091 | 2.3 | ..... | Cousin-Marqueto. |
| Zi-Ka-Wei, (near Shanghai) | 30.09 | 764.3 | 30.11 | 764.9 | 52.9 | 11.6 | 85 | SW | 7.2 | 3.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a.m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p.m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-12 | Clouds. Amount. Up'er 0-10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.01 | 736.9 | 29.85 | 758.2 | 34.0 | 1.1 | 70 | NE | | | 5 | | 8 | E | | 0.079 | 2.0 | | Prof. Dr. Hoh. |
| Berlin | 29.93 | 760.3 | 30.11 | 764.9 | 35.2 | 1.8 | 55 | E | | | 5 | | 0 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.60 | 749.4 | 30.04 | 762.9 | 31.1 | — 0.5 | 87 | E | | | 4 | | 0 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.34 | 745.3 | 29.78 | 756.4 | 35.4 | 1.9 | 66 | NE | | | 1 | | 10 | SE | | 0 | 0 | | Albert Senz. |
| Cassel | 29.32 | 744.7 | 29.93 | 760.1 | 25.2 | — 3.8 | 61 | E | | | 3 | | 5 | E | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.66 | 753.4 | 29.82 | 757.5 | 39.7 | 4.3 | 39 | E | | | 4 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.50 | 749.2 | 29.87 | 758.7 | 37.0 | 2.8 | | E | | | 5 | | 7 | | | 0.012 | 0.3 | | Physical Society. |
| Friedrichshafen | 28.28 | 718.3 | 29.73 | 755.2 | 42.4 | 5.8 | 71 | SW | | | 2 | | 8 | WSW | | 0.024 | 0.6 | | M. Wilhelm. |
| Hamburg | 30.04 | 762.9 | 30.11 | 764.8 | 35.1 | 1.7 | 80 | ENE | | | 5 | | 2k | | | 0 | 0 | Fine | Captain F. Hegemann. |
| Kiel | 30.15 | 765.8 | 30.17 | 766.2 | 34.2 | 1.2 | 68 | E | | | 3 | | 5 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.04 | 762.9 | 30.12 | 765.1 | 30.2 | — 1.0 | 65 | NE | | | 4 | | 4 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 30.12 | 765.0 | 33.1 | 0.6 | | NE | | | 4 | | 2 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.60 | 751.7 | 30.04 | 762.9 | 32.9 | 0.5 | 52 | E | | | 5 | | 2 | | | 0 | 0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 30.09 | 764.3 | 30.14 | 765.5 | 30.0 | — 1.1 | 57 | NE | | | 3-4 | | 2k | | | | | | Skalweit. |
| Neufahrwasser | 30.15 | 765.7 | 30.16 | 766.1 | 30.7 | — 0.7 | 53 | NE | | | 3 | | 10 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.82 | 757.5 | 30.13 | 765.2 | 31.8 | — 0.1 | 75 | E | | | 3 | | 1 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.22 | 742.3 | 29.79 | 756.6 | 37.2 | 2.9 | 66 | NNE | | | 2 | | 10 | | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 28.81 | 731.8 | 29.78 | 756.3 | 37.4 | 3.0 | 59 | E | | | 1 | | 8 | SE | | 0.075 | 1.9 | Light snow. | Prof. Schoder. |
| Treves, (Trier) | 29.24 | 742.6 | 29.75 | 755.7 | 33.4 | 0.8 | 88 | NE | | | 2 | | 10 | | | 0.013 | 0.33 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.29 | 718.6 | 29.85 | 758.1 | 33.4 | 0.8 | 85 | E | 9 | 4 | | | 10 | | E | 0.008 | 0.2 | Hazy | Dr. Van Bebber. |
| Wustrow, Naval School | 30.13 | 765.3 | 30.16 | 765.9 | 31.1 | — 0.5 | 88 | ENE | | | 1 | | 3ks | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-12 | Clouds. Amount. Up'er 0-10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.30 | 744.3 | 29.69 | 754.0 | 68.5 | 20.3 | | SW | | | 2.5 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-12 | Clouds. Amount. Up'er 0-10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.88 | 758.9 | 29.93 | 760.2 | 78.0 | 25.6 | 61 | W | 15 | 6.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.42 | 747.3 | 29.89 | 759.1 | 89.9 | 32.2 | 23 | WNW | 9.4 | 4.2 | | | 1 | SW | | 0 | 0 | D. clouds | |
| Bombay | 29.81 | 757.1 | 29.85 | 758.1 | 82.8 | 28.2 | 64 | NW | 24 | 10.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.10 | 739.1 | 29.84 | 757.9 | 83.0 | 28.3 | 30 | NW | 4.5 | 2.0 | | | 0 | | | 0 | 0 | Misty | |
| Belgaum | 27.35 | 694.6 | 29.82 | 757.5 | 89.3 | 31.8 | 29 | E | 3.0 | 1.3 | | | 6 | SSW | | 0 | 0 | D. clouds | |
| Roorkee | 28.98 | 736.1 | 29.87 | 758.7 | 86.6 | 30.3 | 23 | Calm | 5.0 | 2.2 | | | 1 | | | 0 | 0 | | |
| Agra | 29.40 | 746.8 | 29.96 | 760.9 | 94.6 | 34.8 | 24 | NW | | | | | 5 | | W | 0 | 0 | | |
| Nagpur | 28.84 | 732.4 | 29.85 | 758.3 | 93 | 33.9 | 11 | E | 2.6 | 1.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.51 | 749.5 | 29.88 | 758.9 | 90.2 | 32.3 | 36 | N | 0.4 | 0.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.57 | 751.1 | 29.88 | 758.9 | 90.2 | 32.3 | 20 | Calm | 1.0 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.68 | 754.0 | 29.86 | 758.5 | 86.5 | 30.4 | 30 | Calm | 0.9 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.88 | 708.0 | 29.86 | 758.4 | 87.0 | 30.6 | 13 | NNW | 6.1 | 2.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.60 | 757.0 | 29.89 | 759.1 | 86.2 | 30.1 | 45 | S | 4.3 | 1.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.86 | 758.4 | 29.88 | 759.0 | 84.4 | 29.1 | 63 | S | 5.0 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.60 | 749.4 | 29.89 | 759.2 | 84.0 | 28.9 | 33 | Calm | 2.2 | 1.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.85 | 758.1 | 29.94 | 760.5 | 81.1 | 27.3 | 81 | WSW | 4.2 | 1.9 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.60 | 751.9 | 29.94 | 760.6 | 71.2 | 21.8 | 64 | ENE | 0.6 | 0.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.50 | 724.0 | 29.84 | 758.0 | 90.9 | 32.7 | 18 | Calm | 2.5 | 1.1 | | | 0 | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.32 | 744.8 | 29.74 | 755.3 | 50.2 | 10.1 | 53 | SE | 7.4 | 3.3 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.17 | 740 8 | 29.69 | 754.0 | 55.9 | 13.3 | 58 | ESE | ..... | ..... | 4 | ..... | 8 | E | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.63 | 752.7 | 29.74 | 755.5 | 51.4 | 10.8 | 60 | NNE | 5.6 | 2.5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.75 | 730.2 | 29.65 | 753.2 | 51.1 | 10.0 | 76 | E | 4.3 | 1.9 | ..... | ..... | 9 | ENE | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.49 | 749.1 | 29.69 | 754.0 | 55.9 | 13.3 | 76 | SE | 11.9 | 5.3 | ..... | ..... | 8 | SE | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.76 | 705.0 | 29.67 | 753.5 | 50.5 | 10.3 | 70 | NNE | ..... | ..... | 2 | ..... | 6 | W | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.66 | 753.4 | 29.71 | 754.6 | 52.5 | 11.4 | 71 | NE | 10.5 | 4.7 | ..... | ..... | 10 | ..... | ..... | 0.039 | 1.0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.49 | 749.0 | 29.74 | 755.5 | 55.8 | 13.2 | 73 | W | ..... | ..... | 2 | ..... | 10 | SW | ..... | 0.417 | 10.6 | ..... | Cav. F. Meucci |
| Leghorn | 29.61 | 752.2 | 29.70 | 754.4 | 56.7 | 13.7 | 60 | NW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0.406 | 10.3 | ..... | Prof. P. Monte. |
| Rome | 29.57 | 751.1 | 29.74 | 755.5 | 61.3 | 16.3 | 57 | SW | 11.2 | 5.0 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.44 | 747.8 | 29.69 | 754.2 | 59.7 | 15.4 | 66 | W | 16.1 | 7.2 | ..... | ..... | 6 | WNW | ..... | 0.189 | 4.8 | ..... | Prof. O. De Giorgi. |
| Cosenza | 28.89 | 733.8 | 29.77 | 756.2 | 56.5 | 13.6 | 76 | NW | 2.5 | 1.1 | ..... | ..... | 9 | ..... | ..... | 1.087 | 27.6 | ..... | Prof. D. Conti. |
| Cagliari | 29.68 | 753.3 | 29.77 | 756.2 | 63.1 | 17.3 | 52 | S | ..... | ..... | 2 | ..... | 3 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.59 | 751.5 | 29.84 | 758.0 | 59.5 | 15.3 | 55 | WSW | 2.5 | 1.1 | ..... | ..... | 7 | ..... | ..... | 0.311 | 7.9 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.75 | 755.6 | 29.82 | 757.4 | 65.3 | 18.5 | 46 | NW | 13.7 | 6.1 | ..... | ..... | 5 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.23 | 742.4 | 29.78 | 756.5 | 57.0 | 13.9 | 77 | W | 11.2 | 5.0 | ..... | ..... | 9 | ..... | ..... | 0.016 | 0.4 | ..... | Prof. ... Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.18 | 766.3 | 30.20 | 767.1 | 52.7 | 11.5 | 78 | N | 1.0 | 0.4 | ..... | ..... | 10n;s | ..... | ..... | 0.200 | 5.08 | Light rain... | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.98 | 761.5 | 30.18 | 766.6 | 55 7 | 13.2 | 84 | SE | 7.0 | 3.1 | ..... | ..... | 10n | ..... | ..... | 0.210 | 5.33 | Light rain... | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 30.18 | 766.6 | 30.25 | 768.3 | 52.9 | 11.6 | 64 | SSW | 17.1 | 7.6 | ..... | ..... | 2s | ..... | ..... | 0 | 0 | Fair | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.11 | 637.7 | 30.18 | 766.6 | 48.6 | 9.2 | 34 | SW | ..... | ..... | 1 | 8 | ..... | SW | ..... | 0 | 0 | Cloudy | Prof. L. Perez. |
| Leon | 24.47 | 621.7 | 30.17 | 766.3 | 58.3 | 14.6 | 62 | SSW | ..... | ..... | 1 | 1c | 2s | SW | ..... | 0 | 0 | Foggy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.11 | 587.0 | 30.17 | 766.4 | 51.3 | 10.7 | 59 | Calm | 0 | 0 | ..... | 4c | 2s | W | ..... | 0 | 0 | Foggy | The Staff. |
| Pabellon, (Aguascallentes) | ..... | ..... | ..... | ..... | 57.7 | 14.3 | 61 | NW | ..... | ..... | 1 | 0 | 8k | ..... | SW | 0 | 0 | Cloudy | M. V. de Leon, M. E. |
| Tlacotalpam | 30.03 | 762.6 | 30.04 | 763.0 | 74.8 | 23.8 | 90 | W | ..... | ..... | 2 | 2 | 8 | N | NW | 0 | 0 | Mist & fog | M. M. Chazaro. |
| San Luis Potosi | 24.26 | 616.1 | 30.27 | 768.9 | 66.0 | 18.8 | 78 | SE | ..... | ..... | 1 | 5 | 4 | W | SE | 0 | 0 | Covered | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.46 | 595.9 | 30.22 | 767.7 | 60.0 | 10.0 | 79 | NNE | 0.4 | 0.2 | ..... | ..... | 1 | ..... | Calm | 0 | 0 | ..... | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.42 | 721.9 | 30.08 | 764.0 | 74.3 | 23 5 | 55 | NE | ..... | ..... | 1 | 0 | 8 | ..... | SW | 0 | 0 | Covered | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

NOTE.—The elevation of Cuernavaca is 1,558.5 m., or 5,109.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.6 m., or 7,433.6 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,803 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201m., or 7,221.8 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.82 | 757.3 | 29.82 | 757.3 | 33.6 | 0.9 | ..... | E | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.95 | 760.6 | 30.00 | 762.0 | 34.9 | 1.6 | ..... | E | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.93 | 760.2 | 29.98 | 760.2 | 32.0 | 0.0 | ..... | ENE | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.83 | 757.7 | 29.83 | 757.7 | 34.3 | 1.3 | 100 | ENE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.83 | 757.7 | 29.86 | 758.9 | 36.1 | 2.3 | 43 | ESE | ..... | ..... | 5 | ..... | 3 | ..... | ..... | 0 | 0 | Slightly cl'dy | H. v. d. Brink. |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Reduced to sea-level. Inches. | Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.24 | 768.0 | 30.29 | 769.4 | 41.0 | 5.0 | 51 | E | 2.5 | 1.1 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 30.34 | 770.5 | 30.37 | 771.5 | 39.2 | 4.0 | 52 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 30.16 | 766.0 | 30.31 | 769.9 | 40.5 | 4.7 | 60 | ENE | 4 | 2 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.37 | 771.4 | 30.41 | 772.5 | 28.8 | — 1.8 | 66 | E | 7 | 3 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.15 | 765.9 | 30.35 | 770.8 | 56.8 | 13.8 | 91 | W | 14.3 | 6.4 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.72 | 729.6 | 29.76 | 756.0 | 54.5 | 12.5 | 66 | NE | 1.8 | 0.8 | ..... | ..... | 7 | SE | ..... | 0.047 | 1.2 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 29.90 | 759.5 | 29.99 | 761.7 | 57.4 | 14.1 | 59 | W | 6.3 | 2.8 | ..... | ..... | 6 | ..... | ..... | 0.075 | 1.9 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.42 | 747.2 | 29.78 | 756.4 | 55.4 | 13.0 | 52 | NNE | 13.7 | 6.1 | ..... | ..... | 8 | ..... | ..... | 0.008 | 0.2 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.28 | 769.0 | 30.35 | 770.8 | 57.9 | 14.4 | 63 | NNE | 12.5 | 5.6 | ..... | ..... | 8 | ..... | ..... | 0.031 | 0.8 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa Com'd.t. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | ..... | ..... | 29.95 | 760.7 | 84.6 | 29.2 | ..... | SW | ..... | ..... | 3 | 3 | ..... | SW | 2 | SW | D. clouds | A. J. de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. T. d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto de S. Jose de Bissao, Senegambia | ..... | ..... | 29.93 | 760.1 | 80.6 | 27.0 | ..... | E | ..... | ..... | 2 | 0 | ..... | ..... | 1 | E | Blue sky | A. Ferreira, 2d Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | 29.78 | 756.3 | 87.4 | 30.8 | ..... | NW | ..... | ..... | 3 | 4 | ..... | W | ..... | ..... | D. clouds | F. Teixeira da Silva, Com'd't. L. Ribeiro de Costa, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Tejo, Macao, China | ..... | ..... | 29.93 | 760.1 | 68.9 | 20.5 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | 1 | ..... | Overcast | J. M. T. Guimarães, Com'd't. |
| Duque da Terceira, Santiago, Cape Verd I. | ..... | ..... | 30.26 | 768.5 | 80.6 | 27. | ..... | NE | ..... | ..... | 2 | 0 | ..... | ..... | 2 | ..... | Blue sky | C.C.da Fonseca Ferreira, Comd't |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.62 | 752.3 | 30.06 | 763.5 | 30.7 | — 0.7 | 53 | E | 7 | 3 | ..... | ..... | 7k;ks | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.67 | 753.6 | 30.11 | 764.8 | 30.7 | — 0.7 | 60 | SE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.91 | 759.7 | 30.17 | 766.3 | 24.1 | — 4.4 | 63 | SW | 4 | 2 | ..... | ..... | 7k;n | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.08 | 764.0 | 30.10 | 764.4 | 23.7 | — 4.6 | 90 | NW | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | Light snow. | Central Physical Obs. |
| Kieff | 29.34 | 745.3 | 30.02 | 762.5 | 22.6 | — 5.2 | 78 | NE | 9 | 4 | ..... | ..... | 10nks | ..... | ..... | ..... | Snowing | Physical Cabinet. |
| Nikolaiev | 29.84 | 757.8 | 29.91 | 759.6 | 34.5 | 1.4 | 76 | NE | 18 | 8 | ..... | ..... | 8n | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.83 | 757.6 | 29.86 | 758.1 | 37.8 | 3.2 | 97 | ENE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.52 | 749.9 | 30.11 | 764.8 | 23.4 | — 4.8 | 58 | N | 7 | 3 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.76 | 755.8 | 29.97 | 761.3 | 27.5 | — 2.5 | 60 | ENE | 22 | 10 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | Meteorological Obs. |
| Archangel | 29.96 | 760.9 | 29.96 | 761.4 | 26.2 | — 3.2 | 85 | NW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | Snow-drift. | Capt. Sseliwerstow. |
| Tiflis | 28.37 | 720.6 | 29.75 | 755.6 | 65.5 | 18.6 | 32 | Calm | 0 | 0 | ..... | ..... | 8k | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.09 | 764.3 | 30.01 | 762.2 | 45.0 | 7.2 | 41 | ENE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.56 | 750.7 | 30.06 | 763.5 | 24.4 | — 4.2 | 59 | SW | 2 | 1 | ..... | ..... | 7k | ..... | ..... | ..... | Light clouds | Cand. Fatjanow. |
| Kasan | 29.70 | 754.4 | 29.98 | 761.6 | 24.3 | — 4.3 | 51 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 28.82 | 732.1 | 29.84 | 758.0 | 19.2 | — 7.1 | 56 | WNW | 7 | 3 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.76 | 755.9 | 29.99 | 761.7 | 65.7 | 18.7 | 26 | SE | 9 | 4 | ..... | ..... | 4 | ..... | ..... | Blank | Blank | |
| Tashkend | 28.54 | 725.0 | 30.27 | 768.9 | 51.1 | 10.6 | 74 | NE | 7 | 3 | ..... | ..... | 9 | ..... | ..... | ..... | Light clouds | Teich, A. M. |
| Barnaul | 29.32 | 744.8 | 29.84 | 757.9 | 34.7 | 1.5 | 80 | WSW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.86 | 745.7 | 29.66 | 753.3 | 30.6 | — 0.8 | 69 | SW | 4 | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 29.71 | 754.6 | 29.85 | 758.1 | 52.9 | 11.6 | 86 | Calm | 0 | 0 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount— and generally the kind of cloudiness— without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.67 | 751.1 | 29.68 | 753.8 | 55.9 | 13.3 | 68 | SE | 3.20 | 1.47 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | Light solar halo | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 29.68 | 753.9 | 29.74 | 755.4 | 55.4 | 13.0 | 72 | NW | 1.7 | 0.76 | ..... | 3 | 2 | SW | ..... | 0.016 | 0.4 | Covered | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 29.76 | 679.6 | ..... | ..... | 44.6 | 7.0 | 78 | SW | 7.8 | 3.48 | ..... | 0 | 9 | ..... | ..... | 0 | 0 | Almost cov'd | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.48 | 698.1 | ..... | ..... | 51.6 | 10.9 | 77 | SW | 3.2 | 2.33 | ..... | 0 | 9 | ..... | ..... | 0 | 0 | Almost cov'd | The Staff. |
| Murcia, Met. Obs'y | 29.56 | 750.9 | 29.71 | 754.7 | 68.0 | 20.0 | 58 | SE | 3.5 | 1.56 | ..... | 4 | 5 | SE | ..... | 0 | 0 | Almost cov'd | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.84 | 732.4 | 29.74 | 755.4 | 50.9 | 10.5 | 63 | NE? | 0 | 0 | ..... | 0 | 7 | ..... | ..... | 0.031 | 0.8 | Cloudy | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.05 | 763.3 | 30.12 | 765.0 | 71.7 | 22.1 | 80 | Calm | 0 | 0 | ..... | 0 | 1k | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.88 | 759.1 | 29.95 | 760.9 | 82.4 | 28.0 | 69 | E | 5.6 | 2.5 | ..... | ..... | 2s | ..... | W | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.60 | 751.8 | 29.69 | 754.3 | 59.2 | 15.1 | 69 | NW | 2.6 | 1.2 | ..... | 0 | 10 | ..... | N | 0.205 | 5.2 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I | 29.98 | 760.9 | 30.05 | 763.2 | 77.0 | 25.0 | 90 | SE | 4.9 | 2.19 | ..... | 4s | 8k | SE | SE | 0 | 0 | Cloudy | Leonardo de Tejada, Ch'f Eng'r. |

Note.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.39 | 771.9 | 30.43 | 772.9 | 29.1 | — 1.6 | ..... | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.34 | 770.5 | 30.30 | 771.8 | 30.6 | — 0.8 | 58 | NE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.39 | 771.9 | 30.44 | 773.2 | 32.4 | 0.2 | 46 | NE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0.031 | 0.8 | ..... | |
| Stockholm | 30.10 | 764.4 | 30.27 | 768.9 | 34.0 | 1.1 | 47 | NE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 30.10 | 764.6 | 30.16 | 766.1 | 33.1 | 0.6 | 75 | NNE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | 6 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.21 | 767.3 | 30.28 | 769.2 | 30.6 | — 0.8 | 92 | N | 14.1 | 6.3 | ..... | ..... | 9 | ..... | NNE,NE | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.24 | 717.3 | 29.69 | 754.2 | 45.5 | 7.5 | 71 | N | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | The Observatory. |
| Zurich | 28.08 | 713.1 | 29.74 | 755.5 | 44.2 | 6.8 | 67 | N | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0.024 | 0.6 | Cloudy | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —7.1 mm.; Thermometer,—1.5 Cent.; Relative Humidity, +12 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.63 | 752.5 | 60.1 | 15.6 | 48 | S | 22 | 10.0 | ..... | ..... | 9 | ..... | SW | 0.535 | 13.6 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.28 | 769.0 | 70.7 | 21.5 | ..... | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.76 | 755.9 | 55.9 | 13.3 | ..... | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.47 | 12. | Cloudy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.74 | 755.4 | 29.86 | 758.4 | 69.1 | 20.6 | 79 | NE | ..... | ..... | 1 | 10cs | ..... | ..... | ..... | 0 | 0 | Overcast | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.88 | 758.9 | 29.95 | 760.7 | 30.2 | — 1.0 | ..... | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Hon. J. Ferguson. |
| Brockville, Ontario | 29.77 | 756.1 | 30.09 | 764.3 | 25 | — 3.9 | ..... | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | 0.65 | 1.3 | Cloudy | W. R. Bigg. |
| *Chatham, N. B | 29.91 | 759.7 | 29.97 | 761.2 | 36 | — 1.1 | 95 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 30.00 | 762.0 | 30.05 | 763.3 | 32 | 0.0 | 92 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.77 | 756.1 | 29.97 | 761.2 | 31.0 | — 1.1 | 88 | N | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.25 | 6.3 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 29.82 | 757.4 | 29.86 | 758.4 | 48.3 | 9.1 | 92 | Calm | ..... | ..... | ..... | 10cs | 0 | ..... | ..... | 0.85 | 21.6 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 29.87 | 758.7 | 29.89 | 759.2 | 32 | 0.0 | 95 | SW | 20 | 8.9 | ..... | 5k | 5n | W | W | 0.02 | 0.5 | Light snow | J. McWilliams. |
| Fredericton, N. B | 29.93 | 760.2 | 30.00 | 762.0 | 35.0 | 1.7 | 85 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | ..... | 0.10 | 2.6 | Overcast | Prof. Harrison. |
| *Fort Garry, Manitoba | 28.74 | 730.0 | 29.58 | 751.3 | 33 | 0.6 | 95 | S | 15 | 6.7 | ..... | 5ck | 5n | S | S | 0 | 0 | Cloudy | James Stewart. |
| Granton, Ontario | 29.06 | 738.1 | 30.24 | 768.1 | 28 | — 5.0 | ..... | NW | ..... | ..... | 1 | 2c | 0 | NW | ..... | Inap. | Inap. | Fair | James Grant. |
| *Halifax, N. S | 29.94 | 760.5 | 30.08 | 764.0 | 32 | 0.0 | 92 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | SE | 0 | 0 | Cloudy | F. Allison, M. A. |
| Hamilton, Ontario | 29.85 | 758.2 | 30.24 | 768.1 | 27.7 | — 2.4 | 86 | SW | ..... | ..... | 1 | 10cs | 0 | SW | ..... | 0 | 0 | Overcast | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.75 | 755.6 | 30.11 | 764.8 | 28 | — 2.2 | 87 | W | 9 | 4.0 | ..... | ..... | 10s | ..... | ..... | 0.16 | 4.1 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.07 | 763.8 | 30.11 | 764.8 | 30.2 | — 1.0 | 96 | SSW | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 29.73 | 755.1 | 29.94 | 760 5 | 32 | 0.0 | 94 | N | 15 | 6.7 | ..... | ..... | 10n | ..... | ..... | 0.46 | 11.7 | Heavy snow | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.61 | 740.5 | 30.27 | 768.8 | 14 | —10.0 | 82 | N | 9 | 4.0 | ..... | 2ck | 2ks | NW | NW | 0.22 | 5.6 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 29.30 | 744.2 | 30.10 | 764.5 | 22.4 | — 5.3 | 70 | Calm | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.10 | 2.5 | Overcast | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.49 | 749.0 | 30.22 | 767.6 | 28 | — 2.2 | 77 | NW | 8 | 3.6 | ..... | 10k | 0 | NW | ..... | 0.22 | 5.6 | Fair | H. Morgan. |
| Port Hastings, N. S | 30.06 | 763.5 | 30.11 | 764.8 | 29.6 | — 1.4 | ..... | W | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.52 | 749.8 | 30.21 | 767.3 | 28 | — 2.2 | 79 | NW | 12 | 5.4 | ..... | ..... | 10ks | ..... | NW | 0.06 | 1.5 | Cloudy | M. Payne. |
| *Quebec, Quebec | 29.61 | 752.1 | 29.95 | 760 7 | 31 | — 0.6 | 100 | Calm | ..... | ..... | 0 | Haze | Fog | ..... | ..... | 0.05 | 1.3 | Foggy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.71 | 754.6 | 30.21 | 767.3 | 15 | — 9.4 | 62 | NW | 6 | 2.7 | ..... | ..... | 8s | ..... | NW | 0.32 | 8.1 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.92 | 760.0 | 29.97 | 761.2 | 37 | 2.8 | 87 | SW | ..... | ..... | 2 | Haze | Haze | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| St. John, N. B | 29.84 | 757.9 | 30.01 | 762.2 | 34 | 1.1 | 79 | S | 13 | 5.8 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Overcast | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.50 | 749.3 | 30.27 | 768.8 | 20 | — 6.7 | 77 | N | 10 | 4.5 | ..... | 5k | 0 | N | ..... | 0.19 | 4.8 | Clearing | K. Stewart. |
| Stayner, Ontario | 29.39 | 746.5 | 30.23 | 767.8 | 19 | — 7.2 | 83 | N | 13 | 5.8 | ..... | ..... | 10n | ..... | N | 0.20 | 5.1 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.86 | 733.0 | 30.24 | 768.1 | 20.8 | — 6.2 | 90 | NW | 9.0 | 4.0 | ..... | 1c | 2s | NW | ..... | 0.15 | 3.8 | Fair | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.09 | 764.3 | 30.13 | 765.3 | 31 | — 0.6 | 81 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.83 | 757.7 | 30.23 | 767.8 | 23 | — 5.0 | 77 | NW | 17 | 7.6 | ..... | ..... | 10ks | ..... | NW | 0.05 | 1.3 | Cloudy | Magnetic Observatory. |
| Windsor, N. S | 29.96 | 761.0 | 30.06 | 763.5 | 33.0 | 0.6 | 80 | ..... | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 28.0 | — 2.2 | 100 | SE | ..... | ..... | ..... | 5 | 5 | ..... | ..... | Inap. | Inap. | Overcast | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Cloud. Amount. Up'er 0—10. | Cloud. Amount. Low'r 0—10. | Cloud. Direction. Upper. From— | Cloud. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.77 | 756.1 | 30.01 | 762.2 | 36 | 2.2 | 85 | S | 4 | 1.8 | | | 10s | | W | Inap. | Inap. | Cloudy | |
| Alpena, Michigan | 29.62 | 752.3 | 30.32 | 770.1 | 17 | — 8.3 | 83 | Calm | 0 | 0 | | 0 | 0 | | | 0.02 | 0.5 | Clear | |
| Atlanta, Georgia | 29.02 | 737.1 | 30.18 | 766 6 | 50 | 10.0 | 44 | NW | 7 | 3.1 | | 2c | Sm'e | W | Calm | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 30.06 | 763.5 | 30.08 | 764.0 | 41 | 5.0 | 74 | NW | 12 | 5.4 | | 0 | 0 | | | 0.01 | 0.3 | Clear. | |
| Augusta, Georgia | 30.01 | 762 2 | 30.19 | 766.8 | 50 | 10.0 | 72 | NW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear. | |
| Baltimore, Maryland | 30.09 | 764.3 | 30.14 | 765.5 | 45 | 7.2 | 53 | NW | 7 | 3.1 | | 8k | 0 | NW | | 0 | 0 | Fair | |
| Barnegat, New Jersey | 30.02 | 762.5 | 30.05 | 763.3 | 42 | 5.6 | 74 | NW | 13 | 5.8 | | 2k | 0 | W | | 0 | 0 | Clear | |
| Bismarck, Dakota | 27.80 | 706.1 | 29.66 | 753.4 | 39 | 3.9 | 81 | S | 3 | 1.3 | | | 10s | | NW | 0 | 0 | Cloudy | |
| Boerne, Texas | 28.67 | 728.2 | 29.96 | 761.0 | 65 | 18.3 | 100 | SE | 2 | 0.9 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.25 | 692.1 | 30.21 | 767.2 | 50 | 10.0 | 80 | E | 4 | 1.8 | | | 10s | | Calm | 0.07 | 1.8 | Cloudy | |
| Boston, Massachusetts | 29.84 | 757.9 | 30.00 | 762.0 | 40 | 4.4 | 82 | SW | 6 | 2.7 | | 5k | 2s | SW | SW | 0 | 0 | Fair | |
| Brackettville, Texas | 28.97 | 735.8 | 29.98 | 761.5 | 69 | 20.6 | 85 | SE | 7 | 3 1 | | | 10s | | SE | Inap. | Inap. | Cloudy | |
| Breckenridge, Minnesota | 28.74 | 730.0 | 29.75 | 755.6 | 34 | 1.1 | 100 | SE | 24 | 10.7 | | 2ck | 8s | Calm | Calm | 0 | 0 | Cloudy | |
| Brownsville, Texas | 30.02 | 762.5 | 30.07 | 763.8 | 71 | 21.7 | 95 | SE | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Buffalo, New York | 29.46 | 748.3 | 30.20 | 767.1 | 27 | — 2.8 | 76 | NW | 10 | 4.5 | | | 10s | | NW | 0.09 | 2.3 | Cloudy | |
| Burkes, Arizona | | | | | 55 | 12.8 | 28 | SW | | | 1 | 2c | 0 | Calm | | 0 | 0 | Clear | |
| Burlington, Vermont | 29.65 | 753.1 | 29.94 | 760.5 | 37 | 2.8 | 81 | SW | 8 | 3.6 | | | 10c | | Calm | 0 | 0 | Threatening | |
| Cairo, Illinois | 29.91 | 759.7 | 30.32 | 770.1 | 45 | 7.2 | 68 | E | 8 | 3.6 | | 2ck | 0 | NW | | 0 | 0 | Fair | |
| Camp Apache, Arizona | | | | | | | | | | | | | | | | | | | |
| Camp Grant, Arizona | 25.27 | 641.8 | 30.07 | 763.8 | 58 | 14.4 | 42 | NE | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Camp Verde, Arizona | | | | | 44 | 6.7 | 37 | N | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Campo, California | 27.51 | 698.7 | 30.08 | 764.0 | 30 | 3.9 | 73 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.05 | 763 3 | 30.06 | 763.5 | 50 | 10.0 | 86 | NE | 8 | 3.6 | | 1cs | 0 | Calm | | 0 | 0 | Clear | |
| Cape Henry, Virginia | 30.11 | 764.8 | 30.13 | 765.3 | 47 | 8.3 | 62 | N | 18 | 8.0 | | 0 | 0 | | | 0.40 | 10.2 | Clear | |
| Cape Lookout, N. Carolina | 30.04 | 763.0 | 30.06 | 763.5 | 56 | 13.3 | 81 | N | 20 | 8.9 | | 5c | Haze | W | Calm | 0 | 0 | Hazy | |
| Cape May, New Jersey | 30.05 | 763.3 | 30.08 | 764 0 | 43 | 6.1 | 83 | NW | 14 | 6.3 | | 5ck | 0 | NW | | 0 | 0 | Fair | |
| Castroville, Texas | 29.34 | 745.2 | 30.03 | 762.8 | 69 | 20.6 | 85 | S | 6 | 2.7 | | | 10s | | S | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 30.07 | 763.8 | 30.12 | 765.0 | 57 | 13.9 | 58 | N | 6 | 2.7 | | 0 | Fog | | Calm | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 24.04 | 610.6 | 29.98 | 761.5 | 52 | 11.1 | 29 | NW | 16 | 7.2 | | 0 | 8ks | | NW | 0 | 0 | Cloudy | |
| Chicago, Illinois | 29.52 | 749.8 | 30.23 | 767.8 | 38 | 3.3 | 63 | S | 3 | 1.3 | | 10ck | 0 | W | | 0 | 0 | Cloudy | |
| Cincinnati, Ohio | 29.64 | 752.8 | 30.32 | 770.1 | 35 | 1.7 | 53 | N | 6 | 2.7 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Cleveland, Ohio | 29.50 | 749.3 | 30.26 | 768.6 | 31 | — 0.6 | 79 | NW | 7 | 3.1 | | 2k | 0 | W | | 0.02 | 0.5 | Clear | |
| Coleman City, Texas | | | | | | | | | | | | | | | | | | | |
| Columbus, Ohio | 29.41 | 747.0 | 30.28 | 769.1 | 34 | 1.1 | 61 | NW | 4 | 1.8 | | 0 | Sm'e | | Calm | Inap. | Inap. | Clear | |
| Concao, Texas | 28.15 | 715.0 | 29.81 | 757.2 | 58 | 14.4 | 76 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Corsicana, Texas | 29.65 | 753.1 | 30.11 | 764.8 | 63 | 17.2 | 94 | S | 5 | 2.2 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.52 | 749.8 | 30.18 | 766.6 | 36 | 2.2 | 80 | NE | 3 | 1.3 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Deadwood, Dakota | 25.21 | 640.3 | | | 40 | 4.4 | 82 | W | 2 | 0.9 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Decatur, Texas | 28.91 | 734.3 | 30.06 | 763.5 | 65 | 18.3 | 73 | S | 7 | 3.1 | | 2c | 0 | S | | 0 | 0 | Clear | |
| Denison, Texas | 29.27 | 743.4 | 30.06 | 763.5 | 57 | 13.9 | 58 | SE | 7 | 3.1 | | 2cs | 0 | Calm | | 0 | 0 | Fair | |
| Denver, Colorado | 24.76 | 628.9 | 29.98 | 761.5 | 51 | 10.2 | 34 | S | 8 | 3.6 | | 5ck | 6s | W | Calm | 0 | 0 | Cloudy | |
| Des Moines, Iowa | 29.14 | 740.1 | 30.04 | 763.0 | 40 | 4.4 | 73 | SE | 4 | 1.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Detroit, Michigan | 29.55 | 750.6 | 30.27 | 768.8 | 26 | — 3.3 | 88 | N | 6 | 2.7 | | 0 | 0 | | | 0.01 | 0.3 | Clear | |
| Dodge City, Kansas | 27.39 | 695.7 | 29.70 | 754.4 | 42 | 5.6 | 50 | SW | 4 | 1.8 | | 5c | 0 | NW | | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.44 | 747.8 | 30.17 | 766.3 | 33 | 0.6 | 70 | SW | 4 | 1.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 29.35 | 745.5 | 30.05 | 763.3 | 31 | — 0.6 | 79 | SW | 3 | 1.3 | | 2ck | 2s | SW | Calm | 0 | 0 | Fair | |
| Eagle Pass, Texas | 29.30 | 744.2 | 30.02 | 762.5 | 70 | 21.1 | 85 | S | 10 | 4.5 | | 0 | 5s | | S | Inap. | Inap. | Fair | |
| Eastport, Maine | 29.92 | 760.0 | 29.99 | 761.7 | 36 | 2.2 | 80 | S | 7 | 3.1 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Edinburg, Texas | | | | | 65 | 18.3 | 84 | SE | | | 1 | | 8s | | S | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.30 | 668.0 | | | 48 | 8.9 | 35 | W | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.48 | 748.8 | 30.23 | 767.8 | 32 | 0.0 | 69 | NW | 13 | 5.8 | | 8k | 0 | W | | 0.29 | 7.4 | Cloudy | |
| Escanaba, Michigan | 29.58 | 751.3 | 30.31 | 769.9 | 7 | —13.9 | 54 | N | 4 | 1.8 | | 10ck | 0 | NW | | 0 | 0 | Cloudy | |
| Florence, Arizona | 28.56 | 725.4 | 30.16 | 766.1 | 51 | 10.6 | 59 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.61 | 701.3 | | | 39 | 3.9 | 81 | SW | 4 | 1.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Fort Craig, New Mexico | 25.61 | 650.5 | 29.68 | 753.9 | 51 | 10.6 | 12 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.27 | 641.8 | 30.23 | 767.8 | 45 | 7.2 | 48 | W | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Smoky | |
| Fort Gibson, Indian Ter | 29.54 | 750.3 | 30.08 | 764.0 | 57 | 13.9 | 41 | SE | 6 | 2.7 | | 10cs | 0 | W | | 0 | 0 | Cloudy | |
| Fort Griffin, Texas | 28.76 | 730.5 | 30.03 | 762.8 | 55 | 12.8 | 74 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.17 | 690.1 | | | 42 | 5.6 | 83 | S | 11 | 4.9 | | | 10n | | Calm | 0.02 | 0.5 | Light rain | |
| Fort McKavett, Texas | 27.85 | 707.4 | 29.73 | 755.1 | 63 | 17.2 | 89 | Calm | 0 | 0 | | | 10s | | SW | 0 | 0 | Fair? | |
| Fort St. Michael, Alaska | | | | | | | | | | | | | | | | | | | |
| Fort Sill, Indian Territory | 28.83 | 732.3 | 29.95 | 760.7 | 47 | 8.3 | 77 | N | 6 | 2.7 | | 5c | 0 | NW | | 0 | 0 | Fair | |
| Fort Stevenson, Dakota | 27.77 | 705.4 | | | 38 | 3.3 | 81 | SW | 6 | 2.7 | | 5ck | 0 | W | | Inap. | Inap. | Cloudy | |
| Fredericksburg, Texas | 28.36 | 720.3 | 29.89 | 759.2 | 68 | 20.0 | 79 | S | 4 | 1.8 | | 0 | 5ks | | Calm | 0 | 0 | Fair | |
| Galveston, Texas | 30.11 | 764.8 | 30.15 | 765.8 | 64 | 17.8 | 89 | SE | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Graham, Texas | 28.99 | 736.3 | 30.04 | 763.0 | 57 | 13.9 | 81 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.59 | 751.6 | 30.29 | 769.4 | 26 | — 3.3 | 75 | E | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.46 | 748.3 | 30.29 | 769.4 | 33 | 0.6 | 79 | Calm | 0 | 0 | | 0 | Fog | | Calm | 0 | 0 | Clear | |
| Indianola, Texas | 30.11 | 764.8 | 30.14 | 765.5 | 67 | 19.4 | 89 | E | 8 | 3.6 | | 1c | 0 | Calm | | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.91 | 734.3 | 30.03 | 762.8 | 59 | 15.0 | 48 | SE | 4 | 1.8 | | 5cs | 0 | S | | 0 | 0 | Fair | |
| Jacksonville, Florida | 30.13 | 765.3 | 30.16 | 766.1 | 59 | 15.0 | 65 | NE | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.15 | 740.4 | 30.14 | 765.5 | 39 | 3.9 | 82 | SE | 9 | 4.0 | | | 10s | | NW | 0 | 0 | Cloudy | |
| Key West, Florida | 30.08 | 764.0 | 30.12 | 765.0 | 75 | 23.9 | 77 | NW | 3 | 1.3 | | 5k | 0 | N | | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 30.05 | 763.3 | 30.08 | 764.0 | 47 | 8.3 | 85 | NE | 20 | 8.9 | | 8ck | 0 | W | | 0.35 | 8.9 | Fair | |
| Knoxville, Tennessee | 29.23 | 742.4 | 30.27 | 768.8 | 40.5 | 4.7 | 69 | N | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Foggy | |
| La Crosse, Wisconsin | 29.37 | 746.0 | 30.14 | 765.5 | 34 | 1.1 | 70 | S | 5 | 2.2 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 26.16 | 664.4 | 30.31 | 769.9 | 40 | 4.4 | 56 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Laredo, Texas | 29.65 | 753.1 | 29.99 | 761.7 | 72 | 22.2 | 89 | E | 4 | 1.8 | | 10ck | 0 | SE | | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.17 | 740.9 | 30.02 | 762.5 | 46 | 7.8 | 47 | S | 10 | 4.5 | | 10cs | 0 | W | | 0 | 0 | Cloudy | |
| Los Angeles, California | 29.73 | 755.1 | 30.08 | 764.0 | 52.0 | 11.1 | 86 | NE | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.71 | 754.6 | 30.30 | 769.6 | 38 | 3.3 | 72 | N | 3 | 1.3 | | 0 | Sm'e | | Calm | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.45 | 748.0 | 30.14 | 765.5 | 49 | 9.4 | 43 | NW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Madison, Wisconsin | 29.15 | 740.4 | 30.18 | 766.6 | 34 | 1.1 | 79 | SE | 8 | 3.6 | | | 10s | | W | 0 | 0 | Cloudy | |
| Marquette, Michigan | 29.48 | 748.8 | 30.28 | 767.8 | 20 | — 6.7 | 70 | Calm | 0 | 0 | | | 10s | S | W | 0 02 | 0.5 | Cloudy | |
| Mason, Texas | 28.48 | 723.4 | 30.22 | 767.6 | 65 | 18.3 | 83 | SE | 5 | 2.2 | | | 10s | | S | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.93 | 760.2 | 30.26 | 768.6 | 49 | 9.4 | 77 | NE | 4 | 1.8 | | 0 | Sm'e | | Calm | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.40 | 746 7 | 30.15 | 765.8 | 30 | 3.9 | 73 | SE | 10 | 7.2 | | 10ck | 0 | SW | | 0 | 0 | Cloudy | |
| Mobile, Alabama | 30.18 | 766.6 | 30.23 | 767.8 | 54 | 12.2 | 80 | N | 4 | 1.8 | | 0 | Haze | | | 0 | 0 | Clear | |
| Montgomery, Alabama | 30.01 | 762.2 | 30.25 | 768.3 | 52 | 11.1 | 66 | N | 3 | 1.3 | | 0 | Sm'e | | Calm | 0 | 0 | Clear | |
| Morgantown, West Virginia | 29 12 | 739.6 | 30.20 | 767.1 | 40 | 4.4 | 56 | NW | 7 | 3.1 | | 0 | 5ks | | NW | 0.37 | 9.4 | Fair | |
| Mt. Washington, N. H. | 23.50 | 596.9 | 29.86 | 758.4 | 15 | — 9.4 | 100 | NW | 40 | 17.9 | | | Fog | | NW | 0 | 0 | Foggy | |
| Nashville, Tennessee | 29.74 | 755.4 | 30.29 | 769.4 | 45 | 7.2 | 61 | Calm | 0 | 0 | | 0 | Sm'e | | | 0 | 0 | Clear | |
| New Haven, Connecticut | 29 88 | 758.9 | 30.00 | 762.0 | 45 | 7.2 | 80 | W | 3 | 1.3 | | 2ck | Haze | S | Calm | 0 | 0 | Fair | |
| New London, Connecticut | 29.97 | 761.2 | 30.02 | 762.5 | 40 | 4.4 | 91 | N | 2 | 0.9 | | 4k | 6s;d | W | Calm; N | 0 | 0 | Cloudy | |
| New Orleans, Louisiana | 30.13 | 765.3 | 30.20 | 767.1 | 59 | 15.0 | 82 | N | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.94 | 760.5 | 30.00 | 762.0 | 42 | 5.6 | 83 | Calm | 0 | 0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| New York, New York | 29.88 | 758.9 | 30.06 | 763.5 | 39 | 3.9 | 81 | NW | 8 | 3.6 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 30.06 | 763.5 | 30.12 | 765.0 | 47 | 8.3 | 70 | N | 15 | 6.7 | | 0 | 0 | | | 0.35 | 8.9 | Clear | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Millimeters. | Reduced to sea-level. Inches. | Millimeters. | Temperature of the Air. Fahrenheit. | Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Velocity. Miles per hour. | Meters per second. | Force. 0—10 | Clouds. Amount. Up'er 0—10 | Low'r 0—10. | Direction. Upper. From— | Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 26.98 | 685.3 | 29.59 | 751.6 | 36 | 2.2 | 75 | NW | 7 | 3.1 | ..... | 10cs | Sm'e | NW | Calm | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 29.88 | 758.9 | 29.92 | 760.0 | 48.3 | 9.1 | 93 | S | 3 | 1.3 | ..... | ..... | 10n | ..... | ..... | 0.86 | 21.8 | Light rain | |
| Omaha, Nebraska | 28.79 | 731.3 | 29.89 | 759.2 | 43 | 6.1 | 59 | SE | 7 | 3.1 | ..... | 5cs | Sm'e | NW | Calm | 0 | 0 | Fair | |
| Oswego, New York | 29.76 | 755.9 | 30.10 | 764.5 | 36 | 2.2 | 90 | E | 8 | 3.6 | ..... | ..... | 10n | ..... | ..... | 0.05 | 1.3 | Light snow. | |
| Pembina, Dakota | 28.83 | 732 3 | 29.67 | 753.6 | 34 | 1.1 | 100 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| Philadelphia, Pa | 30.04 | 763.0 | 30.09 | 764.3 | 41 | 5.0 | 74 | NW | 10 | 4.5 | ..... | 2lc | 0 | N | ..... | 0.01 | 0.3 | Fair | |
| Phœnix, Arizona | 28.85 | 732.8 | 30.05 | 763.1 | 67 | 19.9 | 47 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.86 | 453.4 | 30.06 | 763.5 | 20 | — 6.7 | 41 | W | 20 | 8.9 | ..... | 10cs | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Ploche, Nevada | 24.21 | 614.9 | 29.98 | 761.5 | 47.5 | 8.6 | 48 | NW | 4 | 1.8 | ..... | 0 | 8s | ..... | NW | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 29.39 | 746.5 | 30.24 | 768.1 | 35 | 1.7 | 70 | NW | 7 | 3.1 | ..... | ..... | 10s | ..... | N | 0.15 | 3.8 | Cloudy | |
| Port Huron, Michigan | 29.56 | 750.8 | 30.26 | 768.6 | 26 | — 3.3 | 75 | N | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Portland, Maine | 29.92 | 760.0 | 29.97 | 761.2 | 37 | 2.8 | 71 | SW | 4 | 1.8 | ..... | 5k | 5s | Calm | Calm | 0 | 0 | Cloudy | |
| Portland, Oregon | 29.93 | 760.2 | 30.03 | 762.8 | 49.0 | 9.4 | 97 | S | 3 | 1.3 | ..... | ..... | 10s;fg | ..... | SE | 0.98 | 24.9 | Cloudy | |
| Prescott, Arizona | 24.85 | 631.2 | 30.21 | 767.3 | 40 | 4.4 | 56 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.12 | 739.6 | 29.93 | 760.2 | 60 | 15.6 | 82 | SE | 13 | 5.8 | ..... | 8k | 0 | S | ..... | 0 | 0 | Cloudy | |
| Punta Rassa, Florida | 30.12 | 765.0 | 30.14 | 765.5 | 68 | 20.0 | 90 | NE | 10 | 4.5 | ..... | ..... | 10ks | ..... | NE | 0.02 | 0.5 | Cloudy | |
| Red Bluff, California | 29.83 | 757.7 | 30.10 | 766.8 | 59 | 15.0 | 88 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Rio Grande City, Texas | 29.91 | 759.7 | 30.12 | 765.0 | 72 | 22.2 | 90 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Rochester, New York | 29.52 | 749.8 | 30.17 | 766.3 | 27 | — 2.8 | 88 | NW | 16 | 7.2 | ..... | ..... | 10n | ..... | NW | 0.05 | 1.3 | Light snow. | |
| Roseburg, Oregon | 29.46 | 748.3 | 30.03 | 762.8 | 52.0 | 11.1 | 100 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 1.12 | 28.4 | Light rain | |
| Sacramento, California | 30.14 | 765.5 | 30.22 | 767.6 | 57 | 13.9 | 91 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| St. Louis, Missouri | 29.64 | 752.8 | 30.24 | 768.1 | 45 | 7.2 | 61 | S | 10 | 4.5 | ..... | 5cs | 5s | W | Calm | 0 | 0 | Cloudy | |
| St. Marks, Florida | 30.17 | 766 3 | 30.19 | 766.8 | 56 | 13.3 | 94 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.13 | 739.9 | 29 98 | 761.5 | 34 | 1.1 | 75 | SE | 16 | 7.2 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Salt Lake City, Utah | 25.74 | 653.8 | 30.06 | 763.5 | 53 | 11.7 | 36 | Calm | 0 | 0 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| San Antonio, Texas | 29.44 | 747.8 | 30.01 | 762.2 | 69 | 20.6 | 90 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| San Diego, California | 30.01 | 762.2 | 30.08 | 764.0 | 51.6 | 10.8 | 100 | NE | 1 | 0.4 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Sandusky, Ohio | 29.58 | 751.3 | 30.29 | 769.4 | 30 | — 1.1 | 68 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandy Hook, New Jersey | 29.99 | 761.7 | 30.03 | 762.8 | 41 | 5.0 | 91 | W | 14 | 6.3 | ..... | Haze | 2ks | Calm | W | 0 | 0 | Hazy | |
| San Francisco, California | 30.18 | 766.6 | 30.25 | 768.3 | 56.3 | 13.5 | 94 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0.01 | 0.3 | Foggy | |
| Santa Fé, New Mexico | 23.24 | 590.3 | 29.78 | 756.4 | 38 | 3.3 | 45 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.07 | 763.8 | 30.16 | 766.1 | 67 | 18.9 | 58 | N | 9 | 4.0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Shreveport, Louisiana | 29.93 | 760.2 | 30.15 | 765.8 | 58 | 14.4 | 58 | SE | 3 | 1.3 | ..... | Haze | 2ks | Calm | Calm | 0 | 0 | Fair | |
| Silver City, New Mexico | 24.39 | 619.5 | 30.67 | 779.0 | 40 | 4.4 | 64 | NW | 1 | 0 4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.08 | 764.0 | 30.12 | 765.0 | 55 | 12.8 | 68 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.88 | 758.9 | 30.01 | 762.2 | 42 | 5.6 | 74 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Stockton, Texas | 27.06 | 687.3 | 30.06 | 763.5 | 48 | 8.9 | 43 | SW | 4 | 1.8 | ..... | 0 | 5ks | ..... | W | 0 | 0 | Fair | |
| Thatcher's Island, Mass. | 29.96 | 761.0 | 30.01 | 762.2 | 37 | 2.8 | 53 | S | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Toledo, Ohio, | 29.56 | 750.8 | 30.28 | 769.1 | 31 | — 0.6 | 69 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Tucson, Arizona | 27.60 | 703.6 | 30.15 | 765.8 | 51 | 10.6 | 45 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.69 | 754.1 | 30.18 | 766.6 | 50.0 | 10.0 | 82 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.05 | 1.3 | Cloudy | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 24 | — 4.4 | 75 | Calm | ..... | ..... | 0 | 10c | 0 | S | ..... | 0 | 0 | Fair | |
| Uvalde, Texas | 29.21 | 741.9 | 30.01 | 762.2 | 70 | 21.1 | 80 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Vicksburg, Mississippi | 29.97 | 761.2 | 30.23 | 767.8 | 57 | 13.9 | 58 | SE | 10 | 4.5 | ..... | 5c | Haze | Calm | ..... | 0 | 0 | Fair | |
| Virginia City, Montana | 24.20 | 614.7 | 29.68 | 753.9 | 42 | 5.6 | 83 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.10 | 2.5 | Cloudy | |
| Visalia, California | 29.86 | 758.4 | 30.23 | 767.8 | 56.5 | 13.6 | 90 | NW | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Washington, D. C. | 30.03 | 762.8 | 30.15 | 765.8 | 43 | 6.1 | 51 | NW | 12 | 5.4 | ..... | 5ck | 5ks | NW | NW | 0 | 0 | Cloudy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 53 | 11.7 | 61 | NW | ..... | ..... | 1 | 8c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 30.02 | 762.5 | 30.10 | 764.5 | 54 | 12.2 | 61 | N | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.80 | 655.3 | 30.16 | 766.1 | 50 | 10.0 | 82 | SW | 13 | 5.8 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy | |
| Wood's Holl, Mass. | 29.96 | 761.0 | 30.00 | 762.0 | 42 | 5.6 | 91 | S | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light rain | |
| Yankton, Dakota | 28.56 | 725.4 | 29.87 | 758.7 | 36 | 2.2 | 71 | S | 3 | 1.3 | ..... | 10c | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.82 | 757.4 | 29.99 | 761.7 | 59 | 15.0 | 71 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark. | 28.51 | 724.1 | 29.92 | 760.0 | 53 | 11.7 | 80 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba. W. I. | 30.00 | 763.5 | 30.11 | 764.8 | 75 | 23.9 | 81 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A. | 25.24 | 641.1 | ..... | ..... | 65.2 | 18.4 | 87 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0.15 | 3.8 | ..... | Thomas Herran. |
| Navassa, W. I. | 29.98 | 761.5 | 30.06 | 763.5 | 79 | 26.1 | ..... | NE | 4.2 | 1.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Partly cl'dy. | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.02 | 762.5 | 30.02 | 762.5 | 81 | 27.2 | 83 | E | ..... | ..... | 2 | 8c | 8k | E | ..... | 0.090 | 2.29 | Fair | O. J. Hering. |
| Santiago de Cuba, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A. | 29.86 | 758.4 | 29.92 | 760.0 | — 9.6 | —23.1 | 78 | NE | 12 | 5.4 | ..... | 1c | 0 | NE | ..... | 0.01 | 0.3 | Fair | J. Fortescue & W. Wood. |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,393 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,861 (?) ft., or 2,088.1 (?) m.; Silver City, 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,336.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.855 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.07 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.83 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | | | | | | | | | | | | | | | | | | | | | |
| Navy Yard, Pensacola, Fla. | 30.30 | 769.6 | 67 | 13.9 | 57 | 13.9 | 75 | NE | 3 | 1.3 | | | 0 | | | 0 | 0 | | | Clear. | |
| Navy Yard, Portsmouth, N.H | 30.00 | 762.0 | 63 | 17.2 | 31 | — 0.6 | | SW | 2 | 0.9 | | | 10 | | | 0 | 0 | | | Cloudy | |
| Naval Hospital, Yokohama, Japan | *30.28‡ | 769.1‡ | | | 53.8 | 12.1 | 67 | SW | | | 6 | | 4k;s | | SW | 0 | 0 | | | Fair | |
| Adams, Panama | *30.00 | 762.0 | 80 | 26.7 | 78 | 25.6 | 95 | NW | | | 1 | | 2 | | N;W | | | | | Clear | |
| Alaska, N. 45° 25′, W. 124° 47′ | 29.88‡ | 758.9‡ | | | 52 | 11.1 | 86 | SE | | | 5 | | 10 | | | 1.725 | 43.82 | Mod'ate | | Raining | |
| Alliance, N. 43° 00′, E. 9° 28′ | 29.67‡ | 753.6‡ | | | 57 | 13.9 | 75 | SSE | | | 2 | | 4 | | S;W | | | Light | S | Pleasant | |
| Ashuelot, Hong-Kong, China | *30.11‡ | 764.8‡ | | | 63 | 17.2 | 89 | Calm | | | 0 | | 0 | | | | | | | Clear | |
| Canonicus, New Orleans, La. | *30.15 | 765.8 | 44 | 6.7 | 57 | 13.9 | 94 | NW | | | 2 | | 0 | | | | | | | Clear | |
| Colorado, New York, N. Y. | 30.04 | 763.0 | 43.5 | 6.4 | 41 | 5.0 | 96 | SW | 6 | 2.7 | | | 8 | | NW | 0 | 0 | | | Dense haze | |
| Constitution Lisbon, Portugal | 29.77‡ | 756.1‡ | | | 59 | 15.0 | 94 | SE | | | 2 | | 8 | | NE | | | | | Pleasant | |
| Despatch, N. 43° 21′, E. 10° 15′ | 29.72‡ | 754.9‡ | | | 59 | 15.0 | 82 | WNW | | | 3 | | 5 | | NW | | | Mod'ate | WNW | Fair | |
| Franklin, Norfolk, Va. | *30.21 | 767.3 | 61 | 16.1 | 49 | 9.4 | 52 | N | 16.8 | 7.5 | | | 0 | | | 0.4 | 10.2 | | | Clear | |
| Gettysburg, Genoa, Italy | 29.70‡ | 754.4‡ | | | 56 | 13.3 | 100 | SE | | | 4 | | 10 | | | 0 | 0 | | | Cloudy | |
| Hartford, Montevideo, Uruguay | *29.91 | 759.7 | 73 | 22.8 | 73 | 22.8 | 76 | WNW | | | 2 | | 0 | | | 0 | 0 | | | Clear | |
| Lackawana, Callao, Peru | *29.72‡ | 754.8‡ | | | 67 | 19.4 | 89 | Calm | | | 0 | | 10 | | | 0 | 0 | Smooth | | Foggy | |
| Michigan, Erie, Pa. | †30.06 | 763.5 | | | 30 | — 1.1 | 89 | NW | | | 3 | | 0 | | | | | | | Clear | |
| Monocacy, Shanghai, China | *30.12‡ | 765.0‡ | | | 55 | 12.8 | 74 | SW | | | 1 | | 0 | | | | | | | Clear | |
| Monongahela Yokohama, Japan | *30.25‡ | 768.3‡ | | | 55 | 12.8 | 62 | SSW | | | 3–5 | | 6 | | | 0 | 0 | Light | S;W | Squally | |
| New Hampshire, Port Royal, S. C. | *30.19 | 766.8 | 61 | 16.1 | 59 | 15.0 | 70 | NNW | 10 | 4.5 | | | 2 | | NW | 0 | 0 | | | Clear | |
| Onward, Callao, Peru | †*30.04 | 763.0 | | | 66 | 18.9 | 94 | Calm | | | 0 | | 10 | | | | | Long | W | Misty | |
| Palos, Tientsin, China | *29.93 | 760.2 | 49 | 9.4 | 49 | 9.4 | 37 | S | | | 3 | | 0 | | | | | | | Clear | |
| Passaic, Washington, D. C. | | | | | 36 | 2.2 | 70 | NW | | | 2 | | 10 | | | | | | | Cloudy | |
| Pensacola, Valparaiso, Chili | 29.93‡ | 760.2‡ | | | 65 | 18.3 | 68 | Calm | 0 | 0 | | | 2 | | | 0 | 0 | | | Clear | |
| Plymouth, N. 31° 13′, W. 63° 37′ | 30.29‡ | 769.4‡ | | | 69 | 20.6 | 95 | S | | | 4 | | 2 | | | | | Light | SSE | Clear | |
| Powhatan, N. 32° 52′, W. 74° 31′ | 30.01‡ | 762.2‡ | | | 66 | 18.9 | 74 | NW | | | 2 | | 2 | | NW | 0.525 | 13.34 | Mod'ate | NW | Clear | |
| Quinnebaug, Malaga, Spain | 29.70‡ | 754.4‡ | | | 61 | 16.1 | 66 | SE | | | 1 | | 10 | | S | | | | | Cloudy | |
| Ranger, Amoy, China | 30.18‡ | 766.6‡ | | | 67 | 19.4 | 79 | NW | | | 0–1 | | 2 | | Calm | | | Smooth | | Clear | |
| Richmond, N. 12° 34′, E. 43° 24′ | 29.92‡ | 760.0‡ | | | 84 | 28.9 | 79 | S | | | 4 | | 2 | | S | 0 | 0 | Mod'ate | S | Fair | |
| Rio Bravo, Brownsville, Texas | 30.08 | 764.0 | 72 | 22.2 | 71 | 21.7 | 100 | SE | | | 1 | | 2 | | SE | | | | | Fair | |
| Santee, Annapolis, Md. | 30.10‡ | 764.5‡ | | | 45 | 7.2 | 53 | NW | | | 4 | | 8 | | | 0 | 0 | | | Cloudy | |
| Saratoga, Hampton Roads, Va. | 30.13‡ | 765.3‡ | | | 47 | 8.3 | 85 | N | | | 4 | | 0 | | | 0 | 0 | | | Blue sky | |
| St. Louis, League Island, Pa. | 30.02 | 762.5 | 58 | 14.4 | 40 | 4.4 | 83 | W | 6 | 2.7 | | | 8 | | NW | 0.01 | 0.3 | | | Fair | |
| Supply, Brooklyn, N. Y. | 30.08‡ | 764.0‡ | | | 45 | 7.2 | 84 | NW | | | 1 | | 10 | | | | | | | Overcast | |
| Trenton, Genoa, Italy | *29.65‡ | 753.1‡ | | | 58 | 14.4 | 76 | ESE | | | 3–4 | | 2 | | WNW | 0.01 | 0.3 | Smooth | | Clear | |
| Tuscarora, Ventosa, Mexico | 29.94‡ | 760.6‡ | | | 80 | 26.7 | 74 | N | | | 3 | | 0 | | | 0 | 0 | Smooth | | Clear | |
| Wabash, Boston, Mass. | 30.05‡ | 763.3‡ | | | 39 | 3.9 | 82 | W | 3 | 1.3 | | | 10 | | | | | | | Foggy | |
| Wyoming, Alexandria, Egypt | *29.93‡ | 760.2‡ | | | 67 | 19.4 | 95 | Calm | | | 0 | | 8 | | | | | Smooth | | Cloudy | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. Colima, N. 21° 59′, W. 109° 50′.† | | 30.04‡ | 763.0‡ | 66 | 18.9 | | WNW | | | 2 | | 7 | | NW | 0 | Swell | NNW | Misty | Capt. Maury. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Whiteburv |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Granada, Capt. Austin, N. 28° 18′, W. 116° 04′.† | | 30.22‡ | 767.6‡ | 58 | 14.4 | | NW | | | 6 | | k | | SE | | Heavy | NW | Overcast | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Zealandia, Honolulu, Sandwich I. | | 30.09‡ | 764.3‡ | | | | S | | | 1 | | | | S | | Mod'ate | NE | Showery | Capt. A. Fuller. |
| | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; and no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

**WHITE STAR LINE MARINE SERIES.** Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

**OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, Yokohama, Japan | | 30.24‡ | 768.1‡ | 57 | 13.9 | 75 | SW | | | 6 | | ks | | SW | 0 | Mod'ate | SW | Squally | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 22° 17′, E. 114° 10′.† | | 30.27‡ | 768.8‡ | | | | NNE | | | 3 | | c | | Var. | 0 | | | | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, N. 38° 29′, W. 139° 49′ | | 29.79‡ | 756.7‡ | 54 | 12.2 | ?? | W | | | 5–6 | | 4f | | W | | 4 | SW | Squally | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

**NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 45° 59′, W. 28° 22′ | | 29.88‡ | 758.9‡ | | | | WNW | | | 6 | | | | NW | | Cross | WNW | Drizzling | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 48° 15', W. 24° 28'..... | ..... | 30.06‡ | 763.5‡ | 46 | 7.8 | ..... | NNW | ..... | ..... | 6 | ..... | 8 | ..... | NW | Mod'ate | Heavy | WNW | Cloudy. ..... | Captain Sargent. |
| S. S. Ohio..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris ... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. H. Dodge. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Randle. |
| S. S. Switzerland..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jackson. |
| S. S. Vaderland..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Nichols. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Richardson. |
| S. S. Hibernian..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Wood's Holl, Mass ..... | ..... | 29.91‡ | 759.7‡ | 41 | 5.0 | 100 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | ..... | ..... | ..... | Light rain .. | Capt. James Jorgensen. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

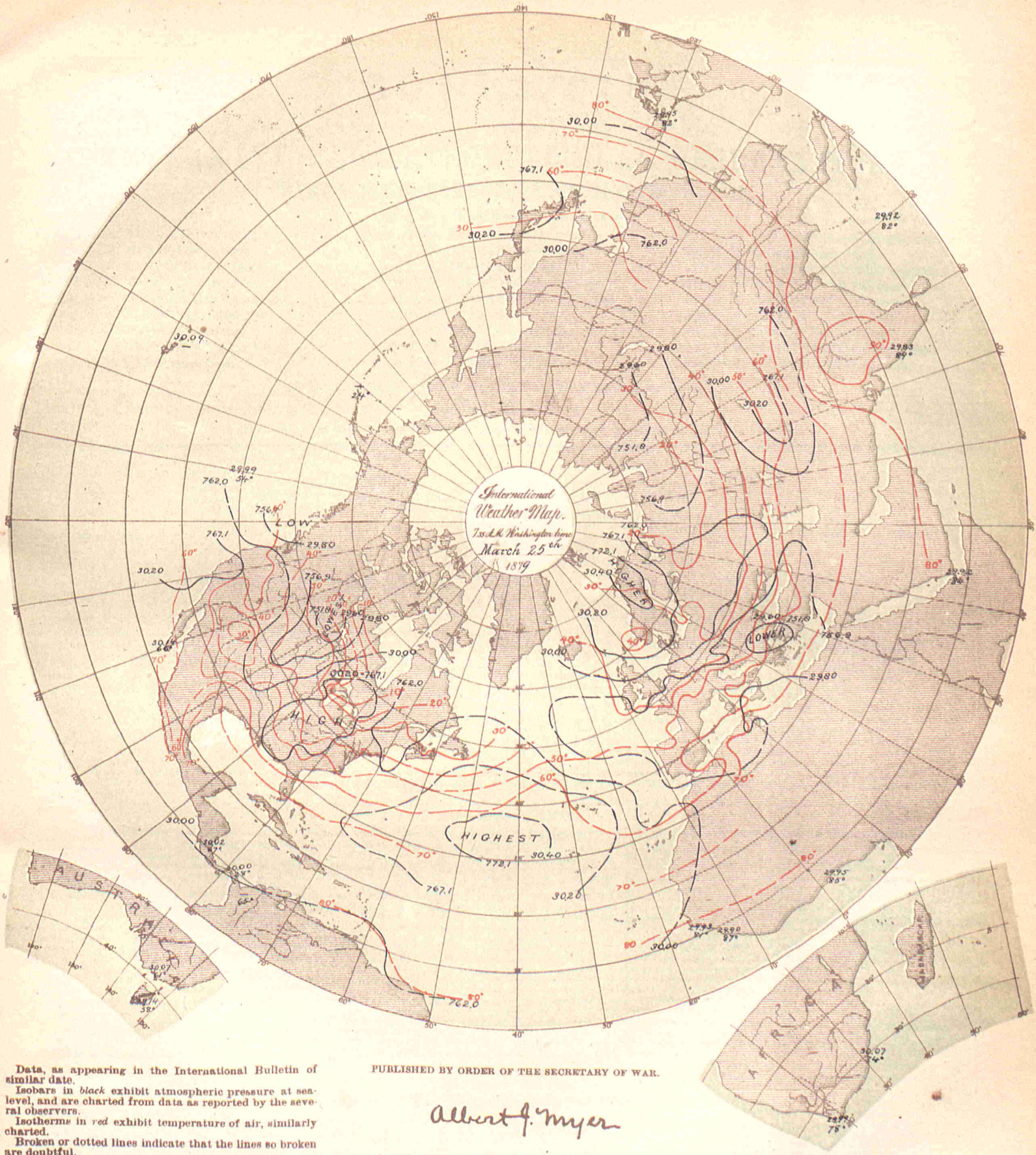
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*




**Data**, as appearing in the International Bulletin of similar date.

**Isobars** in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

**Isotherms** in *red* exhibit temperature of air, similarly charted.

**Broken or dotted lines** indicate that the lines so broken are doubtful.

**Arrows**, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE RIVERSIDE PRINTING Co. 320 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 26, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
8:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:35 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time
1:26 P. M. CHRISTIANIA mean time.
1:38 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGEGIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer, corrected for instrum'tal error and temperature. Inches. | Barometer, corrected for instrum'tal error and temperature. Millimeters. | Barometer, reduced to sea-level. Inches. | Barometer, reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 30.19 | 766.7 | 60.4 | 15.8 | 78 | NE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0.276 | 7.0 | Cloudy | |
| Nemours | ..... | ..... | 29.83 | 757.7 | 60.8 | 16.0 | 77 | WNW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.618 | 15.7 | Very cloudy | Kesxuche. |
| Algiers | ..... | ..... | 29.69 | 754.2 | 55.0 | 12.8 | 90 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.382 | 9.7 | Covered | Tourillere. |
| La Calle | ..... | ..... | 29.66 | 753.4 | 64.8 | 18.2 | 75 | NW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Foufrede. |
| Tunis | ..... | ..... | 29.57 | 751.0 | 77.7 | 25.4 | 29 | SW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0 | 0 | Foggy | Jacques. |
| Sfax | ..... | ..... | 29.65 | 753.0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 29.84 | 758.0 | 47.8 | 8.8 | 49 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 1.319 | 33.5 | Raining | Herbin. |
| Tebessa | ..... | ..... | 29.77 | 756.1 | 69.8 | 21.0 | 38 | W | ..... | ..... | 6 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Watrin. |
| Geriville | ..... | ..... | 29.79 | 756.6 | 43.5 | 6.4 | 94 | N | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.055 | 1.4 | Raining | Brugniaux. |
| Laghouat | ..... | ..... | 29.81 | 757.2 | 51.4 | 10.8 | 77 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Rainy | Bertrand. |
| Biskra | ..... | ..... | 29.71 | 754.5 | 77.4 | 25.2 | 18 | ESE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0.079 | 2.0 | Cloudy | Chauvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.30 | 744.2 | 29.86 | 758.4 | 42.8 | 6.0 | 71 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.264 | 6.7 | ..... | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.22 | 742.1 | 30.02 | 762.5 | 30.2 | — 1.0 | 92 | E | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski |
| Eperies | 29.04 | 737.5 | 29.96 | 760.9 | 31.8 | — 0.4 | ..... | N | ..... | ..... | 1 | ..... | 18 | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.41 | 726.6 | 29.90 | 759.5 | 33.6 | 0 9 | 87 | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.012 | 0.3 | ..... | Andreas Rospini. |
| Hermannstadt | 28.44 | 722.4 | 29.91 | 759.6 | 39.7 | 4.3 | 85 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.028 | 0.70 | ..... | Prof. A. Gottschling. |
| Kremsmünster | 28.41 | 721.6 | 29.80 | 756.8 | 33.6 | 0.9 | 89 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. O. Wagner. |
| Lemberg | 28.96 | 735.4 | 30.00 | 762.1 | 24.4 | — 4.2 | 89 | NE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Dr. T. Stanecki. |
| Pola | 29.67 | 753.5 | 29.78 | 756.3 | 54.7 | 12.6 | 77 | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.532 | 13.5 | ..... | I.R.Hydrographic Office. |
| Szathmar | 29.53 | 750.1 | 30.02 | 762.5 | 34.3 | 1.3 | 94 | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 29.72 | 755.0 | 29.83 | 757.6 | 53.8 | 12.1 | 80 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 2.028 | 51.5 | Rainy | P. Busin. |
| Vienna | 29.16 | 740.7 | 29.91 | 759.7 | 32.4 | 0.2 | 81 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. O. Houzeau, Director of the Royal Observatory at Brussels

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 29.47 | 748.5 | 29.67 | 753.7 | 34.7 | 1.5 | 88 | E | ..... | ..... | 1 | ..... | 10 | ..... | E | 0.012 | 0.30 | ..... | Prof. M. Passau. |
| Brussels | 29.67 | 753.5 | 29.69 | 754.1 | 34.3 | 1.3 | 93 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.024 | 0.6 | Snowing | M. E. de Cae. |
| Furnes | 29.59 | 751.6 | 29.72 | 754.8 | 35.1 | 1.7 | 92 | ESE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.039 | 1.0 | Snowing | M. Pierrot |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:9, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.95 | 760.7 | 30.05 | 763.3 | 36.5 | 2.5 | ..... | SE | 27 | 12.1 | ..... | ..... | 7 | ..... | ..... | 0.150 | 3.81 | D. clouds | W. Boswell. |
| Ardrossan | 29.83 | 757.7 | 29.84 | 757.9 | 39 | 3.9 | ..... | ESE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.75 | 755.6 | 33.9 | 1.1 | ..... | E | 13 | 5.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.72 | 754.9 | 35.0 | 1.7 | ..... | ENE | 31 | 13.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.72 | 754 9 | 33.2 | 0.7 | ..... | E | 30 | 13.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Squally | Thomas Mackereth. |
| Bradford, Yorkshire | 29.40 | 746.7 | 29.80 | 756.9 | 33.1 | 0.6 | ..... | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.05 | 1.3 | Overcast | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.94 | 760.5 | 29.97 | 761.2 | 82.0 | 27.8 | ..... | NE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | Gloomy | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.70 | 754.4 | 35.5 | 1.9 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | H. Todd. [C. |
| Cardington | ..... | ..... | 29.69 | 754.1 | 35.0 | 1.7 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | John McLaren. |
| Chatham, School M. E. | 29.54 | 750.3 | 29.68 | 753.9 | 34.7 | 1.5 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Rain & sleet | Corpl. Daly, R. E. |
| Dartmoor | 27.99 | 710.9 | 29.50 | 749.3 | 33.0 | 0.6 | ..... | NE | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | ..... | Squally | Alexander Watt. |
| Donaghadee | 29.75 | 755.6 | 29.79 | 756.7 | 38 | 3.3 | ..... | ESE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | J. Mac Gowan. |
| Dover | 29.63 | 752.6 | 29.65 | 753.1 | 38 | 3.3 | ..... | ESE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | J. Costello. |
| Falmouth, Observatory | 29.25 | 742 9 | 29.48 | 748.8 | 41.5 | 5.3 | ..... | ESE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.59 | 700.8 | 29.91 | 759.7 | 81.0 | 27.2 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.73 | 755.1 | 29.96 | 761.0 | 88 | 31.1 | ..... | W | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.57 | 751.1 | 40 | 4.4 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.87 | 758.7 | 29.92 | 760.0 | 57.8 | 14.3 | ..... | W | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.68 | 753.9 | 29.89 | 759.2 | 36.4 | 2.4 | ..... | NE | ..... | ..... | 6 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy | D. G. Maclean. |
| Great Yarmouth | 29.74 | 755.4 | 29.74 | 755.4 | 34 | 1.1 | ..... | E | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.49 | 749.0 | 29.67 | 753.6 | 34.4 | 1.3 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | The Staff, for G. B. Airy. |
| Guernsey | 29.35 | 745.5 | 29.58 | 751.3 | 43.5 | 6.4 | ..... | ENE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F.R.S. |
| Helston | 29.47 | 748.5 | 29.59 | 751.6 | 43 | 6.1 | ..... | E | ..... | ..... | 6 | ..... | 10n | ..... | ..... | 0.15 | 3.8 | Overcast | M. P. Moyle. |
| Holyhead | 29.61 | 752.1 | 29.68 | 753.9 | 39 | 3.9 | ..... | E | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | John Tilston. |
| Jersey | 29.29 | 744.0 | 29.59 | 751.6 | 43.3 | 6.3 | ..... | SE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy | J. Fisher. |
| Kew, Observatory | 29.64 | 752.8 | 29.67 | 753.6 | 35.6 | 2.0 | ..... | ENE | 16 | 7.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty | The Meteorological Of. |
| Leicester, Museum | 29.46 | 748.3 | 29.72 | 754.9 | 34.0 | 1.1 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.74 | 755.4 | 29.81 | 757.2 | 66 | 18.9 | ..... | SE | ..... | ..... | 2 | ..... | 8k | ..... | ..... | ..... | ..... | Blue sky | Sergt. H. J. Beckett, A. H. C. |
| Naira | 29.92 | 760.0 | 30.01 | 762.2 | 37 | 2.8 | ..... | ESE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.10 | 764.5 | 74.5 | 23.6 | ..... | NE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.56 | 750.8 | 29.76 | 755.9 | 33.4 | 0.8 | ..... | NE | ..... | ..... | 5 | ..... | 10d | ENE | ..... | 0.040 | 1.02 | Snowing | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.16 | 740.7 | 29.70 | 754.4 | 33.8 | 1.0 | ..... | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.67 | 753.6 | 34 | 1.1 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | H. E. Bellamy. |
| Plymouth | 29.47 | 748.5 | 29.54 | 750.3 | 42.0 | 5.6 | ..... | E | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Merrifield. |
| Roche's Point | 29.46 | 748.3 | 29.51 | 749.5 | 42 | 5.6 | ..... | ESE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | W. Kennedy. |
| Saint Ann's Head | 29.41 | 747.0 | 29.57 | 751.1 | 42 | 5.6 | ..... | ESE | ..... | ..... | 6 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 30.12 | 765.0 | 37.1 | 2.8 | ..... | ESE | 27 | 12.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.93 | 760.2 | 48.0 | 8.9 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Blank | Blank | Gloomy | W. H. Lyne. |
| Sheffield | 29.51 | 749.5 | 29.80 | 756.9 | 32.5 | 0.3 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.05 | 1.3 | Snowing | W. F. Cooper. |
| Silloth Rectory | 29.77 | 756.1 | 29.80 | 756.9 | 37.2 | 2.8 | 80 | SE | ..... | ..... | 7 | ..... | 6 | ..... | ..... | 0.018 | 0.46 | D. clouds | Francis Redford, A. M |
| Stonyhurst Observatory | 29.38 | 746.2 | 29.78 | 756.4 | 33.1 | 0.6 | ..... | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. S. J. Perry. |
| Stratfield Turgiss | 29.44 | 747.8 | 29.66 | 753.4 | 38.3 | 3.5 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | C.H. Griffith, F. R.S. |
| Thurso | 30.01 | 762.2 | 30.08 | 764.0 | 38 | 3.3 | ..... | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Trotter. |
| Truro, Royal Institution | 29.44 | 747.8 | 29.53 | 750.0 | 44 | 6.7 | ..... | E | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | W. Newcombe. |
| Valencia, Observatory | 29.44 | 747.8 | 29.47 | 748.5 | 42.8 | 6.0 | ..... | E | 37 | 16.5 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | D. clouds | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.00 | 762.0 | 30.03 | 762.8 | 72.2 | 22.3 | 56 | SE | 28 | 12.5 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Fine | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.22 | 767.6 | 51.0 | 10.5 | 88 | S | ..... | ..... | 3 | ..... | 10kn | ..... | ..... | 0 | 0 | Covered | FrancisAbbott, F.R.A.S |
| Leith, Restalrig Park | ..... | ..... | 29.97 | 761.2 | 35.0 | 1.7 | ..... | E | ..... | ..... | 4 | ..... | 10k | S | ..... | 0.09 | 2.3 | Cloudy | Andrew Gibb. |
| Mauritius, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Meldrum. |
| Melbourne, Observatory | 30.17 | 766.3 | 30.26 | 768.6 | 57.8 | 14.3 | 80 | SE | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Dull | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 29.93 | 760.2 | 36 | 2.2 | ..... | SE | ..... | ..... | 6 | 10 | 0 | SE | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.20 | 767.1 | 38 | 3.3 | ..... | SE | ..... | ..... | 4 | 6 | 3 | E | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer; for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

| British Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 59′, E. 27° 46′ | ..... | ..... | 29.94‡ | 760.5‡ | 50.2 | 10.1 | ESE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| S. S. Amanda, Cape Bon, Tunis | ..... | ..... | 29.61‡ | 752.1‡ | 64.2 | 17.9 | SE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | Misty | Capt. B. Boyes. |
| Barque Belle-Isle, N. 37° 49′, W. 48° 13′ | ..... | ..... | 30.30‡ | 769.6‡ | 66 | 18.9 | S | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 5 | SW | D. clouds | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra, N. 35° 23′ W. 43° 10′ | ..... | ..... | 30.46‡ | 773.7‡ | 67.5 | 19.7 | SE | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | NE | D. clouds | Capt. Thos. Young. |
| Barque Commewyne, N. 44° 10′, W. 29° 00′ | ..... | ..... | 30.15‡ | 765.8‡ | 54.3 | 12.4 | N | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Capt. A. Buchan. |
| Barque Fedalina, N. 28° 00′, W. 28° 40′ | ..... | ..... | 30.30 | 769.6 | 65 | 18.3 | E | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 3 | Confused. | Squally | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam, N. 5° 53′, E. 94° 18′ | ..... | ..... | 29.92‡ | 760.0‡ | 82 | 27.8 | ENE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrumental error and temperature. Inches. | BAROMETER. Corrected for instrumental error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | | | | | | | | | | | | | | | | | | | Mr. Ansart. |
| San José | 26.27 | 667.2 | 29.99 | 761.7 | 66.2 | 19.0 | 85 | SE | | | 2 | | 9cs;d | | E | 0 | 0 | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,146 meters, or 3,756.6 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.00 | 762.0 | 30.05 | 763.2 | 33.4 | 0.8 | 83 | SE | | | 4 | | 9 | | | | | | Rain & hail. |
| Fanöe | 30.00 | 762.0 | 30.02 | 762.5 | 32.4 | 0.2 | 76 | E | | | 6 | | 9 | | | | | | |
| Godthaab, (Greenland) | 29.64 | 752.9 | 29.69 | 754.0 | 12.9 | —10.6 | 76 | ENE | | | 4 | | 0 | | | | | | |
| Stykkisholm, (Iceland) | | | | | | | | | | | | | | | | | | | |
| Thorshavn, (Faröe) | 30.15 | 765.8 | 30.19 | 766.7 | 42.4 | 5.8 | 76 | SSE | | | 4 | | 5 | | | | | | |
| Vestervig | 29.90 | 759.4 | 30.07 | 763.7 | 30.2 | — 1.0 | 76 | NE | | | 6 | | 8 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower cloud-; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.12 | 739.6 | 29.67 | 753.6 | 42.1 | 5.6 | 81 | SE | | | 1 | 8 | | SW | | 0 | 0 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 29.52 | 749.8 | 29.63 | 752.7 | 40.8 | 4.6 | 87 | NE | | | 1 | 10 | | | | 0 | 0 | Covered | Bouvallet, Director. |
| Avignon, Normal School | 29.58 | 751.3 | 29.66 | 753.3 | 59.7 | 15.4 | 64 | SW | | | 1 | kn | | SSW | | 0 | 0 | | M. Giraud, Director. |
| Bar-sur-Seine | 29.11 | 739.4 | 29.67 | 753.7 | 46.9 | 8.3 | 68 | SW | | | 1 | 8kn | | SW | | 0.118 | 3.0 | Very cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.39 | 746.5 | 29.68 | 753.9 | 47.3 | 8.5 | 69 | WSW | | | 1 | 6 | | SW | | 0.030 | 0.75 | Cloudy | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 28.82 | 732.0 | 29.69 | 754.1 | 55.4 | 13 | 60 | SW | | | 2 | 2 | | SW | | 0.122 | 3.1 | Slightly cl'dy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.84 | 732.5 | 29.74 | 755.5 | 53.6 | 12 | 54 | W | | | 3 | 8k | SW | S | | 0.12 | 3. | Very cloudy | M. Marlot, Director. |
| Bourges, Normal School | 29.12 | 739.5 | 29.67 | 753.6 | 48.2 | 9 | 73 | SSW | | | 2 | 5 | SSW | SSW | | 0.142 | 3.6 | Cloudy | A. Waquet, Director. |
| Brest, Naval Observatory | 29.16 | 740.7 | 29.40 | 746.8 | 47.8 | 8.8 | 70 | SSE | | | 6 | 10 | | SSE | | 0.010 | 0.25 | Raining | M. de Rermaree, Director |
| Carcassonne, Normal School | 29.25 | 743.0 | 29.67 | 753.5 | 56.5 | 13.6 | 57 | NW | | | 1 | 2 | SE | S | | 0 | 0 | Slightly cl'dy | September, Director. |
| Caen, Normal School | 29.53 | 750.0 | 29.60 | 751.9 | 47.8 | 8.8 | 63 | SSW | | | 2 | 8 | | SSW | | 0 | 0 | Very cloudy | M. Lair, Director. |
| Chartres, Normal School | 29.05 | 737.9 | 29.63 | 752.5 | 45.5 | 7.5 | 94 | W | | | 1 | 10 | | SE | | 0.020 | 0.5 | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.30 | 746.5 | 29.67 | 753.7 | 50.0 | 15.0 | 71 | NW | | | 1 | 8 | NNW | NNW | | | | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.26 | 717.9 | 29.60 | 751.9 | 54.0 | 12.2 | 40 | W | | | 1 | 8 | | | | 0 | 0 | | Alluard, Director. |
| Commercy, Normal School | 28.84 | 732.4 | 29.70 | 754.4 | 42.6 | 5.9 | 73 | W | | | 1 | 8kn | | W | | 0 | 0 | Very cloudy | Dr. Coulet, Director. |
| Commune de Gréasque* | 28.54 | 725.0 | 29.69 | 754.0 | 54.9 | 12.7 | 57 | S | | | 1 | 8 | | S | | 0 | 0 | ¾ covered | M. Kina, Director. |
| Grenoble, Normal School | 28.96 | 735.5 | 29.64 | 752.9 | 52.5 | 11.4 | 71 | W | | | 1 | 8n | | | | 0.012 | 0.30 | Very cloudy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.39 | 746.6 | 29.61 | 752.1 | 52.5 | 11.4 | 78 | SE | | | 3 | 10 | | | | 0 | 0 | Covered | Mouillot, Director |
| Le Mans, Normal School | 29.34 | 745.3 | 29.65 | 753.2 | 47.7 | 8.7 | 61 | SSE | | | 1 | 5 | | SSE | | 0 | 0 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.74 | 730.0 | 29.67 | 753.5 | 52.7 | 11.5 | 69 | W | | | 2 | 5 | | W | | 0.134 | 3.40 | Cloudy | Baudry, Director. |
| Lorient, Naval Observatory | 29.40 | 746.7 | 29.80 | 749.2 | 49.6 | 9.8 | 79 | SSE | | | 5 | | SW | S | | 0.059 | 1.5 | | Lt T. Carré, Director. |
| Mâcon, Normal School | | | | | | | | | | | | | | | | | | | M. Galzin, Director |
| Mirecourt, Normal School | 28.65 | 727.7 | 29.74 | 755 3 | 45.7 | 7.6 | 69 | NE | | | 3 | | kn | | SW | 0 | 0 | | M. Barbier, Director. |
| Nîmes, Normal School | 29.48 | 747.5 | 29.63 | 752.5 | 66.6 | 19.2 | 47 | N | | | 6 | | 5 | | W | 0 | 0 | Cloudy | Boyer, Director. |
| Privas, Normal School | 28.65 | 727.6 | 29.71 | 754.6 | 51.8 | 11 | 75 | S | | | 1 | | n | S | S | 0.51 | 13. | | M. Cantier, Director. |
| Puy de Dome (Summit) Obs. | 24.76 | 629.0 | | | 23.9 | — 1.5 | 100 | SW | | | 3 | | 10 | SW | | 0.098 | 2.5 | Covered | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.59 | 751.6 | 29.62 | 752.4 | 55.8 | 13.2 | 55 | SSW | | | 1 | | 2 | WSW | WSW | 0.04 | 1. | ¾ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.51 | 749.5 | 29.60 | 751.7 | 45.1 | 7.3 | 54 | NE | | | 1 | | 5 | | N | 0 | 0 | Cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.51 | 749.6 | 29.54 | 750.4 | 46.8 | 8.2 | 71 | S | | | 3 | | 8 | S | S | 0 | 0 | Very cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.51 | 749.5 | 29.67 | 753.7 | 44.6 | 7.0 | 70 | S | | | 1 | | | | SW | 0 | 0 | | E. Renou, Director. |
| Tarbes, Normal School | 28.52 | 724.4 | 29.42 | 747.2 | 61.7 | 16.5 | 66 | W | | | 2 | | 0 | | | 0 | 0 | Clear | T. Huguet, Director. |
| Versailles Observatory | 29.10 | 740.6 | 29.65 | 753.1 | 42.4 | 5.8 | 68 | SW | | | 1 | | | | | 0 | 0 | Slightly cov | Dr. A. Bérnuy, Director |
| Villefranche-sur-Saone, N.S. | 29.02 | 737.2 | 29.74 | 755.3 | 53.6 | 12 | 81 | ESE | | | 1 | | 2 | | SW | 0 | 0 | Slightly cl'dy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.81 | 757.1 | 29.84 | 757.8 | 77.4 | 25.2 | | | | | | | | | | 0.08 | 2. | | L'Abbé Marel 6si. |
| Lyons Obs'y, (Park Station) | 29.05 | 737.9 | 29.66 | 753.3 | 54.3 | 12.4 | 46 | ENE | | | 1 | | 5 | | W | 0.689 | 1.75 | Cloudy | Mr. Jays. |
| Marseilles, Observatory | | | | | | | | | | | | | | | | | | | The Staff. |
| Mont-Louis | 24.47 | 621.5 | 29.78 | 756.5 | 41.0 | 5.0 | 70 | SW | 18.0 | 8.8 | | | 6 | | NW | 0.217 | 5.5 | | M. Cave. |
| Nice | | | 29.70 | 754.3 | 61.2 | 16.2 | 71 | NW | | | 1 | | 10 | | | 0 | 0 | Covered | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.38 | 746.3 | | | 45.3 | 7.4 | 60 | SSW | | | 1 | | 10 | | SSW | 0.012 | 0.3 | | Marié Davy, Director. |
| Perpignan | 29.58 | 751.3 | 29.69 | 754.0 | 55.8 | 13.2 | 62 | S | 9.4 | 4.2 | | | 6 | | W | 0.017 | 1.8 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.98 | 560.7 | | | 28.8 | — 1.8 | | SW | | | 3 | | 5 | | | 0.181 | 4.6 | Snowy | Gen'l de Nansouty. |
| Toulouse, Observatory | 28.97 | 735.9 | 29.69 | 754.1 | 58.6 | 12.0 | 69 | SE | | | 1 | | 3 | | | 0 | 0 | | M. Mercadier Juller. |
| Tours | 29.44 | 747.8 | 29.64 | 752.8 | 47.6 | 8.6 | 52 | ESE | | | 1 | | 2 | | SSW | 0.063 | 1.6 | | Cousin-Marquete. |
| Zi-Ka-Wei, (near Shanghai) | 30.15 | 765.9 | 30.18 | 766.6 | 53.6 | 12.0 | 65 | ESE | 8.3 | 3.7 | | | 0 | | | 0 | 0 | Clear | Marc Dechevrens. |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,686.40 m., or 5,294.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-12. | Clouds. Amount. Up'r 0-10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.97 | 735.9 | 29.81 | 757.2 | 35.1 | 1.7 | 93 | E | | | 4 | | 9 | E | | | | Snowing. | Prof. Dr Hoh. |
| Berlin | 29.80 | 756.9 | 29.98 | 761.5 | 35.2 | 1.6 | 55 | SE | | | 1 | | 5 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.46 | 748.2 | 29.99 | 761.7 | 32.7 | 0.4 | 29 | ESE | | | 3 | | 3 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.28 | 743.8 | 29.72 | 754.8 | 43.2 | 6.2 | 73 | E | | | 1 | | 10 | SW | | 0 | 0 | | Albert Senx. |
| Cassel | 29.22 | 742.2 | 29.82 | 757.5 | 34.3 | 1.3 | 57 | E | | | 4 | | 9 | E | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.67 | 751.0 | 29.73 | 755.1 | 36.1 | 2.3 | 65 | SE | | | 4 | | 10 | | | | | Snowing. | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.43 | 747.4 | 29.80 | 756.8 | 34.3 | 1.3 | | ESE | | | 1 | | 10 | | | 0.043 | 1.1 | | Physical Society. |
| Friedrichshafen | 28.26 | 717.8 | 29.70 | 754.4 | 46.4 | 8.0 | 74 | SSW | | | 4 | | 6 | SW | | 0.008 | 0.2 | | M. Wilhelm. |
| Hamburg | 29.88 | 758.9 | 29.95 | 760.8 | 34.2 | 1.2 | 80 | E | | | 3 | | 10ks | | | | | Snowy. | Captain F. Hegemann. |
| Kiel | 29.98 | 761.4 | 29.99 | 761.8 | 34.7 | 1.5 | 70 | ENE | | | 2 | | 5 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.04 | 762.9 | 30.12 | 765.1 | 30.2 | — 1.0 | 69 | NE | | | 3 | | 6 | | | 0 | 0 | | Prof. E Luther. |
| Köslin | | | 30.02 | 762.6 | 31.5 | — 0.4 | | SE | | | 4 | | 3 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.47 | 748.6 | 29.91 | 759.7 | 35.2 | 1.8 | 60 | E | | | 4 | | 7 | ESE;SSW | | 0 | 0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 30.08 | 764.0 | 30.13 | 765.2 | 32.0 | 0.0 | 88 | ESE | | | 4 | | 5ks | | | | | | Skalweit. |
| Neufahrwasser | 30.10 | 764.6 | 30.12 | 765.0 | 32.0 | 0.0 | 60 | ENE | | | 3 | | 9 | | | 0.008 | 0.2 | | A. Lothes. |
| Posen | 29.75 | 755.6 | 30.05 | 763.3 | 33.8 | 1.0 | 42 | E | | | 3 | | 5 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.19 | 741.4 | 29.75 | 755.7 | 39.9 | 4.4 | 85 | N | | | 1 | | 10 | W | | 0.013 | 0.32 | Raining | Imp. University Observatory. |
| Stuttgart | 28.77 | 730.7 | 29.72 | 754.9 | 43.5 | 6.4 | 72 | SW | | | 1 | | 10 | | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.16 | 740.7 | 29.68 | 753.8 | 40.8 | 4.9 | 77 | NE | | | 1 | | 10 | | | 0.072 | 1.83 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.24 | 717.4 | 29.80 | 756.9 | 33.6 | 0.9 | 85 | SSW | 2 | 1 | | | 10 | | | 0.079 | 2.0 | | Dr. Van Bebber. |
| Wustrow, Naval School | 29.99 | 761.7 | 30.01 | 762.3 | 33.1 | 0.6 | 68 | E | | | 2 | | 8k | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series, | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.54 | 750.4 | 29.93 | 760.1 | 70.0 | 21.1 | | SW | | | 1.0 | | | | | | | Clear. | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.90 | 759.3 | 29.95 | 760.6 | 78.1 | 25.6 | 53 | WSW | 18 | 8.0 | | | 0 | | | 0 | 0 | Blue sky. | |
| Dessa | 29.44 | 747.7 | 29.91 | 759.6 | 89.1 | 31.7 | 14 | WNW | 10 | 4.5 | | | 0 | | | 0 | 0 | Blue sky. | |
| Bombay | 29.85 | 758.3 | 29.89 | 759.2 | 82.6 | 28.1 | 65 | NW | 15 | 6.7 | | | 0 | | | 0.03 | 0.8 | Blue sky. | |
| Lahore | 29.12 | 739.7 | 29.86 | 758.5 | 83.0 | 28.3 | 27 | NW | 6 | 2.7 | | | 4 | | | 0 | 0 | | |
| Belgaum | 27.37 | 695.1 | 29.85 | 758.1 | 85.1 | 29.5 | 60 | SE | 11.0 | 4.9 | | | 2 | | | 0 | 0 | | |
| Roorkee | 28.99 | 736.4 | 29.88 | 759.0 | 84.8 | 29.3 | 26 | SE | 4.3 | 1.9 | | | 8 | | | 0 | 0 | Gloomy | |
| Agra | 29.34 | 745.3 | 29.90 | 759.5 | 85.7 | 29.8 | 25 | W | | | | | 6 | | W | 0 | 0 | | |
| Nagpur | 28.84 | 732.5 | | | | | | N | 2.5 | 1.1 | | | 0 | | | 0 | 0 | Blue sky. | |
| Lucknow | 29.55 | 750.5 | 29.92 | 760.0 | 84.3 | 29.1 | 40 | NNW | 4.0 | 1.8 | | | 0 | | | 0 | 0 | Blue sky. | |
| Allahabad | 29.59 | 751.6 | 29.90 | 759.3 | 93.2 | 34.0 | 25 | N | 3.1 | 1.4 | | | 0 | | | 0 | 0 | Blue sky. | |
| Patna | 29.66 | 753.2 | 29.83 | 757.8 | 90.1 | 32.3 | 39 | Calm | 0.9 | 0.4 | | | 0 | | | 0 | 0 | Blue sky. | |
| Hazaribagh | 27.89 | 708.3 | 29.87 | 758.6 | 87.8 | 31.0 | 17 | NW | 6.0 | 2.7 | | | 0 | | | 0 | 0 | Blue sky. | |
| Cuttack | 29.78 | 756.3 | 29.86 | 758.3 | 86.9 | 30.5 | 53 | S | 3.5 | 1.6 | | | 0 | | | 0 | 0 | Blue sky. | |
| Calcutta (Allipore) | 29.84 | 758.0 | 29.87 | 758.6 | 85.4 | 29.7 | 70 | SSW | 8.0 | 3.6 | | | 0 | | | 0 | 0 | Blue sky. | |
| Goalpara | 29.45 | 748.0 | 29.88 | 757.5 | 86.0 | 30.0 | 45 | Calm | 2.3 | 1.0 | | | 9 | | W | 0 | 0 | D. clouds. | |
| Chittagong | 29.78 | 756.5 | 29.88 | 758.8 | 80.9 | 27.2 | 81 | WSW | 4.5 | 2.0 | | | 0 | | | 0 | 0 | Misty. | |
| Sibsagar | 29.67 | 751.0 | 29.91 | 759.6 | 74.1 | 23.4 | 71 | SE | 0.8 | 0.4 | | | 0 | | | 0 | 0 | Blue sky. | |
| Jubbulpore | 28.48 | 723.4 | 29.81 | 757.2 | 94.2 | 34.6 | 16 | Calm | 3.8 | 1.7 | | | 8 | E | | 0 | 0 | D. clouds. | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.5 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.39 | 746.6 | 29.81 | 757.1 | 43.7 | 6.5 | 82 | E | 1.8 | 0.8 | ..... | ..... | 10 | ..... | ..... | 0.161 | 4.1 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.20 | 741.8 | 29.72 | 755.0 | 49.8 | 9.9 | 84 | ESE | ..... | ..... | 4 | ..... | 10 | SE | ..... | 0.106 | 2.7 | ..... | Prof. Schiaparelli. |
| Padua | 29.09 | 754.0 | 29.80 | 756.8 | 46.4 | 8.0 | 80 | NNE | 11.2 | 5.0 | ..... | ..... | 10 | ENE | ..... | 0.091 | 2.3 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.80 | 731.6 | 29.71 | 754.6 | 49.3 | 9.6 | 88 | E | 1.8 | 0.8 | ..... | ..... | 10 | NE | ..... | 0.055 | 1.4 | ..... | Prof. P. F. Denza. |
| Genoa | 29.52 | 749.9 | 29.72 | 754.8 | 51.8 | 11.0 | 71 | N | 1.8 | 0.8 | ..... | ..... | 10 | SE | ..... | 0.657 | 16.7 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.79 | 705.8 | 29.70 | 754.3 | 49.3 | 9.6 | 69 | W | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.012 | 0.3 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.70 | 754.4 | 29.75 | 755.7 | 55.2 | 12.9 | 83 | E | 8.1 | 3.6 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.50 | 749.4 | 29.76 | 755.9 | 52.7 | 11.5 | 87 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.091 | 2.3 | ..... | Cav. F. Meucci. |
| Leghorn | 29.63 | 752.5 | 29.71 | 754.7 | 56.3 | 13.5 | 76 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 1.417 | 36.0 | ..... | Prof. P. Monte. |
| Rome | 29.56 | 750.8 | 29.73 | 755.2 | 61.0 | 16.1 | 55 | S | 16.8 | 7.5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.67 | 753.6 | 29.92 | 760.0 | 60.8 | 16.0 | 59 | SSW | 7.4 | 3.3 | ..... | ..... | 5 | S | ..... | ..... | ..... | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.97 | 735.9 | 29.85 | 758.3 | 59.5 | 15.3 | 77 | NE | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.35 | 745.4 | 29.54 | 750.3 | 63.7 | 17.6 | 70 | SE | ..... | ..... | 2 | ..... | 10 | S | ..... | 0 | 0 | ..... | Prof. A. Pachnotti. |
| Palermo | 29.45 | 747.9 | 29.70 | 754.3 | 72.1 | 22.3 | 24 | S | 32.2 | 14.4 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.80 | 756.9 | 29.87 | 758.7 | 61.9 | 16.6 | 71 | ESE | 7.4 | 3.3 | ..... | ..... | 5 | WSW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.29 | 743.9 | 29.84 | 758.0 | 61.7 | 16.5 | 57 | ESE | 1.8 | 0.6 | ..... | ..... | 2 | ..... | ..... | 0.272 | 6.9 | ..... | Prof. V. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.04 | 763.0 | 30.06 | 763.5 | 49.0 | 9.4 | 83 | NE | 1.4 | 0.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.93 | 760.2 | 30.14 | 765.5 | 46.7 | 8.2 | 89 | ENE | 0.6 | 0.3 | ..... | ..... | 0 | ..... | ..... | 0.010 | 0.025 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.82 | 757.4 | 29.89 | 759.2 | 47.6 | 8.6 | 84 | WNW | 4.4 | 2.0 | ..... | 0 | 0 | ..... | ..... | 0.195 | 4.95 | Clear | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.10 | 637.4 | 30.20 | 767.0 | 43.2 | 6.2 | 40 | Calm | ..... | ..... | 0 | ..... | 1 | ..... | ..... | 0 | 0 | Foggy | Prof. L. Perez. |
| Leon | 24.44 | 621.0 | 30.13 | 765.4 | 58.5 | 14.7 | 70 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.19 | 587.2 | 30.21 | 767.2 | 50.0 | 10.0 | 89 | N | 4.9 | 2.2 | ..... | 2c | 5k | W | ..... | Inap | Inap. | Foggy | The Staff. |
| Pabellon, (Aguascallentes) | ..... | ..... | ..... | ..... | 52.2 | 11.2 | 67 | WSW | ..... | ..... | 1 | 1cs | 0 | ..... | ..... | 0 | 0 | Fair | M. V. de Leon, M. E. |
| Tlacotalpam | 29.97 | 761.3 | 29.98 | 761.6 | 73.5 | 23.2 | 90 | ESE | ..... | ..... | 2 | 3 | 1 | SE | ESE | 0 | 0 | Misty | M. M. Chazaro. |
| San Luis Potosi | 24.17 | 615.1 | 30.19 | 766.8 | 49.0 | 9.4 | 92 | E | ..... | ..... | 1 | 3 | 0 | W | ..... | 0.071 | 1.8 | Partly cl'dy | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.45 | 595.5 | 30.21 | 767.3 | 49.3 | 9.6 | 85 | ENE | 0.04 | 0.02 | ..... | ..... | 8 | ..... | Calm | 0 | 0 | Almost cov'd | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.44 | 722.3 | 30.11 | 764.5 | 73.0 | 22.8 | 57 | E | ..... | ..... | 1 | 0 | 9 | ..... | NE | 0 | 0 | Covered | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,486 m., or 8,159.1 ft.; Puebla, Catholic Institute, 2,201m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 582 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.70 | 754.4 | 29.70 | 754.4 | 36.3 | 2.4 | ..... | E | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.020 | 0.5 | ..... | ..... |
| Groningen | 29.81 | 757.2 | 29.87 | 758 6 | 36.1 | 2.3 | ..... | E | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Helder | 29.78 | 756.4 | 29.78 | 756.4 | 35.1 | 1.7 | ..... | ENE | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.004 | 0.1 | ..... | ..... |
| Hellevoetsluis | 29.72 | 754.8 | 29.72 | 754.8 | 34.5 | 1.4 | 100 | E | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Utrecht | 29.72 | 754.9 | 29.77 | 756.1 | 32.4 | 0.2 | 84 | ESE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.016 | 0.4 | Dull | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.17 | 766.2 | 30.22 | 767.6 | 39.9 | 4.4 | 87 | E | 6.5 | 2.9 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 30.36 | 771.2 | 30.40 | 772.2 | 37.4 | 3.0 | 50 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 30.23 | 767.7 | 30.38 | 771.7 | 29.1 | — 1.6 | 48 | NE | 11 | 5 | ..... | ..... | 10 | ..... | ..... | 0.016 | 0.4 | ..... | |
| Tromsö | 30.35 | 770.9 | 30.39 | 772.0 | 30.2 | — 1.0 | 84 | W | 13 | 6 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.97 | 761.1 | 30.16 | 766.0 | 59.7 | 15.4 | 83 | WNW | 15.4 | 6.9 | ..... | ..... | 3 | ..... | ..... | 0.039 | 1.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.83 | 732.2 | 29.87 | 758.7 | 52.5 | 11.4 | 72 | W | 11.9 | 5.3 | ..... | ..... | 10 | W | ..... | 0.024 | 0.6 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.14 | 765.5 | 30.23 | 767.7 | 62.2 | 16.8 | 53 | SE | 3.1 | 1.4 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.49 | 749.1 | 29.85 | 758.3 | 55.6 | 13.1 | 83 | WSW | 28.6 | 12.8 | ..... | ..... | 10 | ..... | ..... | 0.004 | 0.1 | Raining | The Staff. |
| Ponta Delgada, (Azores) | 30.13 | 765.3 | 30.20 | 767.1 | 60.8 | 16.0 | 83 | WNW | 19.2 | 8.6 | ..... | ..... | 10 | ..... | ..... | 0.142 | 3.6 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | ..... | ..... | 29.92 | 760.0 | 85.1 | 29.5 | ..... | WSW | ..... | ..... | 3 | ..... | 3 | ..... | WSW | 2 | wsw | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto de S. Jose de Bissao, Senegambia | ..... | ..... | 29.95 | 760.8 | 84.6 | 29.2 | ..... | E | ..... | ..... | 1 | ..... | 1 | ..... | E | 0 | ..... | Blue sky | A. Ferreira, 2d Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | 29.78 | 756.5 | 87.8 | 31.0 | ..... | NNW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 30.02 | 762.5 | 70.7 | 21.5 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 1 | ..... | Raining | J. M T. Guimaraes, Com'd't. |
| Duque da Terceira, Santiago, Cape Verd I. | ..... | ..... | 30.26 | 768.5 | 80.6 | 27. | ..... | NE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 1 | ..... | Blue sky | C.C.da Fonseca Ferreira, Comd't |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.61 | 752.1 | 30.05 | 763.3 | 31.1 | — 0.5 | 63 | ESE | 7 | 3 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.70 | 754.3 | 30.14 | 765.5 | 30.4 | — 0.9 | 61 | Calm | 0 | 0 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | Heavy clouds | Astronomical Obs. |
| Dorpat | 30.02 | 762.5 | 30.28 | 769.0 | 28.6 | — 1.9 | 80 | SW | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light snow. | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.31 | 769.9 | 30.33 | 770.3 | 26.4 | — 3.1 | 80 | ENE | 11 | 5 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Sleeting | Central Physical Obs. |
| Kieff | 30.31 | 744.4 | 29.98 | 761.5 | 25.0 | — 3.9 | 84 | NNE | 4 | 2 | ..... | ..... | 10ks,n | ..... | ..... | ..... | ..... | Snowing | Physical Cabinet. |
| Nikolaiev | 29.85 | 758.1 | 29.92 | 759.9 | 33.1 | 0.6 | 96 | NNE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | Kurdakof. |
| Kertch | 29.74 | 755.5 | 29.76 | 756.0 | 51.8 | 11.0 | 76 | Calm | 0 | 0 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.60 | 751.8 | 30.19 | 766.7 | 25.2 | — 3.8 | 44 | S | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.59 | 751 6 | 29.80 | 756.9 | 44.8 | 7.1 | 66 | ENE | 13 | 6 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.27 | 768.9 | 30.29 | 769.4 | 26.6 | — 3.0 | 80 | NNW | 9 | 4 | ..... | ..... | 1cs | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.37 | 720.6 | 29.76 | 755.8 | 61.7 | 16.5 | 43 | WNW | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Heavy clouds | Physical Observatory. |
| Astrakhan | 29.93 | 760.2 | 29.85 | 758.1 | 56.3 | 13.5 | 43 | E | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.67 | 753.5 | 30.17 | 766.4 | 22.6 | — 5.2 | 63 | SSW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.85 | 758.2 | 30.14 | 765.5 | 22.1 | — 5.5 | 70 | S | 4 | 2 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Ekaterinburg | 29.10 | 739.1 | 30.11 | 764.8 | 26.6 | — 3.0 | 42 | W | 9 | 4 | ..... | ..... | 2c | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Nukuss | 29.64 | 752.8 | 29.87 | 758.6 | 69.4 | 20.8 | 29 | Calm | 0 | 0 | ..... | ..... | 8cs | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.47 | 723.0 | 30.15 | 765.8 | 62.1 | 16.7 | 58 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.61 | 752.2 | 30.15 | 765.8 | 18.1 | — 7.7 | 83 | WSW | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeniseisk | 29.51 | 749.6 | 29.82 | 757.4 | 23.9 | — 4.5 | 65 | W | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Irkutsk | 30.17 | 766.3 | 30.31 | 769.9 | 40.8 | 4.9 | 59 | S | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 30.00 | 762.0 | 30.10 | 764.5 | 27.9 | — 2.3 | 85 | N | 13 | 6 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | 29.95 | 760.7 | 30.04 | 762.9 | 5.7 | —14.6 | 60 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount— and generally the kind of cloudiness— without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 45° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.56 | 760.8 | 29.67 | 753.5 | 55.8 | 13.2 | 62 | SE | 4.5 | 2.00 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Directo r |
| Bilbao, Met. Obs'y | 29.55 | 760.5 | 29.59 | 751.5 | 64.6 | 18.1 | 49 | NW | 2.2 | 0.99 | ..... | 4 | 2 | SW | ..... | 0.008 | 0.2 | Raining | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.72 | 678.6 | ..... | ..... | 48.6 | 9.2 | 77 | SW | 2.6 | 1.17 | ..... | 0 | 5 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Oservatory | 27.50 | 698.4 | ..... | ..... | 54.5 | 12.5 | 58 | SW | 23.1 | 10.34 | ..... | 4 | 0 | N | ..... | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.68 | 751.2 | 29.72 | 755.0 | 70.2 | 21.2 | 50 | SW | 2.7 | 1.19 | ..... | 3 | 3 | NE | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.67 | 728.2 | 29.57 | 751.0 | 51.4 | 10.8 | 78 | SW | 9.8 | 4.4 | ..... | 0 | 10 | ..... | ..... | 0.228 | 5.8 | Rainy | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.04 | 763.1 | 30.11 | 764.7 | 73.1 | 22.8 | 89 | E | 1.3 | 0.6 | ..... | 0 | 2k | ..... | ..... | 0.209 | 5.3 | Fair | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.84 | 758.0 | 29 89 | 759.3 | 84.5 | 29.2 | 79 | E? | 0 | 0 | ..... | ..... | 4c | ..... | S | 0 | 0 | Covered | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.88 | 758.8 | 29.98 | 761.4 | 66.7 | 13.7 | 62 | WNW | 19.7 | 8.8 | ..... | 4 | 4 | NW | NW | 0.563 | 14.3 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I | 29.92 | 759 9 | 30.01 | 762.2 | 77.7 | 25.4 | 89 | S | 66.9 | 2.80 | ..... | 5ks | 3k | S | S | 0.236 | 6.00 | Cloudy | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.50 | 774.6 | 30.54 | 775.6 | 19.4 | — 7.0 | ..... | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.40 | 772.2 | 30.45 | 773.5 | 29.8 | — 1.2 | 65 | SW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.48 | 774.1 | 30.53 | 775.4 | 31.3 | — 0.4 | 59 | ENE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 30.17 | 766.3 | 30.35 | 770.8 | 26.6 | — 3.0 | 61 | NE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 30.11 | 764.8 | 30.17 | 766.3 | 31.3 | — 0.4 | 74 | E | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.004 | 0.1 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.29 | 769.0 | 30.35 | 770.9 | 29.8 | — 1.1 | 69 | NE | 13 | 6.0 | ..... | ..... | 9 | ..... | E | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.26 | 717.8 | 29.71 | 754.5 | 47.7 | 8.7 | 68 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.118 | 3.0 | Covered | The Observatory. |
| Zurich | 28.08 | 713.1 | 29.73 | 755.2 | 47.7 | 8.7 | 71 | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.031 | 0.8 | Cloudy | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —6.5 mm.; Thermometer,—0.4 Cent.; Relative Humidity, +9 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.97 | 761.3 | 45.7 | 7.6 | 78 | NE | 10 | 4.5 | ..... | ..... | 10 | ..... | N | 0 | 0 | | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.96 | 760.9 | 62.2 | 16.8 | ..... | SW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0.35 | 9. | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.83 | 757.7 | 29.94 | 760.6 | 70.9 | 21.6 | 63 | SW | ..... | ..... | 3 | ..... | 3ks | ..... | SW | 0 | 0 | D. clouds | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.08 | 764.0 | 30.15 | 765.8 | 25.7 | — 3.5 | 70 | Calm | 0 | 0 | ..... | 2ck | 0 | ..... | ..... | 0 | 0 | Fine | Hon. J. Ferguson. |
| Brockville, Ontario | 29.92 | 760.0 | 30.25 | 768.3 | 18 | — 7.8 | ..... | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. R. Bigg. |
| *Chatham, N. B | 30.05 | 763.3 | 30.12 | 765.0 | 30 | — 1.1 | 94 | N | 9 | 4.0 | ..... | ..... | 10n | ..... | N | 0 | 0 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 29.95 | 760.7 | 29.99 | 761.7 | 32 | 0.0 | 100 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Snowy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 30.00 | 762.0 | 30.21 | 767.3 | 9.3 | —12.6 | 98 | W | ..... | ..... | 1 | 0 | 1s | ..... | ..... | 0.05 | 1.3 | Fair | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 29.80 | 749.8 | 29.85 | 750.6 | 50.3 | 10.2 | 93 | Calm | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.52 | 13.2 | Overcast | W. H. Bovis. |
| *Father Point, Quebec | 30.21 | 767.3 | 30.24 | 768.1 | 17 | — 8.3 | 78 | N | 20 | 8.9 | ..... | 8k | 2s | N | N | 0 | 0 | Cloudy | J. McWilliams. |
| Fredericton, N. B | 30.06 | 763.5 | 30.12 | 765.0 | 33.9 | 1.1 | 90 | NE | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Light snow. | Prof. Harrison. |
| *Fort Garry, Manitoba | 28.92 | 734.6 | 29.80 | 756.9 | 18 | — 7.8 | 95 | W | 3 | 1.3 | ..... | Haze | Haze | W | W | 0 | 0 | Foggy | James Stewart. |
| Granton, Ontario | 28.88 | 733.5 | 30.04 | 763.0 | 28 | — 2.2 | ..... | E | ..... | ..... | 2 | 3cs | 0 | E | ..... | 0 | 0 | Fair | James Grant. |
| *Halifax, N. S | 29.80 | 756.9 | 29.93 | 760.2 | 34 | 1.1 | 93 | N | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0.020 | 0.51 | Light snow. | F. Allison, M. A. |
| Hamilton, Ontario | 29.76 | 755.9 | 30.15 | 765.8 | 20.5 | — 1.4 | 82 | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.87 | 758.7 | 30.22 | 767.6 | 25 | — 3.9 | 85 | NE | 4 | 1.8 | ..... | 8k | 2s | Calm | Calm | 0 | 0 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.89 | 759.2 | 29.93 | 760.2 | 31.5 | — 0.3 | 98 | S | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 30.03 | 762.8 | 30.24 | 768.1 | 20 | — 6.7 | 75 | NE | 6 | 2.7 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.39 | 746.5 | 30.13 | 765.3 | 22 | — 5.6 | 86 | E | 17 | 7.2 | ..... | 5k | 5ks | W | W | 0 | 0 | Cloudy | Rev. R. Mosley. |
| Peterboro, Ontario | 29.41 | 747.8 | 30.25 | 768.3 | 20.4 | — 6.4 | 75 | E | ..... | ..... | ..... | ..... | 9k | ..... | ..... | 0 | 0 | Cloudy | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.39 | 746.5 | 30.12 | 765.0 | 28 | — 2.2 | 88 | E | 5 | 2.2 | ..... | 2ck | 0 | W | ..... | 0 | 0 | Fair | H. Morgan. |
| Port Hastings, N. S | 29.96 | 761.0 | 30.02 | 762.5 | 28.9 | — 1.7 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.37 | 746.0 | 30.05 | 763.3 | 29 | — 1.7 | 76 | E | 20 | 8.9 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | M. Payne. |
| *Quebec, Quebec | 29.90 | 759.4 | 30.24 | 768.1 | 19 | — 7.2 | 69 | NE | ..... | ..... | 5 | 2c | 2s | NE | NE | 0.10 | 2.5 | Fair | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.75 | 755.6 | 30.27 | 768.8 | — 2 | —18.9 | 84 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. McIntyre. |
| St. Andrews, N. B | 30.01 | 762.2 | 30.06 | 763.5 | 35 | 1.7 | 84 | NE | 1 | 0.4 | ..... | ..... | 8ks | ..... | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| St. John, N. B | 29.87 | 758.7 | 30.04 | 763.0 | 34 | 1.1 | 79 | N | 11 | 4.9 | ..... | 0 | 8ks | ..... | ..... | 0 | 0 | Overcast | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.28 | 743.7 | 30.03 | 762.8 | 27 | — 2.8 | 85 | SE | 19 | 8.5 | ..... | ..... | 8ks | ..... | ..... | 0 | 0 | Cloudy | K. Stewart. |
| Stayner, Ontario | 29.26 | 743.2 | 30.09 | 764.3 | 22 | — 5.6 | 95 | SE | 8 | 3.6 | ..... | 10k | 0 | NW | ..... | 0 | 0 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.70 | 729.0 | 30.06 | 763.5 | 24.8 | — 4.0 | 88 | SE | 9.0 | 4.0 | ..... | 0 | 2s | ..... | ..... | 0 | 0 | Fair | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.92 | 760.0 | 29.96 | 761.0 | 32 | 0.0 | 93 | N | 4 | 1.8 | ..... | ..... | 10n | ..... | N | 0 | 0 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.75 | 755.6 | 30.15 | 765.8 | 26 | — 3.3 | 79 | E | 10 | 4.5 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | Magnetic Observatory |
| Windsor, N. S | 29.88 | 758.9 | 29.98 | 761.5 | 33.0 | 0.6 | 100 | ..... | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.08 | 2.0 | Snowing | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 30.0 | — 1.1 | 100 | NE | ..... | ..... | ..... | 5 | 5 | ..... | ..... | 0 | 0 | Overcast | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Cloud. Amount. Up'er 0—10. | Cloud. Amount. Low'r 0—10. | Cloud. Direction. Upper. From— | Cloud. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 30.00 | 762.0 | 30.25 | 768.3 | 27 | — 2.8 | 70 | N | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Alpena, Michigan | 29.28 | 743.7 | 29.95 | 760.7 | 30 | — 1.1 | 78 | SE | 17 | 7.6 | | | 8s | | SW | 0 | 0 | Cloudy | |
| Atlanta, Georgia | 28.91 | 734.3 | 30.06 | 763.5 | 53 | 11.7 | 54 | S | 10 | 4.5 | | 2k | 8s | SW | Calm | Inap. | Inap. | Cloudy | |
| Atlantic City, New Jersey | 30.24 | 768.1 | 30.26 | 768.6 | 30 | — 1.1 | 78 | N | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Augusta, Georgia | 29.95 | 760.7 | 30.14 | 765.5 | 47 | 8.3 | 77 | SW | 1 | 0.4 | | 10ck | Sm'e | SW | Calm | 0 | 0 | Cloudy | |
| Baltimore, Maryland | 30.22 | 767.6 | 30.27 | 768.8 | 36 | 2.2 | 71 | NE | 2 | 0.9 | | 2cs | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Barnegat, New Jersey | 30.21 | 767.3 | 30.23 | 767.8 | 31 | — 0.6 | 69 | N | 10 | 4.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Bismarck, Dakota | 28.00 | 711.2 | 29.86 | 758.4 | 34 | 1.1 | 90 | W | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Boerne, Texas | 28.52 | 724.4 | 29.89 | 759.9 | 68 | 20.0 | 95 | SW | 3 | 1.3 | | | 10ks | | S | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.13 | 689.1 | 30.09 | 764.3 | 67 | 13.9 | 58 | SE | 8 | 3.6 | | | 10s | | Calm | 0.01 | 0.3 | Cloudy | |
| Boston, Massachusetts | 30.00 | 762.0 | 30.16 | 766.1 | 31 | — 0.6 | 79 | NW | 12 | 5.4 | | | 10n | | Calm | Inap. | Inap. | Light snow | |
| Brackettville, Texas | 28.83 | 732.3 | 29.84 | 757.9 | 66 | 18.3 | 78 | SE | 7 | 3.1 | | | 10s | | SE | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 28.77 | 730.7 | 29.79 | 756.7 | 32 | 0.0 | 89 | W | 9 | 4.0 | | 0 | 0 | | | 0.02 | 0.5 | Clear | |
| Brownsville, Texas | 29.02 | 760.0 | 29.97 | 761.2 | 75 | 23.9 | 86 | SE | 4 | 1.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.36 | 745.7 | 30.10 | 764.5 | 27 | — 2.8 | 71 | E | 9 | 4.0 | | 1ck | 2s | NW | Calm | 0 | 0 | Fair | |
| Burkes, Arizona | | | | | 57 | 13.9 | 27 | Calm | | | 0 | 0 | 0 | | | 0 | 0 | Clear | |
| Burlington, Vermont | 29.94 | 760.5 | 30.25 | 768.3 | 23 | — 5.0 | 66 | N | 8 | 3.6 | | 2cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Cairo, Illinois | 29.47 | 748.5 | 29.86 | 758.4 | 53 | 11.7 | 93 | NE | 11 | 4.9 | | | 10s | | W | 0.05 | 1.3 | Cloudy | |
| Camp Apache, Arizona | | | | | | | | | | | | | | | | | | | |
| Camp Grant, Arizona | 25.21 | 640.3 | 30.01 | 762.2 | 55 | 12.8 | 33 | NE | 4 | 1.8 | | 2k | 0 | Calm | | 0 | 0 | Clear | |
| Camp Verde, Arizona | | | | | 46 | 7.8 | 40 | SW | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Campo, California | 27.44 | 697.0 | 30.01 | 762.2 | 41 | 5.0 | 65 | E | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.25 | 768.3 | 30.26 | 768.6 | 46 | 7.8 | 69 | NE | 10 | 4.5 | | Haze | Haze | | | 0 | 0 | Hazy | |
| Cape Henry, Virginia | 30.23 | 767.8 | 30.25 | 768.3 | 42 | 5.6 | 66 | E | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.20 | 767.1 | 30.22 | 767.6 | 53 | 11.7 | 67 | E | 13 | 5.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape May, New Jersey | 30.20 | 767.1 | 30.24 | 768.1 | 35 | 1.7 | 62 | N | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Castroville, Texas | 29.19 | 741.4 | 29.87 | 758.7 | 70 | 21.1 | 85 | S | 4 | 1.8 | | | 10s | | S | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 30.11 | 764.8 | 30.17 | 766.3 | 60 | 15.6 | 71 | SW | 1 | 0.4 | | 7ck | 0 | Calm | | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 24.12 | 612.6 | 30.06 | 763.5 | 44 | 6.7 | 52 | W | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Chicago, Illinois | 28.95 | 735.3 | 29.63 | 752.6 | 44 | 6.7 | 84 | S | 6 | 2.7 | | | 10n | | Calm | 0.14 | 3.6 | Light rain | |
| Cincinnati, Ohio | 29.22 | 742.2 | 29.87 | 758.7 | 46 | 7.8 | 77 | SE | 6 | 2.7 | | | 10n | | SW | 0.14 | 3.6 | Light rain | |
| Cleveland, Ohio | 29.24 | 742.7 | 29.98 | 761.5 | 35 | 1.7 | 80 | SE | 16 | 7.2 | | | 10s | | Calm | 0 | 0 | Threatening | |
| Coleman City, Texas | | | | | | | | | | | | | | | | | | | |
| Columbus, Ohio | 29.07 | 738.4 | 29.92 | 760.0 | 42 | 5.6 | 74 | SE | 8 | 3.6 | | | 10n | | E | 0.02 | 0.5 | Light rain | |
| Concho, Texas | 28.01 | 711.4 | 29.63 | 752.6 | 65 | 18.3 | 84 | SW | 8 | 3.6 | | 0 | 5s | | Calm | 0 | 0 | Fair | |
| Corsicana, Texas | 29.49 | 749.0 | 29.94 | 760.5 | 67 | 19.4 | 89 | S | 6 | 2.7 | | 0 | 8s | | S | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.02 | 737.1 | 29.64 | 752.8 | 45 | 7.2 | 92 | W | 4 | 1.8 | | | 10n | | W | 0.05 | 1.3 | Light rain | |
| Deadwood, Dakota | 25.31 | 642.9 | | | 47 | 8.3 | 77 | S | 2 | 0.9 | | 5c | 0 | W | | 0 | 0 | Fair | |
| Decatur, Texas | 28.75 | 730.2 | 29.88 | 758.9 | 65 | 18.3 | 80 | S | 8 | 3.6 | | 2c | 0 | S | | 0 | 0 | Clear | |
| Denison, Texas | 29.11 | 739.4 | 29.87 | 758.7 | 66 | 18.9 | 89 | S | 14 | 6.3 | | 5cs | 0 | SW | | 0.05 | 1.3 | Fair | |
| Denver, Colorado | 24.85 | 631.2 | 30.07 | 763.8 | 44 | 6.7 | 52 | SE | 4 | 1.8 | | 2ck | 0 | NW | | 0 | 0 | Fair | |
| Des Moines, Iowa | 28.89 | 733.8 | 29.76 | 755.9 | 43 | 6.1 | 75 | NW | 12 | 5.4 | | 0 | 0 | | | 0.04 | 1.0 | Clear | |
| Detroit, Michigan | 29.23 | 742.4 | 29.92 | 760.0 | 35 | 1.7 | 70 | SE | 13 | 5.8 | | | 10s | | E | 0 | 0 | Cloudy | |
| Dodge City, Kansas | 27.40 | 696.0 | 29.69 | 754.1 | 47 | 8.3 | 70 | N | 8 | 3.6 | | | 8s | | NW | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 28.95 | 735.3 | 29.64 | 752.8 | 45 | 7.2 | 84 | NW | 3 | 1.3 | | | 10s;fg | | Calm | 0.19 | 4.8 | Cloudy | |
| Duluth, Minnesota | 28.96 | 735.6 | 29.63 | 752.6 | 37 | 2.8 | 95 | NE | 5 | 2.2 | | | 10s | | Calm | 0.26 | 6.6 | Cloudy | |
| Eagle Pass, Texas | 29.15 | 740.4 | 29.87 | 758.7 | 68 | 20.0 | 90 | SE | 3 | 1.3 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.98 | 761.5 | 30.05 | 763.3 | 35 | 1.7 | 70 | N | 10 | 4.5 | | | 10s | | N | 0.01 | 0.3 | Cloudy | |
| Edinburg, Texas | | | | | 71 | 21.7 | 95 | SE | | | 4 | | 10s | | S | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.24 | 666.5 | | | 48 | 8.9 | 36 | NW | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.30 | 744.2 | 30.04 | 763.0 | 34 | 1.1 | 70 | SE | 15 | 6.7 | | 10ck | 0 | W | | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.00 | 736.1 | 29.72 | 754.9 | 34 | 1.1 | 90 | SE | 15 | 6.7 | | | 10n | | SE | 0.28 | 7.1 | Light snow | |
| Florence, Arizona | 28.46 | 722.9 | 30.06 | 763.5 | 62 | 16.7 | 36 | W | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.78 | 705.6 | | | 35 | 1.7 | 90 | SW | 2 | 0.9 | | 8ck | 0 | Calm | | 0 | 0 | Cloudy | |
| Fort Craig, New Mexico | 25.55 | 649.0 | 29.61 | 752.1 | 43 | 6.1 | 13 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.21 | 640.3 | 30.17 | 766.3 | 49 | 9.4 | 37 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.34 | 745.2 | 29.86 | 758.4 | 64 | 17.8 | 78 | W | 2 | 0.9 | | 5ck | 0 | W | | 0 | 0 | Fair | |
| Fort Griffin, Texas | 28.62 | 726.9 | 29.85 | 758.2 | 65 | 18.3 | 84 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.30 | 693.4 | | | 34 | 1.1 | 90 | Calm | 0 | 0 | | 5cs | 0 | Calm | | Inap. | Inap. | Fair | |
| Fort McKavett, Texas | 27.71 | 703.8 | 29.56 | 750.8 | 65 | 18.3 | 84 | S | 12 | 5.4 | | 0 | 10s | | S | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | | | | | | | | | | | | | | | | | | | |
| Fort Sill, Indian Territory | 28.67 | 728.2 | 29.76 | 755.9 | 58 | 14.4 | 82 | W | 6 | 2.7 | | 5c | 0 | W | | 0 | 0 | Fair | |
| Fort Stevenson, Dakota | 27.95 | 709.9 | | | 31 | — 0.6 | 79 | W | 3 | 1.3 | | 5ck | 0 | W | | 0 | 0 | Fair | |
| Fredericksburg, Texas | 28.22 | 716.8 | 29.73 | 755.1 | 70 | 21.1 | 75 | S | 4 | 1.8 | | | 10ks | | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 29.98 | 761.5 | 30.02 | 762.5 | 68 | 20.0 | 100 | S | 4 | 1.8 | | 0 | 5ks | | S | 0 | 0 | Fair | |
| Graham, Texas | 28.82 | 732.0 | 29.84 | 757.9 | 66 | 18.9 | 74 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.08 | 738.6 | 29.73 | 755.1 | 38 | 3.3 | 81 | E | 12 | 5.4 | | | 10n | | Calm | Inap. | Inap. | Light rain | |
| Indianapolis, Indiana | 28.93 | 734.8 | 29.70 | 754.4 | 45 | 7.2 | 84 | SE | 12 | 5.4 | | | 10s | | SE | 0.22 | 5.6 | Threatening | |
| Indianola, Texas | 29.97 | 761.2 | 30.00 | 762.0 | 70 | 21.1 | 95 | SE | 7 | 3.1 | | 1c | 5ks | SW | SE | 0 | 0 | Fair | |
| Jacksboro, Texas | 28.78 | 731.0 | 29.86 | 758.4 | 65 | 18.3 | 89 | SW | 6 | 2.7 | | 5c | 0 | S | | 0 | 0 | Fair | |
| Jacksonville, Florida | 30.15 | 765.8 | 30.18 | 766.6 | 59 | 15.3 | 87 | Calm | 0 | 0 | | 0 | Fog | | Calm | 0 | 0 | Foggy | |
| Keokuk, Iowa | 29.05 | 737.9 | 29.66 | 753.4 | 45 | 7.2 | 84 | W | 5 | 2.2 | | 0 | 1s | | W | 0.04 | 1.0 | Clear | |
| Key West, Florida | 30.09 | 764.3 | 30.12 | 765.0 | 75 | 23.9 | 72 | E | 9 | 4.0 | | 3c;k | 1ks | Calm;E | Calm | 0.02 | 0.5 | Fair | |
| Kittyhawk, North Carolina | 30.22 | 767.6 | 30.25 | 768.3 | 44 | 6.7 | 68 | E | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.07 | 738.4 | 30.09 | 764.3 | 44.5 | — 6.9 | 88 | SE | 3 | 1.3 | | | 10n | | Calm | 0.21 | 5.3 | Heavy rain | |
| La Crosse, Wisconsin | 28.87 | 733.3 | 29.59 | 751.6 | 46 | 7.8 | 77 | W | 2 | 0.9 | | | 10s | | Calm | 0.16 | 4.1 | Cloudy | |
| La Mesilla, New Mexico | 26.09 | 662.7 | 30.24 | 768.1 | 45 | 7.2 | 53 | Calm | 0 | 0 | | 5cs | 0 | Calm | | 0 | 0 | Fair | |
| Laredo, Texas | 29.50 | 749.3 | 29.83 | 757.7 | 73 | 22.8 | 81 | SE | 9 | 4.0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.04 | 737.6 | 29.87 | 758.7 | 51 | 10.6 | 59 | NW | 2 | 0.9 | | 1c | 0 | NW | | 0 | 0 | Clear | |
| Los Angeles, California | 29.68 | 753.6 | 29.97 | 761.2 | 54.0 | 12.2 | 83 | E | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.24 | 742.7 | 29.79 | 756.7 | 47 | 8.3 | 77 | SE | 11 | 4.9 | | | 10n | | SW | 0.37 | 9.4 | Light rain | |
| Lynchburg, Virginia | 29.50 | 749.3 | 30.20 | 767.1 | 43 | 6.1 | 58 | NE | 2 | 0.9 | | 0 | 5ks | | Calm | 0 | 0 | Fair | |
| Madison, Wisconsin | 28.62 | 726.9 | 29.59 | 751.8 | 41 | 5.0 | 91 | S | 2 | 0.9 | | | 10n | | Calm | 0.28 | 7.1 | Light rain | |
| Marquette, Michigan | 28.96 | 735.6 | 29.67 | 753.6 | 36 | 2.2 | 90 | SE | 12 | 5.4 | | | 10n | | Calm | 0.14 | 3.6 | Light snow | |
| Mason, Texas | 28.32 | 719.3 | 30.02 | 762.5 | 69 | 20.6 | 80 | SW | 13 | 5.8 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.59 | 751.6 | 29.90 | 759.4 | 61 | 16.1 | 61 | SW | 14 | 6.3 | | 0 | Sm'e | | Calm | 0.15 | 3.8 | Clear | |
| Milwaukee, Wisconsin | 28.89 | 733.8 | 29.61 | 752.1 | 42 | 5.6 | 83 | SE | 8 | 3.6 | | | 10n | | Calm | 0.12 | 3.0 | Light rain | |
| Mobile, Alabama | 30.08 | 764.0 | 30.12 | 765.0 | 57 | 13.9 | 100 | Calm | 0 | 0 | | | Fog | | | 0 | 0 | Foggy | |
| Montgomery, Alabama | 29.86 | 758.4 | 30.10 | 764.5 | 53 | 11.7 | 82 | S | 1 | 0.4 | | 8c | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Morgantown, West Virginia | 28.95 | 735.3 | 30.03 | 762.8 | 39 | 3.9 | 64 | Calm | 0 | 0 | | 0 | 2s | | Calm | 0 | 0 | Fair | |
| Mt. Washington, N. H. | 23.63 | 600.2 | 29.93 | 761.7 | 17 | — 8.3 | 67 | W | 2 | 0.9 | | 0 | 8ks | | W | 0 | 0 | Clear | |
| Nashville, Tennessee | 29.35 | 745.5 | 29.88 | 758.9 | 52 | 11.1 | 79 | SE | 1 | 0.4 | | | 10s | | Calm | 0.12 | 3.0 | Cloudy | |
| New Haven, Connecticut | 30.07 | 763.8 | 30.19 | 766.8 | 32 | 0.0 | 79 | N | 10 | 4.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| New London, Connecticut | 30.13 | 765.3 | 30.18 | 766.6 | 36 | 2.2 | 61 | N | 8 | 3.6 | | 1k | 0 | SE | | 0 | 0 | Clear | |
| New Orleans, Louisiana | 30.02 | 762.5 | 30.08 | 764.0 | 59 | 15.0 | 86 | SE | 1 | 0.4 | | 2cs | 0 | Calm | | 0 | 0 | Clear | |
| Newport, Rhode Island | 30.09 | 764.3 | 30.14 | 765.5 | 36 | 2.2 | 79 | NW | 6 | 2.7 | | | 10s | | Calm | 0.02 | 0.5 | Cloudy | |
| New York, New York | 30.06 | 763.5 | 30.25 | 768.3 | 32 | 0.0 | 60 | N | 4 | 1.8 | | 5ck | 1s | SE | Calm | 0 | 0 | Fair | |
| Norfolk, Virginia | 30.17 | 766.3 | 30.23 | 767.8 | 44 | 6.7 | 76 | SE | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.10 | 688.3 | 29.74 | 755.4 | 35 | 1.7 | 90 | NW | 8 | 3.6 | ..... | 2c | Sm'e | W | Calm | 0 | 0 | Fair | |
| Olympia, Washington Ter. | 29.61 | 752.1 | 29.65 | 753.1 | 54.1 | 12.3 | 93 | S | 5 | 2.2 | ..... | ..... | 10n | ..... | S | 1.87 | 47.5 | Light rain | |
| Omaha, Nebraska | 28 74 | 730.0 | 29.84 | 757.9 | 43 | 6.1 | 59 | W | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Oswego, New York | 29.90 | 759.4 | 30.28 | 767.8 | 33 | 0.6 | 70 | SW | 6 | 2.7 | ..... | 5c | 0 | NW | ..... | 0.01 | 0.3 | Fair | |
| Pembina, Dakota | 28.88 | 733.5 | 29.74 | 755.4 | 25 | — 3.9 | 100 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pa | 30.20 | 767.1 | 30.25 | 768.3 | 31 | — 0.6 | 69 | N | 9 | 4.0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Phœnix, Arizona | 28.76 | 730.5 | 30.53 | 775.4 | 62 | 16.7 | 41 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.89 | 454.4 | 30.10 | 764.5 | 23 | — 5.0 | 8 | N | 8 | 3.6 | ..... | 2cs | 0 | W | ..... | 0 | 0 | Clear | |
| Pioche, Nevada | 24.17 | 613.9 | 29.94 | 760.5 | 45 | 7.2 | 46 | NW | 2 | 0.9 | ..... | 0 | 2s | ..... | NW | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 29.24 | 742.7 | 30.08 | 764.0 | 33 | 0.6 | 79 | NE | 4 | 1.8 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Port Huron, Michigan | 29.26 | 743.2 | 29.95 | 760.7 | 31 | — 0.6 | 69 | SE | 8 | 3.6 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Portland, Maine | 30.08 | 764.0 | 30.13 | 765.3 | 36 | 2.2 | 80 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light snow | |
| Portland, Oregon | 29.69 | 754.1 | 29.79 | 756.7 | 55.0 | 12.8 | 93 | SE | 6 | 2.7 | ..... | ..... | 10n | ..... | S | 0.96 | 24.4 | Light rain | |
| Prescott, Arizona | 24.81 | 630.2 | 30.17 | 766.3 | 40 | 4.4 | 48 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.14 | 740.1 | 29.93 | 760.2 | 60 | 15.6 | 77 | SE | 15 | 6.7 | ..... | 2k | 0 | S | ..... | Inap | Inap. | Fair | |
| Punta Rassa, Florida | 30.15 | 765.8 | 30.17 | 766.3 | 64 | 17.8 | 78 | NE | 10 | 4.5 | ..... | 2c | Haze | W | Calm | 0 | 0 | Clear | |
| Red Bluff, California | 29.69 | 754.1 | 30.04 | 763.0 | 58 | 14.4 | 94 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Rio Grande City, Texas | 29.77 | 756.1 | 29.98 | 761.5 | 70 | 21.1 | 90 | SE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rochester, New York | 29.53 | 750.0 | 30.19 | 766.8 | 52 | 11.1 | 87 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | Inap. | Inap. | Cloudy | |
| Roseburg, Oregon | 29.32 | 744.7 | 29.87 | 758.7 | 57.0 | 13.9 | 81 | S | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.34 | 8.6 | Light rain | |
| Sacramento, California | 29.99 | 761.7 | 30.08 | 764.0 | 56.5 | 13.6 | 90 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.14 | 740.1 | 29.70 | 754.4 | 55 | 12.8 | 68 | W | 12 | 5.4 | ..... | 0 | 1s | ..... | Calm | 0.02 | 0.5 | Clear | |
| St. Marks, Florida | 30.14 | 765.5 | 30.16 | 766.1 | 61 | 16.0 | 93 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| St. Paul, Minnesota | 28.79 | 731.3 | 29.62 | 752.3 | 40 | 4.4 | 72 | W | 7 | 3.1 | ..... | 0 | 2s | ..... | W | 0.11 | 2.8 | Fair | |
| Salt Lake City, Utah | 25.76 | 654.3 | 30.09 | 764.3 | 47 | 8.3 | 48 | SE | 5 | 2.2 | ..... | 7c | 0 | W | ..... | 0 | 0 | Fair | |
| San Antonio, Texas | 29.27 | 743.4 | 29.84 | 757.9 | 73 | 22.8 | 76 | SE | 2 | 0.9 | ..... | 0 | 5ks | ..... | SE | Inap. | Inap | Fair | |
| San Diego, California | 29.94 | 760.5 | 30.01 | 762.2 | 55.5 | 13.1 | 100 | NW | 3 | 1.3 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Sandusky, Ohio | 29.24 | 742.7 | 29.92 | 760.0 | 38 | 3.3 | 72 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandy Hook, New Jersey | 30 19 | 766.8 | 30.22 | 767.6 | 31 | — 0.6 | 68 | NW | 9 | 4.0 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| San Francisco, California | 30.04 | 763.0 | 30.10 | 764.5 | 56.6 | 13.8 | 94 | W | 5 | 2.2 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Santa Fé, New Mexico | 23.34 | 592.8 | 29.88 | 758.9 | 45 | 7.2 | 46 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.08 | 764.0 | 30.18 | 766.6 | 54 | 12.2 | 93 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Shreveport, Louisiana | 29.76 | 755.9 | 29.96 | 761.5 | 64 | 17.8 | 89 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Silver City, New Mexico | 24.34 | 618.2 | 30.48 | 774.2 | 50 | 10.0 | 38 | NW | 1 | 0.4 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Smithville, North Carolina | 30.18 | 766.6 | 30.21 | 767.3 | 57 | 13.9 | 81 | SE | 12 | 5.4 | ..... | 2ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Springfield, Massachusetts | 30.06 | 763.5 | 30.20 | 767.1 | 33 | 0.6 | 70 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Stockton, Texas | 27.04 | 686.8 | 30.04 | 763.0 | 52 | 11.1 | 60 | SW | 9 | 4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass. | 30.08 | 764.0 | 30.14 | 765.5 | 33 | 0.6 | 89 | N | 18 | 8.0 | ..... | ..... | 10n | ..... | N | 0.03 | 0.8 | Light snow | |
| Toledo, Ohio, | 29.17 | 740.9 | 29.86 | 758.4 | 40 | 4.4 | 73 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Tucson, Arizona | 27.03 | 699.2 | 30.08 | 764.0 | 54 | 12.2 | 43 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.41 | 747.0 | 29.89 | 759.2 | 51.0 | 10.6 | 80 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 27 | — 2.8 | 77 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Uvalde, Texas | 29.09 | 738.9 | 29.88 | 758.9 | 70 | 21.1 | 80 | E | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.81 | 757.2 | 30.07 | 763.8 | 60 | 15.6 | 77 | S | 6 | 2.7 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Virginia City, Montana | 24.22 | 615.2 | 29.70 | 754.4 | 47 | 8.3 | 48 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Visalia, California | 29.70 | 754.4 | 30.07 | 763.8 | 54 | 12.2 | 91 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Washington, D. C. | 30.13 | 765.3 | 30.25 | 768.3 | 37 | 2.8 | 63 | S | 3 | 1.3 | ..... | 2ck | Fog | W | S | 0 | 0 | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 54 | 12.2 | 40 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.11 | 764.8 | 30.19 | 766.8 | 55 | 12.8 | 80 | E | 6 | 2.7 | ..... | 5ck | 0 | N | ..... | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.68 | 652.3 | 30.04 | 763.0 | 45 | 7.2 | 68 | SW | 3 | 1.3 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Wood's Holl, Mass. | 30.10 | 764.5 | 30.14 | 765.5 | 35 | 1.7 | 70 | N | 12 | 5.4 | ..... | ..... | 10ks | ..... | NW | 0.13 | 3.3 | Cloudy | |
| Yankton, Dakota | 28.61 | 726.7 | 29.92 | 760.0 | 39 | 3.9 | 64 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| Yuma, Arizona | 29.73 | 755.1 | 29.89 | 759.2 | 66 | 18.9 | 45 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **SUB-SERIES.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark. | 28.53 | 724.6 | 29.91 | 759.7 | 64 | 17.8 | 67 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I. | 30.06 | 763.5 | 30.11 | 764.8 | 76 | 24.4 | 81 | Calm | 0 | 0 | ..... | 0 | 2ks | ..... | Calm | 0.18 | 4.6 | Clearing | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A. | 25.25 | 641.3 | ..... | ..... | 65.2 | 18.4 | 85 | Calm | 0 | 0 | ..... | 4k | 4ks | ..... | ..... | 0.25 | 6.3 | ..... | Thomas Herran. |
| Navassa, W. I. | 29.93 | 760.2 | 30.01 | 762.2 | 79 | 26.1 | ..... | NE | 7.5 | 3.4 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.02 | 762.5 | 30.02 | 762.5 | 81 | 27.2 | 88 | E | ..... | ..... | 2 | 5k | 7ks | E | ..... | 0.110 | 2.8 | ½ Clouded | C. J. Hering. |
| Santiago de Cuba, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A. | 29.70 | 754.4 | 29.75 | 755.6 | 10.0 | —12.2 | 90 | E | 1 | 0.4 | ..... | 1c | 1s | SE | SE | 0 | 0 | ..... | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,036(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.8 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,100. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.556 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 6.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—12. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.07 | 763.8 | 59 | 15.0 | 57 | 13.9 | 94 | WSW | 7 | 3.1 | ..... | ..... | 5 | ..... | SW | 0 | 0 | ..... | ..... | Foggy ..... | |
| Navy Yard, Pensacola, Fla. | 30.25 | 768.3 | 63 | 17.2 | 63 | 17.2 | 89 | SE | 2 | 0.9 | ..... | ..... | 2 | ..... | NW | 0 | 0 | ..... | ..... | Fair..... | |
| Navy Yard, Portsmouth, N.H | 30.15 | 765.8 | 61 | 16.1 | 34 | 1.1 | 79 | W | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear. ..... | |
| Naval Hospital, Yokohama, Japan.....* | 29.94‡ | 760.5‡ | ..... | ..... | 50 | 10.0 | 82 | Calm | ..... | ..... | 0 | ..... | 1s;hz | ..... | ..... | 0.48 | 11.2 | ..... | ..... | Fair .... ..... | |
| Adams, Panama .....*. | 29.98 | 761.5 | 77 | 25.0 | 76 | 24.4 | 95 | WNW | ..... | ..... | 3 | ..... | 8 | ..... | N;W | ..... | ..... | ..... | ..... | Clear ..... | |
| Alaska, N. 48° 07′, W. 124° 56′..... | 29.54‡ | 750.3‡ | ..... | ..... | 50 | 10.0 | 86 | SE | ..... | ..... | 6 | ..... | 2 | ..... | NW | 0.65 | 16.5 | Mod'ate | ..... | Raining ..... | |
| Alliance, N. 43° 48′, E. 9° 22′..... | 29.71‡ | 754.6‡ | ..... | ..... | 53 | 11.7 | 80 | SE | ..... | ..... | 3 | ..... | 10 | ..... | S;E | ..... | ..... | Light | S | Rainy ..... | |
| Ashuelot, Hong-Kong, China. ...*† | 30.07‡ | 763.8‡ | ..... | ..... | 66 | 18.9 | 74 | ENE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Canonicus, New Orleans, La.....*. | 30.05‡ | 763.3‡ | 46 | 7.8 | 61 | 16.1 | 94 | E | ..... | ..... | 2 | ..... | 8 | ..... | [illegible] | ..... | ..... | ..... | ..... | Foggy ..... | |
| Colorado, New York, N. Y..... | 30.21 | 767.3 | 37 | 2.8 | 33.5 | 0.8 | 95 | NNE | 1 | 0.4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Constitution Lisbon, Portugal,..... | 29.85‡ | 758.2‡ | ..... | ..... | 58 | 14.4 | 94 | WSW | ..... | ..... | 6 | ..... | 10 | ..... | ENE | ..... | ..... | ..... | ..... | Rainy..... | |
| Despatch, Genoa, Italy..... | 29.68‡ | 753.9‡ | ..... | ..... | 52 | 11.1 | 93 | N | ..... | ..... | 2 | ..... | 10 | ..... | N | ..... | ..... | Smooth | ..... | Rainy ..... | |
| Franklin, Norfolk, Va..... .....*. | 30.34 | 770.6 | 65 | 18.3 | 44 | 6.7 | 76 | SSE | 3 | 1.3 | ..... | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Clear ..... | |
| Gettysburg, Genoa, Italy ..... | 29.74‡ | 755.4‡ | ..... | ..... | 52 | 11.1 | ?? | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rainy..... ... | |
| Hartford, Montevideo, Uruguay.*. | 29.91 | 759.7 | 72 | 22.2 | 72 | 22.2 | 59 | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.21 | 5.3 | Smooth | ..... | Fair ..... | |
| Lackawana, Callao, Peru.....*. | 29.76‡ | 755.9‡ | ..... | ..... | 67 | 19.4 | 95 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Misty..... | |
| Michigan, Erie, Pa.....†. | 30.01 | 762.2 | ..... | ..... | 35 | 1.7 | 80 | S | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monocacy, Shanghai, China.... ....*. | 30.16‡ | 766.6‡ | ..... | ..... | 56 | 13.3 | 51 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monongahela Yokohama, Japan .....*. | 29.88‡ | 758.9‡ | ..... | ..... | 53 | 11.7 | 79 | NNW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | Mod'ate | Mod'ate | .... ... | ..... | D. clouds.... | |
| New Hampshire, Port Royal, S. C.....*. | 30.20 | 767.1 | 64 | 17.8 | 62 | 16.7 | 77 | SE | 5 | 2.2 | ..... | ..... | 2 | ..... | S | 0 | 0 | ..... | ..... | Clear..... | |
| Onward, Callao, Peru.....†*. | 30.06 | 763.5 | ..... | ..... | 67 | 19.4 | 89 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Palos, Tientsin, China.....*. | 30.23 | 767.8 | 30 | — 1.1 | 30 | — 1.1 | 78 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 30 | — 1.1 | 78 | E | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Fair..... | |
| Pensacola, Valparaiso, Chili..... | 30.03‡ | 762.8‡ | ..... | ..... | 68 | 20.0 | 65 | E | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Plymouth, Bermuda..... | 30.07‡ | 763.8‡ | ..... | ..... | 64 | 17.8 | 94 | N | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Powhatan, N. 35° 48′, W. 75° 21′..... | 30.26‡ | 768.6‡ | ..... | ..... | 45 | 7.2 | 61 | NNE | ..... | ..... | 4 | ..... | 2 | ..... | NE | 0 | 0 | Long | NNE | Clear..... | |
| Quinnebaug, Malaga, Spain..... | 29.84‡ | 757.9‡ | ..... | .. ..... | 65 | 18.3 | 53 | SW | ..... | ..... | 3 | ..... | 5 | ..... | SW | ..... | ..... | ..... | ..... | Fair..... | |
| Ranger, Amoy, China..... .. | 30.12‡ | 765.0‡ | ..... | ..... | 65 | 18.3 | 73 | SE | ..... | ..... | 2 | ..... | 0 | ..... | .. ..... | ..... | ..... | Smooth | ..... | Clear. ..... | |
| Richmond, Aden, Arabia..... ..... | 29.97‡ | 761.2‡ | ..... | ..... | 85 | 29.4 | 76 | E | ..... | ..... | 2 | ..... | 2 | ..... | E | 0 | 0 | Smooth | ..... | Fair..... | |
| Rio Bravo, Brownsville, Texas..... | 30.00 | 762.0 | 72 | 22.2 | 72 | 22.2 | 100 | SE | ..... | ..... | 1 | ..... | 8 | ..... | S | ..... | ..... | ..... | ..... | Fair..... | |
| Santee, Annapolis, Md... ..... | 30.24‡ | 768.1‡ | ..... | ..... | 40 | 4.4 | 56 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Saratoga, Hampton Roads, Va..... | 30.24‡ | 768.1‡ | ..... | ..... | 45 | 7.2 | 81 | SE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds.... | |
| St. Louis, League Island, Pa ..... | 30.16 | 766.1 | 54 | 12.2 | 32 | 0.0 | ..... | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Supply, Brooklyn, N. Y..... | 30.20‡ | 767.1‡ | ..... | ..... | 39 | 3.9 | 64 | N | ..... | ..... | 3 | ..... | 5 | ..... | N | ..... | ..... | ..... | ..... | Fair..... | |
| Trenton Genoa, Italy.....*. | 29.71‡ | 754.6‡ | ..... | ..... | 54 | 12.2 | 87 | N | ..... | ..... | 3 | ..... | 10 | ..... | NE | 0 08 | 2.0 | Smooth | ..... | Showery..... | |
| Tuscarora, Chipequa Bay, Mexico. | 29.92‡ | 760.0 | ..... | ..... | 78 | 25.6 | 69 | NW | ..... | ..... | 2 | ..... | 8 | ..... | Calm | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Wabash, Boston, Mass..... | 30.20‡ | 767.1‡ | ..... | .. ..... | 34 | 1.1 | 79 | NW | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Snowing..... | |
| Wyoming, Alexandria, Egypt....*. | 30.05‡ | 763.3 | ..... | ..... | 65 | 18.3 | 94 | N | ..... | ..... | 1-2 | ..... | 2 | ..... | N | ..... | ..... | Smooth | ..... | Fair..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | Character. | Direction from— | | |
| PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Colima, N. 19° 25′, W. 105° 44′..† | | 30.03‡ | 762.8‡ | 70 | 21.1 | | E | | | 3 | | 1* | | WSW | 0 | Small | ENE | Misty | Capt. Whitebury |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Granada, Capt. Austin, N. 30° 50′, W. 118° 26′...†. | | 30.22‡ | 767.6‡ | 68 | 14.4 | | NW | | | 6 | | k | | SE | | Heavy | NW | Hazy. | Capt. A. Fuller. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |
| S. S. Zealandia, N. 17° 42′, W. 159° 08′... | | 30.03‡ | 762.8‡ | | | | ENE | | | 3 | | | | E;N | | Long; slow | E | Fair | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; and no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WHITE STAR LINE MARINE SERIES. Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, for the Britannic, amount of cloudiness by the scale 0 to 4.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES. Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, Capt. L. Meyer, Yokohama, Japan | | 29.94‡ | 760.5‡ | 61 | 16.1 | 94 | SW | | | 3 | | ks | | SW | | Smooth | SW | Raining | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 22° 17′, E. 114° 10′....† | | 30.12‡ | 765.0‡ | | | | N | | | 4 | | k | | SW | Blank | | | | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, N. 38° 19′, W. 144° 15′ | | 29.63‡ | 752.6‡ | 57 | 13.9 | 94 | WSW | | | 5–7 | | 10n | | W | | 5 | SW | Raining | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NORTH GERMAN LLOYD OF BREMEN MARINE SERIES. Furnished by the coöperation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 44° 44′, W. 34° 02′ | | 30.22‡ | 767.6‡ | | | | E | | | 2 | | | | NE | | Cross | N | Cloudy | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | RAIN-FALL OR MELTED SNOW IN THE LAST 24 HOURS. | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Lo'wr 0—10. | Upper. From— | Lower. From— | | CHARACTER. | DIRECTION FROM— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 46° 35', W. 40° 53'..... | ..... | 0.03‡ | 762.8‡ | 46 | 7.8 | ..... | WSW | ..... | ..... | 6 | ..... | 9 | ..... | W | ..... | Mod'ate | WSW | Cloudy. ..... | Captain Sargent. Wm. Shackford, Chief Officer. |
| S. S. Ohio..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. H. Dodge. |
| S. S. Pennsylvania, Capt. Harris ... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Randle. |
| S. S. Switzerland..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jackson. |
| S. S. Vaderland..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Nichols. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

**ALLAN LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Richardson. |
| S. S. Hibernian..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Off Succonnesset Shoal L.Ship, Mass | ..... | 0.01‡ | 762.2‡ | 41 | 5.0 | 75 | N | 12 | 5.4 | ..... | ..... | 8k | ..... | N | 0.12 in. or 3.0mm | ..... | ..... | Cloudy..... | Capt. James Jorgensen. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

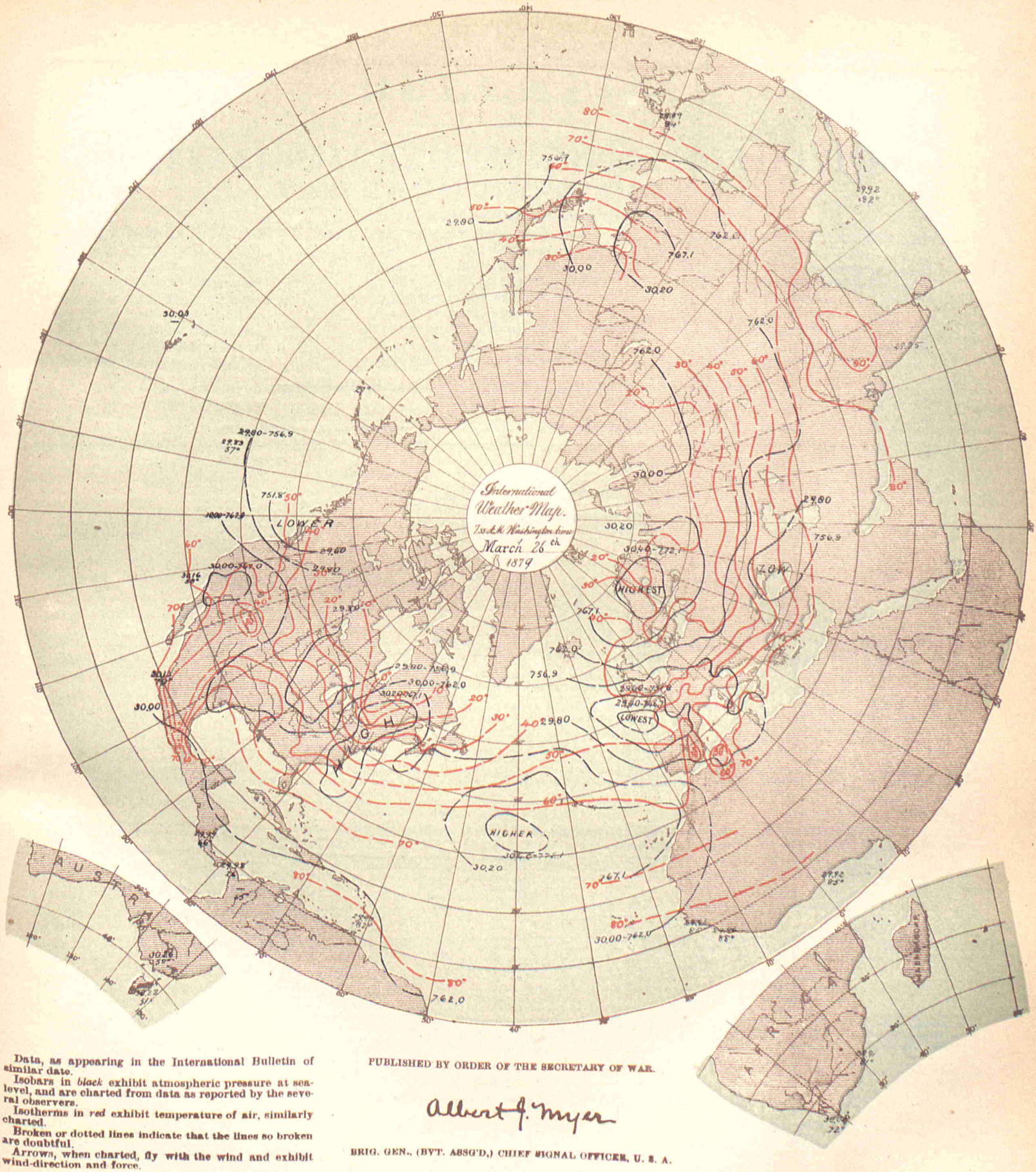
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 27, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
8:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:35 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time
1:26 P. M. CHRISTIANIA mean time.
1:38 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGEGIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 30.26 | 768.7 | 61.5 | 16.4 | 81 | SW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.079 | 2.0 | Very cloudy | |
| Nemours | ..... | ..... | 29.94 | 760.5 | 58.1 | 14.5 | 82 | WNW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.059 | 1.5 | Very cloudy | Kesxuche. |
| Algiers | ..... | ..... | 29.75 | 755.6 | 68.0 | 20.0 | 41 | W | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0.020 | 0.5 | Clear | Tourillere. |
| La Calle | ..... | ..... | 29.76 | 755.9 | 61.2 | 16.2 | 87 | NW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0.276 | 7.0 | Cloudy | Foufrede. |
| Tunis | ..... | ..... | 29.80 | 756.8 | 67.5 | 19.7 | 32 | NW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 29.80 | 757.0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 29.93 | 760.3 | 53.6 | 12.0 | 65 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.012 | 0.3 | Covered | Herbin. |
| Tebessa | ..... | ..... | 29.83 | 757.6 | 58.1 | 14.5 | 85 | NW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0.024 | 0.6 | Cloudy | Watrin. |
| Geriville | ..... | ..... | 29.88 | 759.0 | 43.7 | 6.5 | 97 | NW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Brugnlaux. |
| Laghouat | ..... | ..... | 29.94 | 760.4 | 60.1 | 15.6 | 42 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0.354 | 9.0 | Clear | Bertrand. |
| Biskra | ..... | ..... | 29.82 | 757.4 | 69.4 | 20.8 | 37 | NW | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0.079 | 2.0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.16 | 740.7 | 29.72 | 755.0 | 40.8 | 4.9 | 90 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.197 | 5.0 | Raining | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.13 | 740.0 | 29.93 | 760.2 | 36.6 | 2.0 | 96 | ENE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.036 | 0.9 | Snowy | Dr. Wierzbiski |
| Eperies | 28.98 | 736.0 | 29.89 | 759.1 | 36.3 | 2.4 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.51 | 724.1 | 29.79 | 756.6 | 39.2 | 4.0 | 78 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.343 | 8.7 | ..... | Andreas Rospini. |
| Hermannstadt | 28.43 | 722.0 | 29.85 | 758.3 | 51.1 | 10.6 | 70 | SE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. A. Gottschling. |
| Kremsmünster | 28.30 | 718.9 | 29.68 | 753.8 | 36.7 | 2.6 | 87 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner. |
| Lemberg | 28.98 | 736.2 | 30.02 | 762.5 | 30.6 | — 0.8 | 86 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Dr. T. Stanecki. |
| Pola | 29.50 | 749.3 | 29.61 | 752.1 | 54.7 | 12.6 | 90 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.673 | 17.1 | ..... | I. R. Hydrographic Office. |
| Szathmar | 29.40 | 746.8 | 29.87 | 758.7 | 50.4 | 10.2 | 62 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.031 | 0.8 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 29.53 | 750.1 | 29.63 | 752.7 | 46.8 | 8.2 | 78 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 3.511 | 89.2 | Rainy | P. Busin. |
| Vienna | 29.07 | 738.4 | 29.82 | 757.3 | 32.9 | 0.5 | 94 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.264 | 6.7 | Snowing | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. O. Houzeau, Director of the Royal Observatory at Brussels

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.008 | 0.20 | ..... | Prof. M. Passau. |
| Brussels | 29.35 | 745.4 | 29.55 | 750.5 | 46.0 | 7.8 | 72 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.013 | 0.3 | ..... | Royal Observatory |
| Furnes | 29.55 | 750.6 | 29.58 | 751.2 | 43.3 | 6.3 | 82 | E | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0.512 | 13.0 | Foggy | M. E. de Cae. |
| Maeseyck | 29.46 | 748.3 | 29.59 | 751.5 | 47.8 | 8.8 | 66 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | M. Pierrot |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum't'al error and temperature. Inches. | Barometer. Corrected for instrum't'al error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.85 | 758.2 | 29.96 | 761.0 | 32.6 | 0.3 | ..... | ESE | 28 | 12.5 | ..... | ..... | 9 | ..... | ..... | 0.040 | 1.02 | Overcast..... | W. Boswell. |
| Ardrossan | 29.76 | 755.9 | 29.78 | 756.4 | 39 | 3.9 | ..... | E | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.74 | 755.4 | 36.9 | 2.7 | ..... | NE | 14 | 6.3 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.66 | 753.4 | 36 | 2.2 | ..... | ENE | 20 | 8.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.67 | 753.6 | 33.2 | 0.7 | ..... | E | 24 | 10.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Thomas Mackereth. |
| Bradford, Yorkshire | 29.31 | 744.5 | 29.71 | 754.6 | 32.7 | 0.4 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0,11 | 2.8 | Overcast..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.98 | 761.5 | 30.01 | 762.2 | 80.0 | 26.7 | ..... | NE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy ..... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.62 | 752.3 | 39.0 | 3.9 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. Todd. [O. |
| Cardington | ..... | ..... | 29.59 | 751.6 | 39.0 | 3.9 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E. | 29.55 | 750.6 | 29.69 | 754.1 | 38.7 | 3.7 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling..... | Corpl. Daly, R. E. |
| Dartmoor | 27.98 | 710.7 | 29.48 | 748.8 | 34.0 | 1.1 | ..... | E | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Squally..... | Alexander Watt. |
| Donaghadee | 29.71 | 754.6 | 29.75 | 755.6 | 37 | 2.8 | ..... | ESE | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.51 | 749.5 | 29.58 | 750.0 | 40 | 4.4 | ..... | E | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Misty..... | J. Costello. |
| Falmouth, Observatory | 29.29 | 744.0 | 29.52 | 749.8 | 40.4 | 4.7 | ..... | NNE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.67 | 702.8 | 29.99 | 761.7 | 74.2 | 23.4 | ..... | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.66 | 753.4 | 29.90 | 759.4 | 87 | 30.6 | ..... | W ? | ..... | ..... | 0? | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | 29.64 | 752.8 | 41 | 5.0 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.84 | 757.9 | 29.90 | 759.4 | 68.4 | 14.7 | ..... | W | ..... | ..... | 4 | ..... | 6? | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.60 | 751.8 | 29.80 | 756.9 | 35.9 | 2.2 | ..... | E | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | D. G. Maclean. |
| Great Yarmouth | 29.64 | 752.8 | 29.64 | 752.8 | 35 | 1.7 | ..... | E | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.40 | 746.7 | 29.57 | 751.1 | 39.4 | 4.1 | ..... | ENE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | The Staff, for G. B. Airy. |
| Guernsey | 29.20 | 741.7 | 29.42 | 747.2 | 42.5 | 5.8 | ..... | NE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | 29.51 | 749.5 | 29.63 | 752.6 | 43 | 6.1 | ..... | NE | ..... | ..... | 4 | ..... | 10n | ..... | ..... | 0.30 | 7.6 | Raining..... | M. P. Moyle. |
| Holyhead | 29.58 | 751.3 | 29.66 | 753.4 | 38 | 3.3 | ..... | E | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Tilston. |
| Jersey | 29.11 | 739.4 | 29.40 | 746.7 | 46.1 | 7.8 | ..... | ENE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | Blank | Blank | Gloomy..... | J. Fisher. |
| Kew, Observatory | 29.54 | 750.3 | 29.58 | 751 3 | 40.3 | 4.6 | ..... | E | 15 | 6.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | The Meteorological Of. |
| Leicester, Museum | 29.37 | 746.0 | 29.63 | 752.6 | 35.0 | 1.7 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.62 | 752.1 | 29.70 | 754.4 | 64 | 17.8 | ..... | N | ..... | ..... | 2 | ..... | 4k | ..... | ..... | ..... | ..... | D. clouds.. .. | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.83 | 757.7 | 29.92 | 760.0 | 36 | 2.2 | ..... | SE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded.... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.11 | 764.8 | 75.0 | 23.9 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.47 | 748.5 | 29.67 | 753.6 | 34.1 | 1.2 | ..... | SE | ..... | ..... | 3 | ..... | 10d | E | ..... | 0.091 | 0.231 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.10 | 739.1 | 29.64 | 752.8 | 34.0 | 1.1 | ..... | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.59 | 751.6 | 40 | 4.4 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. E. Bellamy. |
| Plymouth | 29.41 | 747.0 | 29.49 | 749.0 | 41.8 | 5.4 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Merrifield. |
| Roche's Point | 29.61 | 752.1 | 29.66 | 753.4 | 39 | 3.9 | ..... | NNE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | W. Kennedy. |
| Saint Ann's Head | 29.44 | 747.8 | 29.60 | 751.8 | 40 | 4.4 | ..... | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 30.03 | 762.8 | 33.5 | 0.8 | ..... | ESE | 30 | 13.4 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Snow-showers.. | Rev O. Clouston, L.L.D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.96 | 761.0 | 60.0 | 15.6 | ..... | ENE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | Blank | Blank | D. clouds..... | W. H. Lyne. |
| Sheffield | 29.32 | 744.7 | 29.61 | 752.1 | 33.2 | 0.7 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.05 | 1.3 | Snowing..... | W. F. Cooper. |
| Silloth Rectory | 29.72 | 754.9 | 29.75 | 755.6 | 36.0 | 2.2 | 74 | E | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0.020 | 0.51 | Snowing..... | Francis Redford, A. M |
| Stonyhurst, Observatory | 29.30 | 745.2 | 29.70 | 754.4 | 33.7 | 0.9 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. S. J. Perry. |
| Stratfield Turgiss | 29.36 | 745.7 | 29.58 | 751.3 | 39.8 | 4.3 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy ..... | C.H.Griffith, F.M.S. |
| Thurso | 29.94 | 760.5 | 30.00 | 762.0 | 36 | 1.7 | ..... | ESE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | John Trotter. |
| Truro, Royal Institution | 29.46 | 748.3 | 29.53 | 750.0 | 43 | 6.1 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | W. Newcombe. |
| Valencia, Observatory | 29.72 | 754.9 | 29.74 | 755.4 | 41.9 | 5.5 | ..... | NNE | 12 | 5.4 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.14 | 765.5 | 30.18 | 766.6 | 69.5 | 20.8 | 60 | S | 21 | 9.4 | ..... | 0 | 1 | ..... | ..... | 0 | 0 | Fine ..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.04 | 763.0 | 55.0 | 13.0 | 82 | E | ..... | ..... | 2 | ..... | 10kn | ..... | ..... | 0 | 0 | Cloudy ..... | Francis Abbott, F.R.A.S |
| Leith, Restalrig Park | ..... | ..... | 29.86 | 758.4 | 32.9 | 0.5 | ..... | E | ..... | ..... | 4 | ..... | 10k | S | ..... | 0.02 | 0.5 | Cloudy..... | Andrew Gibb. |
| Mauritius, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | C. Meldrum. |
| Melbourne, Observatory | 30.06 | 763.5 | 30.15 | 765.8 | 61.8 | 16.6 | 78 | SSW | 6 | 2.7 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 29.85 | 758.2 | 37 | 2.8 | ..... | ESE | ..... | ..... | 4 | 5 | 5 | SE | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.13 | 765.3 | 33 | 0.6 | ..... | SE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | Snowing..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

| British Marine Series. Vessels. | Barometer. Corrected for instrum't'al error and temperature. Inches. | Barometer. Corrected for instrum't'al error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 58', E. 28° 35' | ..... | ..... | 29.99‡ | 761.7‡ | 60. | 15.6 | NNE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| S. S. Amanda, N. 37° 43', E. 6° 24' | ..... | ..... | 29.79‡ | 756.7‡ | 60.8 | 16.0 | W | ..... | ..... | 5 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. B. Boyes. |
| Barque Belle-Isle, N. 38° 30', W. 44° 09' | ..... | ..... | 30.18‡ | 766.6‡ | 64 | 17.8 | SSW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | 7 | SW | Overcast..... | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra, N. 37° 07' W. 41° 11' | ..... | ..... | 30.35‡ | 770.9‡ | 64.2 | 17.9 | SE | ..... | ..... | 5 | ..... | 6 | ..... | ..... | ..... | ..... | W | D. clouds..... | Capt. Thos. Young. |
| Barque Commewyne, N. 45° 16', W. 26° 50' | ..... | ..... | 30.03‡ | 762.8‡ | 58 | 14.4 | WSW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | D. clouds..... | Capt. A. Buchan. |
| Barque Fedalina, N. 26° 00', W. 31° 00' | ..... | ..... | 30.32 | 770.1 | 69 | 20.6 | E | ..... | ..... | 5 | ..... | 3 | ..... | ..... | ..... | 2 | NE | D. clouds..... | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam, N. 5° 42', E. 98° 34' | ..... | ..... | 29.93‡ | 760.2‡ | 82 | 27.8 | Var. | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | D. clouds..... | Capt. Barlow. |
| S. S. Strathleven, N. 37° 11', E. 10° 49' | ..... | ..... | 29.66‡ | 753.1‡ | 58.5 | 14.7 | WNW | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | ..... | D. clouds..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Contral Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.28 | 667.5 | 30.00 | 762.0 | 66.2 | 19.0 | 79 | NE | ..... | ..... | 2 | 8ks | ..... | ..... | ..... | 0.016 | 0.4 | ..... | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.6 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.06 | 763.4 | 30.10 | 764.6 | 31.3 | — 0.4 | 63 | ESE | ..... | ..... | 7 | ..... | 8 | ..... | ..... | ..... | ..... | ..... |
| Farõe | 29.94 | 760.4 | 29.96 | 760.9 | 32.4 | 0.2 | 69 | ESE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.75 | 755.7 | 29.80 | 756.8 | 14.7 | — 9.6 | 78 | NNE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Farõe) | 30.06 | 763.5 | 30.10 | 764.4 | 40.6 | 4.7 | 67 | SSE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.93 | 760.3 | 30.10 | 764.6 | 28.8 | — 1.8 | 80 | NE | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 28.93 | 734.7 | 29.48 | 748.7 | 49.3 | 9.6 | 95 | N | ..... | ..... | 1 | ..... | 5 | ..... | SW | 0.047 | 1.2 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 29.29 | 743.9 | 29.40 | 746.7 | 41.0 | 5.0 | 90 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bonvallet, Director. |
| Avignon, Normal School | 29.46 | 748.3 | 29.54 | 750.3 | 58.1 | 14.5 | 72 | SE | ..... | ..... | 2 | ..... | 8 | S | SE | 0 | 0 | Very cloudy | M. Giraud, Director. |
| Bar-sur-Seine | 28.91 | 734.3 | 29.45 | 748.1 | 57.7 | 14.3 | 44 | S | ..... | ..... | 1 | ..... | 8kn | ..... | SW | 0 | 0 | Very cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.24 | 742.7 | 29.54 | 750.2 | 41.7 | 5.4 | 89 | ESE | ..... | ..... | 1 | ..... | 10 | ..... | SE | 0.059 | 1.50 | Covered | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 28.81 | 726.8 | 29.49 | 749.1 | 56.5 | 13.6 | 53 | SE | ..... | ..... | 2 | ..... | 5 | ..... | SW | 0 | 0 | Cloudy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.67 | 728.1 | 29.57 | 751.0 | 60.1 | 15.6 | 50 | S | ..... | ..... | 3 | ..... | 8ck | S | S | 0 | 0 | Very cloudy | M. Marlot, Director. |
| Bourges, Normal School | 28.91 | 734.2 | 29.46 | 748.2 | 50.0 | 10 | 93 | SW | ..... | ..... | 4 | ..... | 10 | SW | SW | 0.016 | 0.4 | Raining | A. Waquet, Director. |
| Brest, Naval Observatory | 29.09 | 737.9 | 29.30 | 744.1 | 49.0 | 9.8 | 69 | N | ..... | ..... | 1 | ..... | 10 | ..... | NE | 0.748 | 19.00 | Rain & hail. | M.de Rermaree, Director |
| Carcassonne, Normal School | 28.99 | 736.4 | 29.40 | 746.8 | 55.0 | 12.8 | 50 | E | ..... | ..... | 2 | ..... | 2 | W | W | 0 | 0 | Slightly cl'dy | September, Director. |
| Caen, Normal School | 29.34 | 745.2 | 29.41 | 747.1 | 50.7 | 10.4 | 74 | E | ..... | ..... | 1 | ..... | 8 | ..... | ESE | 0.08 | 2. | Very cloudy | M. Lair, Director. |
| Chartres, Normal School | 28.89 | 733.7 | 29.42 | 747.3 | 48.5 | 9.4 | 88 | E | ..... | ..... | 1 | ..... | 10 | ..... | W | 0.12 | 3. | Raining | M. Vervier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.19 | 741.4 | 29.50 | 749.3 | 49.5 | 9.7 | 39 | SSE | ..... | ..... | 3 | ..... | 8 | NW | NW | ..... | ..... | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.09 | 713.4 | 29.40 | 746.7 | 58.6 | 14.8 | 31 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.66 | 728.0 | 29.51 | 749.5 | 53.4 | 11.9 | 54 | SE | ..... | ..... | 3 | ..... | 5 | ..... | SE | 0 | 0 | Cloudy | Dr. Coulet, Director. |
| Commune de Grèasque* | 28.45 | 722.7 | 29.60 | 751.7 | 56.3 | 13.5 | 64 | S | ..... | ..... | 6 | ..... | 8 | ..... | SE | 0.118 | 3.0 | ¼ covered | M. Kina, Director. |
| Grenoble, Normal School | 28.74 | 730.0 | 29.49 | 749.0 | 58.6 | 14.8 | 53 | SSW | ..... | ..... | 2 | ..... | 8ks | SW | ..... | 0 | 0 | Very cloudy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.16 | 740.7 | 29.38 | 746.2 | 49.6 | 9.8 | 95 | SE | ..... | ..... | 1 | ..... | 5 | ..... | SE | 0.071 | 1.8 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.13 | 739.8 | 29.43 | 747.6 | 52.2 | 11.2 | 71 | SE | ..... | ..... | 2 | ..... | 8 | ..... | SE | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 28.62 | 727.0 | 29.54 | 750.2 | 59.2 | 15.1 | 45 | SE | ..... | ..... | 2 | ..... | 5 | ..... | W | 0 | 0 | Cloudy | Baudry, Director. |
| Lorient, Naval Observatory | 29.25 | 742.9 | 29.35 | 745.4 | 54.0 | 12.2 | 86 | SE | ..... | ..... | 2 | ..... | ..... | ..... | SE | 0.500 | 12.7 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galxin, Director |
| Mirecourt, Normal School | 28.53 | 724.6 | 29.58 | 751.2 | 55.8 | 13.2 | 52 | SE | ..... | ..... | 3 | ..... | kn | ..... | NW. | 0 | 0 | ..... | M. Barbier, Director. |
| Nismes, Normal School | 29.29 | 743.9 | 29.49 | 749.0 | 55.8 | 13.2 | 76 | S | ..... | ..... | 1 | ..... | 8 | S | S | 0 | 0 | Very cloudy | Boyer, Director. |
| Privas, Normal School | 28.49 | 723.6 | 29.54 | 750.4 | 51.8 | 11 | 75 | S | ..... | ..... | 4 | ..... | 10 | S | S | ..... | ..... | Raining | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.63 | 625.7 | ..... | ..... | 36.5 | 2.5 | 82 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.35 | 745.4 | 29.38 | 746 2 | 56.5 | 13.6 | 75 | WNW | ..... | ..... | 1 | ..... | 5 | SSW | SSW | 0.08 | 2. | ¼ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.34 | 745.1 | 29.42 | 747.3 | 46.4 | 8.0 | 79 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.098 | 2.5 | Covered | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.32 | 744.6 | 29.35 | 745.4 | 51.8 | 11.0 | 72 | ESE | ..... | ..... | 4 | ..... | 8 | ESE | ESE | 0.068 | 1.73 | Sprinkling | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.32 | 744.8 | 29.49 | 749.0 | 47.5 | 8.6 | 85 | E | ..... | ..... | 1 | ..... | ..... | ..... | SSE | 0.098 | 2.5 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.48 | 723.4 | 29.53 | 750.0 | 62.6 | 17 | 52 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Huguet, Director. |
| Versailles Observatory | 28.98 | 736.0 | 29.47 | 748.5 | 42.8 | 6.0 | 97 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.304 | 7.72 | Raining | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 28.75 | 730.2 | 29.50 | 749.3 | 53.6 | 12 | 76 | SE | ..... | ..... | 2 | ..... | 2 | ..... | S | 0.71 | 18. | Slightly cl'dy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.84 | 757.9 | 29.87 | 758.6 | 77.4 | 25.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.43 | 11. | ..... | L'Abbé Marel 6si. |
| Lyons Obs'y, (Park Station) | 28.88 | 733.5 | 29.48 | 748.7 | 58.6 | 14.8 | 46 | S | ..... | ..... | 4 | ..... | 8 | ..... | S | 0.004 | 0.1 | Cloudy | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 24.32 | 617.6 | 29.63 | 752.6 | 39.2 | 4.0 | 64 | SSW | 28.0 | 12.5 | ..... | ..... | 3 | ..... | SW | 0.031 | 0.8 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.66 | 753.3 | 58.6 | 14.8 | 76 | W | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | Covered | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.20 | 741.8 | ..... | ..... | 45.3 | 7.4 | 94 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.098 | 2.5 | Sprinkling | Marié Davy, Director. |
| Perpignan | 29.30 | 744.2 | 29.41 | 746.9 | 61.2 | 16.2 | 53 | SW | 13.0 | 5.8 | ..... | ..... | 7 | ..... | SW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 21 95 | 557.6 | ..... | ..... | 26.4 | — 3.1 | ..... | SW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0.453 | 11.5 | Snowy | Gen'l de Nansouty. |
| Toulouse, Observatory | 28.76 | 730.5 | 29.47 | 748.5 | 59.0 | 15.0 | 65 | SSE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0.161 | 4.1 | ..... | M. Mercadier Juller. |
| Tours | 29.22 | 742.3 | 29.42 | 747.3 | 54.0 | 12.2 | 65 | SE | ..... | ..... | 2 | ..... | 7 | ..... | SW | 0.059 | 1.5 | ..... | Cousin-Marquete. |
| Zi-Ka-Wei, (near Shanghai) | 30.12 | 765.0 | 30.14 | 765.6 | 48.9 | 9.4 | 69 | ESE | 13.7 | 6.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,686.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.85 | 732.8 | 29.69 | 754.0 | 44.6 | 7.0 | 63 | E | | | 4 | | 1 | E | | 0.012 | 0.3 | | Prof. Dr. Hoh. |
| Berlin | 29.76 | 756.0 | 29.95 | 760.6 | 34.5 | 1.4 | 66 | SE | | | 4 | | 8 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.41 | 746.9 | 29.93 | 760.3 | 34.9 | 1.6 | 68 | ESE | | | 2 | | 10 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.15 | 740.3 | 29.56 | 750.9 | 55.0 | 12.8 | 53 | E | | | 2 | | 1 | SW | | 0 | 0 | | Albert Sens. |
| Cassel | 29.08 | 738.7 | 29.69 | 754.0 | 44.6 | 7.0 | 53 | ESE | | | 3 | | 2 | E | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.43 | 747.4 | 29.59 | 751.5 | 50.2 | 10.1 | 55 | SE | | | 3 | | 8k | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.30 | 744.2 | 29.67 | 753.6 | 49.6 | 9.8 | | SE | | | 2 | | 3 | | | 0.004 | 0.1 | | Physical Society. |
| Friedrichshafen | 28.16 | 715.3 | 29.60 | 751.8 | 45.7 | 7.6 | 73 | NE | | | 8 | | 0 | | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.82 | 757.3 | 29.89 | 759.2 | 35.1 | 1.7 | 80 | ESE | | | 4 | | 5ks | | | 0 | 0 | Fair | Captain F. Hegemann. |
| Kiel | 29.93 | 760.2 | 29.95 | 760.6 | 32.2 | 0.1 | 58 | E | | | 3 | | 3 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.11 | 764.7 | 30.19 | 766.9 | 33.1 | 0.6 | 48 | E | | | 5 | | 2 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 30.03 | 762 8 | 32.7 | 0.4 | | E | | | 4 | | 2 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.39 | 746.5 | 29.82 | 757.5 | 37.8 | 3.2 | 63 | E | | | 5 | | 8 | | | 0 | 0 | | Prof. Brahns, Privy Counselor. |
| Memel, Naval School | 30.20 | 767.0 | 30.24 | 768.2 | 30.2 | — 1.0 | 48 | E | | | 4–5 | | 1ck | | | | | | Skalweit. |
| Neufahrwasser | 30.17 | 766.2 | 30.18 | 766.6 | 30.7 | — 0.7 | 49 | ESE | | | 3 | | 4 | E | | 0 | 0 | | A. Lothes. |
| Posen | 29.72 | 754.8 | 30.02 | 762.5 | 33.4 | 0.8 | 60 | SE | | | 6 | | 10 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.05 | 737.8 | 29.60 | 751.8 | 49.8 | 9.9 | 66 | NE | | | 1 | | 5 | | | 0.009 | 0.22 | | Imp. University Observatory. |
| Stuttgart | 28.75 | 727.8 | 29.58 | 751.4 | 52.7 | 11.5 | 41 | SE | | | 1 | | 1 | E | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.01 | 736.9 | 29.58 | 750.0 | 53.6 | 12.0 | 42 | E | | | 6 | | 5 | | | 0 | 0 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.14 | 714.8 | 29.66 | 753.3 | 44.4 | 6.9 | 63 | ENE | 11 | 5 | | | 1k | SE | | 0 | 0 | Fair | Dr. Van Bebber. |
| Wustrow, Naval School | 29.98 | 761.4 | 30.00 | 762.0 | 32.4 | 0.2 | 81 | E | | | 5 | | 5s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.47 | 748.6 | 29.86 | 758.5 | 61.3 | 16.3 | | SE | | | 1.5 | | | | | | | Covered | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.89 | 759.2 | 29.94 | 760.5 | 79.3 | 26.3 | 52 | W | 16 | 7.2 | | | 8 | | | 0 | 0 | | D. clouds |
| Deesa | 29.43 | 747.6 | 29.90 | 759.4 | 90.1 | 32.3 | 15 | W | 7.2 | 3.2 | | | 0 | | | 0 | 0 | | Blue sky |
| Bombay | 29.85 | 758.2 | 29.89 | 759.2 | 82.1 | 27.8 | 68 | NW | 26 | 11.6 | | | 6 | WNW | | 0 | 0 | | D. clouds |
| Lahore | 29.18 | 741.2 | 29.92 | 759.9 | 87.0 | 30.6 | 29 | NE | 3.9 | 1.7 | | | 0 | | | 0 | 0 | | Blue sky |
| Belgaum | | | | | | | | | | | | | | | | | | | |
| Roorkee | 29.00 | 736.5 | 29.89 | 759.1 | 84.8 | 29.3 | 23 | SW | 2.8 | 1.2 | | | 8 | | | 0 | 0 | | Gloomy |
| Agra | 29.22 | 742.1 | 29.77 | 756.1 | 91.7 | 33.2 | 27 | W | | | | | | | | 0 | 0 | | |
| Nagpur | 28.83 | 732.3 | | | | | | SW | 3.3 | 1.5 | | | | | | 0 | 0 | | D clouds |
| Lucknow | 29.50 | 749.3 | 29.87 | 758.8 | 88.2 | 31.2 | 45 | WNW | 2.3 | 1.0 | | | 0 | | | 0 | 0 | | Blue sky |
| Allahabad | 29.55 | 750.6 | 29.86 | 758.4 | 92.2 | 33.4 | 29 | NW | 3.1 | 1.4 | | | 0 | | | 0 | 0 | | Blue sky |
| Patna | 29.62 | 752.3 | 29.80 | 756.8 | 93.9 | 34.4 | 17 | NW | 2.4 | 1.1 | | | 0 | | | 0 | 0 | | Blue sky |
| Hazaribagh | 27.87 | 707.9 | 29.84 | 758.0 | 89.3 | 31.8 | 16 | WNW | 8.2 | 3.7 | | | 0 | | | 0 | 0 | | Blue sky |
| Cuttack | 29.77 | 756.0 | 29.85 | 758.1 | 89.0 | 31.7 | 48 | S | 2.9 | 1.3 | | | 0 | | | 0 | 0 | | Blue sky |
| Calcutta (Alipore) | 29.81 | 757.2 | 29.83 | 757.8 | 85.4 | 29.7 | 70 | SW | 9.0 | 4.0 | | | 0 | | | 0 | 0 | | Blue sky |
| Goalpara | 29.37 | 746.1 | 29.76 | 755.8 | 87.3 | 30.7 | 44 | SSE | 4.0 | 1.8 | | | 2 | | W | 0.03 | 0.8 | | D. clouds |
| Chittagong | 29.80 | 757.0 | 29.90 | 759.3 | 80.9 | 27.2 | 81 | SSW | 5.1 | 2.3 | | | 0 | | | 0 | 0 | | Misty |
| Sibsagar | 29.52 | 749.9 | 29.86 | 758.6 | 74.3 | 23.5 | 72 | Calm | 0.9 | 0.4 | | | 10 | W | W | 0.04 | 1.0 | | Overcast |
| Jubbulpore | 28.60 | 724.0 | 29.88 | 757.8 | 94.2 | 34.6 | 16 | NE | 4.5 | 2.0 | | | 2 | S E | | 0 | 0 | | D. clouds |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.24 | 742.7 | 29.85 | 758.2 | 44.6 | 7.0 | 81 | E | 5.6 | 2.5 | ..... | ..... | 10 | ..... | ..... | 1.724 | 43.8 | ..... | Prof. Giovanni Cloddig. |
| Milan | 29.13 | 739.9 | 29.85 | 758.1 | 52.5 | 11.4 | 71 | S | ..... | ..... | 2 | ..... | 9 | NW | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.53 | 750.0 | 29.64 | 752.8 | 52.7 | 11.5 | 76 | NNE | 6.9 | 3.1 | ..... | ..... | 10 | SW | ..... | 0.803 | 20.4 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.74 | 730.1 | 29.65 | 753.1 | 52.9 | 11.6 | 65 | SSE | 4.9 | 2.2 | ..... | ..... | 6 | E | ..... | 0.496 | 12.6 | ..... | Prof. P. F. Denza. |
| Genoa | 29.44 | 747.8 | 29.63 | 752.7 | 57.7 | 14.3 | 55 | SW | 6.3 | 2.8 | ..... | ..... | 2 | SW | ..... | 0.236 | 6.0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.71 | 703.8 | 29.62 | 752.3 | 51.3 | 10.7 | 63 | NNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.087 | 2.2 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.59 | 751.5 | 29.63 | 752.7 | 51.1 | 10.6 | 82 | NW | 17.4 | 7.8 | ..... | ..... | 10 | NW | ..... | 0.394 | 10.0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.37 | 746.0 | 29.63 | 752.5 | 51.7 | 16.5 | 53 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.654 | 16.6 | ..... | Cav. F. Meucci |
| Leghorn | 29.52 | 749.9 | 29.61 | 752.1 | 51.8 | 11.0 | 85 | ESE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.508 | 12.9 | ..... | Prof. P. Monte. |
| Rome | 29.45 | 748.0 | 29.62 | 752.4 | 58.5 | 14.7 | 84 | S | 6.9 | 3.1 | ..... | ..... | 10 | ..... | ..... | 0.346 | 8.8 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.47 | 748.5 | 29.72 | 754.9 | 58.6 | 14.8 | 75 | SSW | 19.9 | 8.9 | ..... | ..... | 10 | S | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.76 | 730.6 | 29.65 | 753.0 | 61.2 | 16.2 | 80 | SSE | 5.6 | 2.5 | ..... | ..... | 9 | ..... | ..... | 0.445 | 11.3 | ..... | Prof. D. Conti. |
| Cagliari | 29.50 | 749.3 | 29.69 | 754.2 | 63.1 | 17.3 | 86 | W | ..... | ..... | 2 | ..... | 3 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.40 | 746.7 | 29.65 | 753.1 | 66.6 | 19.2 | 53 | W | 6.9 | 3.1 | ..... | ..... | 8 | W | ..... | 0.008 | 0.2 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.58 | 751.4 | 29.66 | 753.3 | 58.3 | 14.6 | 79 | NNE | 3.8 | 1.7 | ..... | ..... | 8 | WNW | ..... | 0.181 | 4.6 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.13 | 739.8 | 29.68 | 753.9 | 56.3 | 13.5 | 83 | SE | 2.5 | 1.1 | ..... | ..... | 10 | ..... | ..... | 0.073 | 1.6 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.22 | 767.6 | 30.24 | 768.1 | 43.0 | 6.1 | 65 | N | 7.3 | 3.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Fair | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 30.01 | 762.2 | 30.22 | 767.6 | 47.3 | 8.5 | 75 | N | 2.7 | 1.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 30.01 | 762.2 | 30.08 | 764.0 | 41.6 | 5.3 | 54 | N | 14.1 | 6.3 | ..... | ..... | 3s | ..... | ..... | 0 | 0 | ..... | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | P. Ceballos. |
| Guadalajara | 25.05 | 636.2 | 30.11 | 764.8 | 48.2 | 9.0 | 49 | SW | ..... | ..... | 1 | 1 | ..... | ..... | ..... | 0 | 0 | Clear | Prof. L. Perez. |
| Leon | 24.41 | 620.0 | 30.09 | 764.3 | 57.6 | 14.2 | 69 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.05 | 585.5 | 30.18 | 766.6 | 46.4 | 8.0 | 66 | N | 1.1 | 0.5 | ..... | 0 | 1d;k | ..... | W | 0 | 0 | Clear | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 50.5 | 10.3 | 64 | Calm | ..... | ..... | 0 | 1cs | 0 | ..... | ..... | 0 | 0 | Fair | M. V. de Leon, M. E. |
| Tlacotalpam | 29.89 | 759.3 | 29.91 | 759.6 | 73.4 | 23. | 95 | SW | ..... | ..... | 1 | 1 | 0 | SE | ..... | 0 | 0 | ..... | M. M. Chazaro. |
| San Luis Potosi | 24.24 | 613.1 | 30.14 | 765.6 | 52.0 | 11.1 | 67 | SE | ..... | ..... | 1 | 3 | 0 | W | ..... | 0.043 | 1.1 | Partly cl'dy | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.45 | 593.5 | 30.13 | 765.3 | 48.6 | 6.4 | 73 | NW | 0.1 | 0.04 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.38 | 720.9 | 30.05 | 763.4 | 71.1 | 21.7 | 55 | NE | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.59 | 751.6 | 29.59 | 751.6 | 43.5 | 6.4 | ..... | ENE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.031 | 0.8 | ..... | |
| Groningen | 29.67 | 753.7 | 29.73 | 755.1 | 37.4 | 3.0 | ..... | ESE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.69 | 754.0 | 29.69 | 754.0 | 34.5 | 1.4 | ..... | ENE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.61 | 752.1 | 29.61 | 752.1 | 40.5 | 4.7 | 77 | ENE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.59 | 751.6 | 29.64 | 752.8 | 39.9 | 4.4 | 75 | ESE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.008 | 0.2 | Very cloudy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.18 | 766.6 | 30.24 | 768.0 | 29.8 | — 1.2 | 57 | ESE | 16.6 | 7.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 30.35 | 770.9 | 30.39 | 771.0 | 37.4 | 3.0 | 50 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 30.20 | 767.0 | 30.35 | 770.9 | 32.2 | 0.1 | 56 | ENE | 11 | 5 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.39 | 772.0 | 30.44 | 773.1 | 31.3 | — 0.4 | 81 | SW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.16 | 766.1 | 30.35 | 771.0 | 58.6 | 14.8 | 78 | W | 5.6 | 2.5 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.83 | 732.3 | 29.88 | 758.9 | 50.0 | 10.0 | 84 | WNW | 15.0 | 6.7 | ..... | ..... | 5 | WNW | ..... | 0.331 | 8.4 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.15 | 765.8 | 30.24 | 768.0 | 64.2 | 17.9 | 68 | S | 8.1 | 3.6 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.60 | 751.9 | 29.96 | 761.0 | 56.3 | 13.5 | 56 | WNW | 23.7 | 10.6 | ..... | ..... | 8 | ..... | ..... | 0.177 | 4.5 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.32 | 770.2 | 30.39 | 772.0 | 62.2 | 16.8 | 61 | WSW | 1.3 | 0.6 | ..... | ..... | 8 | ..... | ..... | 0.059 | 1.5 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa Com'd.t. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | ..... | ..... | 30.02 | 762.4 | 82.4 | 28.0 | ..... | SE | ..... | ..... | 4 | ..... | 6 | ..... | SE | 3 | SE | D. clouds | A. J. de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | | J. T. d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto de S. Jose de Bissao, Senegambia | ..... | ..... | 29.93 | 760.3 | 82.8 | 28.2 | ..... | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | ..... | Blue sky | A. Ferreira, 2d Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | 29.80 | 756.8 | 91.0 | 32.8 | ..... | NNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 30.04 | 763.0 | 70.2 | 21.2 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 1 | ..... | Overcast | J. M T. Guimaraes, Com'd't. |
| Duque da Terceira, Santiago, Cape Verd I. | ..... | ..... | 30.24 | 768.2 | 81.5 | 27.5 | ..... | NE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 2 | ..... | Blue sky | C.C.da Fonseca Ferreira, Comd't. |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.64 | 752.9 | 30.08 | 764.1 | 32.2 | 0.1 | 62 | ESE | 13 | 6 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.80 | 757 0 | 30.25 | 768.3 | 29.1 | — 1.6 | 63 | NE | 2 | 1 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 30.18 | 766.6 | 30.44 | 773.2 | 29.3 | — 1.5 | 62 | NE | 11 | 5 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.46 | 773.8 | 30.48 | 774.2 | 26.4 | — 3.1 | 70 | NE | 9 | 4 | ..... | ..... | 8k | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.49 | 749.1 | 30.17 | 766.2 | 28.2 | — 2.1 | 63 | NE | 4 | 2 | ..... | ..... | 10k;ks; c;n] | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 30.14 | 765.5 | 30.21 | 767.3 | 34.2 | 1.2 | 65 | NNE | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.16 | 766.1 | 30.18 | 766.6 | 35.4 | 1.9 | 90 | NW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.71 | 754.5 | 30.29 | 769.4 | 25.5 | — 3.6 | 65 | E | 9 | 4 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.73 | 755.1 | 29.94 | 760.4 | 39.2 | 4.0 | 84 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | Meteorological Obs. |
| Archangel | 30.41 | 772.3 | 30.43 | 772.8 | 26.2 | — 3.2 | 80 | W | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Capt. Ssellwerstow. |
| Tiflis | 28.55 | 725.1 | 29.96 | 760.9 | 57.6 | 14.2 | 44 | N | 45 | 20 | ..... | ..... | 5cs | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.00 | 762.1 | 29.92 | 760.0 | 62.8 | 17.1 | 44 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.80 | 756.9 | 30.31 | 769.8 | 21.7 | — 5.7 | 69 | NNE | 11 | 5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 30.06 | 763.5 | 30.35 | 770.8 | 26.2 | — 3.2 | 58 | Calm | 0 | 0 | ..... | ..... | 3 | ..... | ..... | Light clouds | | Physical Cabinet. |
| Ekaterinburg | 29.15 | 740.4 | 30.17 | 766.2 | 26.8 | — 2.9 | 49 | Calm | 0 | 0 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.62 | 752.4 | 29.85 | 758.2 | 71.6 | 22.0 | 37 | NNW | 11 | 5 | ..... | ..... | 2cs | ..... | ..... | ..... | ..... | Solar corona |
| Tashkend | 28.41 | 721.7 | 30.09 | 764.2 | 66.6 | 19.2 | 46 | NNE | 9 | 4 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.75 | 755.7 | 30.29 | 769.3 | 20.8 | — 6.2 | 74 | SW | 7 | 3 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.88 | 759.0 | 30.20 | 767.0 | 16.2 | — 8.8 | 80 | SW | 4 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 29.78 | 756.4 | 29.92 | 760.0 | 42.6 | 5.9 | 62 | S | 4 | 2 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.93 | 760.3 | 30.03 | 762.8 | 32.0 | 0.0 | 74 | Calm | 0 | 0 | ..... | ..... | 8n | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | 29.64 | 752.8 | 29.72 | 755.0 | 7.9 | —13.4 | 76 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount—and generally the kind of cloudiness—without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.42 | 747.2 | 29.52 | 749.9 | 59.0 | 15 | 52 | SW | 3.9 | 1.75 | ..... | ..... | 2k;ck | ..... | ..... | 0.048 | 1.22 | Antonio Rave, Directo |
| Bilbao, Met. Obs'y | 29.47 | 748 6 | 29.53 | 750.1 | 56.5 | 13.6 | 84 | NW | 5.6 | 2.52 | ..... | 0 | 10 | ..... | ..... | 0.193 | 4.9 | Raining ..... Prof. Manuel de Navera n |
| Burgos, Met. Obs'y | 26.59 | 675.8 | ..... | ..... | 44.6 | 7.0 | 85 | SW | 17.9 | 8.02 | ..... | 0 | 8 | ..... | ..... | 0.059 | 1.5 | Cloudy..... Domingo Martin y Perez. |
| Madrid, Royal Osservatory | 27.43 | 696.7 | ..... | ..... | 50.2 | 10.1 | 65 | SW | 22.1 | 9.89 | ..... | 0 | 9 | ..... | ..... | 0 | 0 | Almost cov'd The Staff. |
| Murcia, Met. Obs'y | 29.54 | 750.3 | 29.69 | 754.1 | 62.6 | 17.0 | 68 | NW | 2.9 | 1.31 | ..... | 4 | 5 | ESE | ..... | 0.014 | 0.36 | Rainy ..... Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.82 | 732.0 | 29.73 | 755.1 | 49.8 | 9.9 | 72 | NNW | 13.0 | 5.8 | ..... | 0 | 10 | ..... | ..... | 0.484 | 12.3 | Light hail..... R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.01 | 762.3 | 30.08 | 764.0 | 70.3 | 21.3 | 87 | ESE | 3.4 | 1.5 | ..... | 5cs | 0 | ..... | ..... | 0 | 0 | Fair..... Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.83 | 757.8 | 29.89 | 759.2 | 82.7 | 28.2 | 77 | E | 2.7 | 1.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear. ..... Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.87 | 758.7 | 29.97 | 761.2 | 57.4 | 14.1 | 66 | WNW | 17.1 | 7.6 | ..... | 0 | 8 | ..... | NW | 0.858 | 21.8 | ..... Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I | 29.92 | 760.0 | 30.01 | 762.3 | 76.3 | 24.6 | 92 | S? | 0 | 0 | ..... | 4ks | 8k | S | S | 0 | 0 | Cloudy..... Leonardo de Tejeda, Ch'f Eng'r. |

Note.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.68 | 775.4 | 30.57 | 776.4 | 18.7 | — 7.4 | | Calm | | | 0 | | 0 | | | 0 | 0 | | |
| Umea | 30.47 | 773.9 | 30.52 | 775.2 | 28.4 | — 2.0 | 60 | SW | | | 2 | | 0 | | | 0 | 0 | | |
| Hernosand | 30.49 | 774.5 | 30.54 | 775.8 | 33.1 | 0.6 | 61 | E | | | 2 | | 5 | | | 0 | 0 | | |
| Stockholm | 30.24 | 768.0 | 30.41 | 772.5 | 28.8 | — 1.8 | 62 | NE | | | 6 | | 10 | | | 0.028 | 0.7 | Snowing | |
| Wisby | 30.19 | 766.9 | 30.25 | 768.4 | 31.3 | — 0.4 | 66 | SE | | | 6 | | 3 | | | 0.087 | 2.2 | | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.35 | 771.0 | 30.43 | 772.9 | 27.7 | — 2.4 | 70 | E | 9.2 | 4.1 | | | 10 | | SE | 0.00 | 0.01 | | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.13 | 714.4 | 29.56 | 750.9 | 50.0 | 10.0 | 83 | NNE | | | 2 | | 4 | | | 0.035 | 0.9 | Cloudy | The Observatory. |
| Zurich | 27.95 | 710.0 | 29.61 | 752.1 | 48.6 | 9.2 | 70 | N | | | 1 | | 2 | | SW | 0 | 0 | Clear | The Observatory. |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —9.9 mm.; Thermometer, +0.8 Cent.; Relative Humidity, —6 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | | | 30.04 | 763.0 | 55.6 | 13.3 | 66 | ENE | 13 | 6.0 | | | 3 | | SW | 0 | 0 | | The Observatory. |
| Fao, Persian Gulf | | | 30.28 | 769.0 | 71.6 | 22.0 | | SE | | | 4 | | 0 | | | | | | |
| Valona | | | 29.75 | 755.7 | 60.4 | 15.8 | | SW | | | 1 | | 10 | | | 0 | 0 | Covered | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.94 | 760.5 | 30.06 | 763.5 | 67.5 | 19.7 | 67 | NW | | | 1 | | 6ks | | SE | 0 | 0 | D. clouds | Prof. C. V. A. Van Dyck. |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.38 | 771.6 | 30.45 | 773.4 | 22.9 | — 5.1 | 77 | Calm | 0 | 0 | | 5k | 0 | | | 0 | 0 | Fair | Hon. J. Ferguson. |
| Brockville, Ontario | 29.70 | 754.4 | 30.02 | 762.5 | 26 | — 3.3 | | NE | 3 | 1.3 | | | 10s | | E | 0.10 | 2.5 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 30.38 | 771.6 | 30.44 | 773.2 | 22 | — 5.6 | 93 | Calm | 0 | 0 | | 8k | 2ks | W. | W | 0 | 0 | Fair | G. A. Blair. |
| Charlottetown, P. E. Island | 30.38 | 771.6 | 30.48 | 772.9 | 20 | — 6.7 | 93 | W | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.79 | 756.7 | 30.00 | 762.0 | 25.9 | — 3.4 | 98 | E | | | 3 | | 10n | | | 0.05 | 1.3 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | | | | | | | | | | | | | | | | | | | H. A. Johnson |
| Esquimault, B. C | 29.91 | 759.7 | 29.96 | 761.0 | 45.3 | 7.4 | 92 | SE | | | | 9cs | 0 | | | 0.02 | 0.5 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 30.35 | 770.9 | 30.37 | 771.4 | 14 | —10.0 | 98 | S | 5 | 2.2 | | 2cs | 2s | Calm | Calm | 0 | 0 | Clear | J. McWilliams. |
| Fredericton, N. B | 30.37 | 771.4 | 30.44 | 773.2 | 25.2 | — 3.8 | 85 | NW | 1 | 0.4 | | 10cs | 0 | | | 0 | 0 | Overcast | Prof. Harrison. |
| *Fort Garry, Manitoba | 28.70 | 729.0 | 29.54 | 750.3 | 33 | 0.6 | 96 | S | 7 | 3.1 | | 5k | 5ks | W | Calm | 0 | 0 | Cloudy | James Stewart. |
| Granton, Ontario | 28.74 | 730.0 | 29.88 | 758.9 | 31 | — 0.6 | | NE | | | 1 | | 10n | | | Inap. | Inap. | Overcast | James Grant. |
| *Halifax, N. S | 30.27 | 768.8 | 30.42 | 772.6 | 26 | — 3.9 | 89 | Calm | 0 | 0 | | 0 | 0 | | | 0.023 | 0.58 | Clear | F. Allison, M. A. |
| Hamilton, Ontario | 29.49 | 749.0 | 29.88 | 758.9 | 33.7 | 0.9 | 95 | NE | | | 1 | 10cs | 0 | NE | | 0.22 | 5.6 | Overcast | Geo. Dickson, M. A. |
| Heart's Content, N. F | | | | | | | | | | | | | | | | | | | E. Weedon. |
| *Kingston, Ontario | 29.61 | 752.1 | 29.96 | 761.0 | 30 | — 1.1 | 89 | NE | 7 | 3.1 | | | 10n | | NE | 0.20 | 5.1 | Light snow | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.38 | 771.6 | 30.42 | 772.6 | 20.2 | — 6.6 | 93 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | C. H. Rigby. |
| Moose Factory, Ontario | | | | | | | | | | | | | | | | | | | J. R. Nason. |
| *Montreal, Quebec | 29.91 | 759.7 | 30.18 | 766.3 | 21 | — 6.1 | 80 | NE | 7 | 3.1 | | | 10n | | | 0 | 0 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.23 | 742.4 | 29.95 | 760.7 | 30 | — 1.1 | 78 | E | 6 | 2.7 | | 2ck | 2ks | E | E | 0 | 0 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 29.15 | 740.4 | 29.93 | 760.2 | 29.9 | — 1.2 | 83 | NE | | | | | 10n | | | 0 | 0 | Overcast | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.13 | 739.9 | 29.84 | 757.9 | 33 | 0.6 | 100 | N | 10 | 4.5 | | | 10n | | N | 0.11 | 2.8 | Threatening | H. Morgan. |
| Port Hastings, N. S | 30.36 | 771.1 | 30.41 | 772.4 | 23.9 | — 4.5 | | Calm | 0 | 0 | | | | | | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.19 | 741.4 | 29.86 | 758.4 | 34 | 1.1 | 89 | NW | 5 | 2.2 | | | Fog | | NW | 0.02 | 0.5 | Foggy | M. Payne. |
| *Quebec, Quebec | 29.95 | 760.7 | 30.29 | 769.4 | 23 | — 5.0 | 86 | NE | | | 6 | | 10n | | NE | 0 | 0 | Cloudy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.55 | 750.6 | 30.03 | 762.8 | 27 | — 2.8 | 78 | E | 6 | 2.7 | | | 10s | | SE | Inap. | Inap. | Light snow | W. H. McIntyre. |
| St. Andrews, N. B | 30.31 | 769.9 | 30.36 | 771.1 | 34 | 1.1 | 81 | SE | 5 | 2·2 | | | 10n | | | 0 | 0 | Cloudy | Dr. Gove. |
| St. John, N. B | 30.22 | 767.6 | 30.40 | 772.1 | 28 | — 2.2 | 88 | SE | 6 | 2.7 | | 0 | 1k | | | 0 | 0 | Fine | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.19 | 741.4 | 29.93 | 760.2 | 31 | — 0.6 | 83 | NE | 3 | 1.3 | | | 10s | | | 0 | 0 | Cloudy | K. Stewart. |
| Stayner, Ontario | 29.12 | 739.6 | 29.93 | 760.2 | 31 | — 0.6 | 85 | Calm | 0 | 0 | | | 10n | | Calm | 0 | 0 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.56 | 725.4 | 29.89 | 759.2 | 30.3 | — 0.9 | 96 | E | 5.0 | 2.2 | | | 10s | | | 0.05 | 1.3 | Overcast | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.36 | 771.1 | 30.40 | 772.1 | 27 | — 2.8 | 60 | N | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | T. C. Hill. |
| *Toronto, Ontario | 29.48 | 748.8 | 29.86 | 758.9 | 33 | 0.6 | 94 | NE | 13 | 5.8 | | | 10s | | Calm | 0.07 | 1.8 | Cloudy | Magnetic Observatory. |
| Windsor, N. S | 30.33 | 770.4 | 30.43 | 772.9 | 25.0 | — 3.9 | 87 | | | | | 1cs | 0 | | | 0 | 0 | Fair | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | | | | | 22.0 | — 5.6 | 100 | NE | | | | 2k | 5s | | | 0 | 9 | Fair | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

1879.—March 27.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.82 | 757.4 | 30.05 | 763.3 | 35 | 1.7 | 80 | SE | 8 | 1.3 | ..... | ..... | 10n | ..... | Calm | 0.13 | 3.3 | Light snow | |
| Alpena, Michigan | 29.29 | 744.0 | 29.96 | 761.0 | 32 | 0.0 | 79 | Calm | 0 | 0 | ..... | ..... | 8s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Atlanta, Georgia | 28.80 | 731.5 | 29.93 | 760.2 | 59 | 15.0 | 76 | SW | 7 | 3.1 | ..... | Haze | Fog | Calm | Calm | 0.04 | 1.0 | Foggy | |
| Atlantic City, New Jersey | 29.85 | 758.2 | 29.87 | 758.7 | 44 | 6.7 | 91 | SE | 13 | 5.8 | ..... | ..... | 10s | ..... | SW | 1.04 | 26.4 | Cloudy | |
| Augusta, Georgia | 29.79 | 756.7 | 29.97 | 761.2 | 58 | 14.4 | 88 | SW | 1 | 0.4 | ..... | ..... | 10ks;sm | ..... | S;Calm | 0.20 | 5.1 | Cloudy | |
| Baltimore, Maryland | 29.79 | 756.7 | 29.84 | 757.9 | 47 | 8.3 | 92 | E | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0.16 | 4.1 | Foggy | |
| Barnegat, New Jersey | 29.83 | 757.7 | 29.85 | 758.2 | 43 | 6.1 | 100 | SE | 30 | 13.4 | ..... | ..... | 10n | ..... | SW | 0.75 | 19.1 | Light rain | |
| Bismarck, Dakota | 27.65 | 702.3 | 29.51 | 749.5 | 44 | 6.7 | 84 | E | 6 | 2.7 | ..... | 8cs | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Boerne, Texas | 28.43 | 722.1 | 29.70 | 754.4 | 67 | 19.4 | 84 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.26 | 692.4 | 30.22 | 767.6 | 41 | 5.0 | 74 | NW | 8 | 3.6 | ..... | 0 | 5s | ..... | NW | 0.11 | 2.8 | Fair | |
| Boston, Massachusetts | 30.07 | 763.8 | 30.23 | 767.8 | 33.5 | 0.8 | 100 | SE | 17 | 7.6 | ..... | ..... | 10n | ..... | Calm | 0.03 | 0.8 | Heavy snow | |
| Brackettville, Texas | 28.72 | 729.5 | 29.72 | 754.9 | 68 | 20.0 | 84 | NE | 7 | 3.1 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 28.61 | 726.7 | 29.61 | 752.1 | 36 | 2.2 | 80 | E | 10 | 4.5 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.82 | 757.4 | 29.86 | 758.4 | 75 | 23.9 | 86 | SE | 8 | 3.6 | ..... | 0 | 5s | ..... | SE | 0 | 0 | Fair | |
| Buffalo, New York | 29.10 | 739.1 | 29.80 | 756.9 | 37 | 2.8 | 85 | NE | 4 | 1.8 | ..... | ..... | 10n;hz | ..... | Calm | 0.14 | 3.6 | Light rain | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 65 | 18.3 | 40 | Calm | ..... | ..... | 0 | 5c | 0 | E | ..... | 0 | 0 | Fair | |
| Burlington, Vermont | 29.80 | 756.9 | 30.10 | 764.5 | 35 | 1.7 | 80 | S | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Cairo, Illinois | 29.61 | 752.1 | 30.00 | 762.0 | 51 | 10.6 | 72 | Calm | 0 | 0 | ..... | 2c | Haze | W | ..... | 0.03 | 0.8 | Fair | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.06 | 636.5 | 29.86 | 758.4 | 55 | 12.8 | 33 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 45 | 7.2 | 61 | NW | ..... | ..... | 2 | 0 | 5ks | ..... | NW | 0 | 0 | Fair | |
| Campo, California | 27.40 | 696.0 | 29.97 | 761.2 | 33 | 0.6 | 70 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 29.89 | 759.2 | 29.90 | 759.4 | 59 | 15.0 | 94 | SW | 25 | 11.2 | ..... | ..... | 10n | ..... | SW | 0.94 | 23.9 | Light rain | |
| Cape Henry, Virginia | 29.83 | 757.7 | 29.85 | 758.2 | 59 | 15.0 | 82 | SW | 9 | 4.0 | ..... | 5k | 1s | SW | Calm | 0.17 | 4.3 | Fair | |
| Cape Lookout, N. Carolina | 29.90 | 759.4 | 29.91 | 759.7 | 59 | 15.0 | 88 | SW | 23 | 10.3 | ..... | ..... | 10s | ..... | SW | 0.15 | 3.8 | Cloudy | |
| Cape May, New Jersey | 29.79 | 756.7 | 29.82 | 757.4 | 46 | 7.8 | 100 | S | 16 | 7.2 | ..... | 5ck | Fog | W | ..... | 1.52 | 38.6 | Fair | |
| Castroville, Texas | 29.08 | 738.6 | 29.76 | 755.9 | 72 | 22.2 | 76 | S | 6 | 2.7 | ..... | 0 | 5ks | ..... | S | 0 | 0 | Fair | |
| Charleston, South Carolina | 30.01 | 762.2 | 30.07 | 763.8 | 63 | 17.2 | 83 | SW | 9 | 4.0 | ..... | ..... | 10s | ..... | W | 0.25 | 6.3 | Cloudy | |
| Cheyenne, Wyoming | 23.75 | 603.0 | 29.69 | 754.1 | 46 | 7.8 | 40 | W | 4 | 1.8 | ..... | 2cs | 5s | Calm | W | 0 | 0 | Cloudy | |
| Chicago, Illinois | 29.25 | 742.9 | 29.96 | 761.0 | 37 | 2.8 | 90 | NE | 3 | 1.3 | ..... | ..... | Fog | ..... | ..... | 0.07 | 1.8 | Foggy | |
| Cincinnati, Ohio | 29.29 | 744.0 | 29.95 | 760.7 | 45 | 7.2 | 76 | NW | 7 | 3.1 | ..... | 10k | 0 | NW | ..... | 0.26 | 6.6 | Cloudy | |
| Cleveland, Ohio | 29.14 | 740.1 | 29.89 | 759.2 | 33 | 0.6 | 100 | NW | 10 | 4.5 | ..... | ..... | 10n;fog | ..... | Calm | 0.25 | 6.3 | Light rain | |
| Coleman City, Texas | 28.05 | 712.5 | 29.66 | 753.4 | 63 | 17.2 | 62 | Calm | 0 | 0 | ..... | 2c | 2s | Calm | Calm | 0 | 0 | Fair | |
| Columbus, Ohio | 29.04 | 737.6 | 29.89 | 759.2 | 42 | 5.6 | 83 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 0.49 | 12.4 | Cloudy | |
| Concho, Texas | 27.90 | 708.6 | 29.51 | 749.5 | 63 | 17.2 | 78 | SW | 12 | 5.4 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Corsicana, Texas | 29.42 | 747.2 | 29.87 | 758.7 | 69 | 20.6 | 90 | S | 5 | 2.2 | ..... | 1cs | 2s | N | SW | 0 | 0 | Fair | |
| Davenport, Iowa | 29.29 | 744.0 | 29.93 | 760.2 | 42 | 5.6 | 83 | SE | 3 | 1.3 | ..... | 2cs | 0 | W | ..... | 0.01 | 0.3 | Fair | |
| Deadwood, Dakota | 25.00 | 635.0 | ..... | ..... | 44 | 6.7 | 84 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Decatur, Texas | 28.65 | 727.7 | 29.78 | 756.4 | 67 | 19.4 | 74 | SE | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0.85 | 21.6 | Clear | |
| Denison, Texas | 29.05 | 737.9 | 29.82 | 757.4 | 65 | 18.3 | 89 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Denver, Colorado | 24.47 | 621.5 | 29.69 | 754.1 | 47 | 8.3 | 48 | S | 4 | 1.8 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Des Moines, Iowa | 28.95 | 735.3 | 29.83 | 757.7 | 42 | 5.6 | 74 | Calm | 0 | 0 | ..... | 5c | Sm'e | NW | Calm | 0 | 0 | Fair | |
| Detroit, Michigan | 29.21 | 741.9 | 29.90 | 759.4 | 33 | 0.6 | 89 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.25 | 6.3 | Cloudy | |
| Dodge City, Kansas | 27.21 | 691.1 | 29.45 | 748.0 | 49 | 9.4 | 57 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.22 | 742.2 | 29.93 | 760.2 | 37 | 2.8 | 81 | SW | 1 | 0.4 | ..... | 5c | 5s;fog | W | Calm | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 29.14 | 740.1 | 29.82 | 757.4 | 35 | 1.7 | 90 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Eagle Pass, Texas | 29.03 | 737.3 | 29.75 | 755.6 | 66 | 18.9 | 79 | SE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 30.29 | 769.4 | 30.36 | 771.1 | 33 | 0.6 | 89 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 70 | 21.1 | 90 | SE | ..... | ..... | 4 | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.07 | 662.2 | ..... | ..... | 63 | 17.2 | 23 | NW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.08 | 738.6 | 29.80 | 756.9 | 37 | 2.8 | 90 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0.12 | 3.0 | Foggy | |
| Escanaba, Michigan | 29.26 | 743.2 | 29.92 | 760.0 | 35 | 1.7 | 90 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0.32 | 8.1 | Foggy | |
| Florence, Arizona | 28.31 | 719.1 | 29.91 | 759.7 | 58 | 14.4 | 53 | W | 2 | 0.9 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Fair | |
| Fort Buford, Dakota | 27.49 | 698.2 | ..... | ..... | 40 | 4.4 | 82 | SW | 6 | 2.7 | ..... | 10cs | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Fort Craig, New Mexico | 25.36 | 644.1 | 29.42 | 747.2 | 45 | 7.2 | 36 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.09 | 637.3 | 30.05 | 763.3 | 57 | 13.9 | 53 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Smoky | |
| Fort Gibson, Indian Ter | 29.32 | 744.7 | 29.84 | 757.9 | 57 | 13.9 | 47 | E | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.52 | 724.6 | 29.76 | 755.9 | 63 | 17.2 | 89 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.11 | 688.6 | ..... | ..... | 48 | 8.9 | 85 | SW | 22 | 9.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort McKavett, Texas | 27.59 | 700.8 | 29.45 | 748.0 | 65 | 18.3 | 84 | S | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0.04 | 1.0 | Clear | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.59 | 726.2 | 29.66 | 753.4 | 63 | 17.2 | 83 | S | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Stevenson, Dakota | 27.66 | 702.6 | ..... | ..... | 48 | 8.9 | 85 | SW | 7 | 3.1 | ..... | ..... | 5s | ..... | SW | 0 | 0 | Cloudy | |
| Fredericksburg, Texas | 28.22 | 716.8 | 29.71 | 754.6 | 73 | 22.8 | 63 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 29.92 | 760.0 | 29.96 | 761.0 | 70 | 21.1 | 95 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Graham, Texas | 28.73 | 729.7 | 29.73 | 755.1 | 69 | 20.6 | 85 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.31 | 744.5 | 29.97 | 761.2 | 37 | 2.8 | 81 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0.18 | 4.6 | Cloudy | |
| Indianapolis, Indiana | 29.15 | 740.4 | 29.93 | 760.2 | 43 | 6.1 | 75 | NW | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Indianola, Texas | 29.90 | 759.4 | 29.93 | 760.2 | 71 | 21.7 | 95 | S | 5 | 2.2 | ..... | ..... | 10s | ..... | S | Inap. | Inap. | Cloudy | |
| Jacksboro, Texas | 28.68 | 728.5 | 29.76 | 755.9 | 68 | 20.0 | 84 | S | 4 | 1.8 | ..... | 0 | 5ks | ..... | Calm | 0.20 | 5.1 | Fair | |
| Jacksonville, Florida | 30.05 | 763.3 | 30.07 | 763.8 | 64 | 17.8 | 83 | S | 10 | 4.5 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| Keokuk, Iowa | 29.25 | 742.9 | 29.86 | 758.4 | 46 | 7.8 | 80 | NW | 1 | 0.4 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Key West, Florida | 30.07 | 763.8 | 30.10 | 764.5 | 73 | 22.8 | 76 | SE | 8 | 3.6 | ..... | 5c;k | 0 | Calm;SE | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 29.84 | 757.9 | 29.86 | 758.4 | 57 | 13.9 | 100 | SW | 14 | 6.3 | ..... | ..... | 10n | ..... | SW | 0.30 | 7.6 | Light rain | |
| Knoxville, Tennessee | 28.96 | 735.6 | 29.90 | 761.0 | 50 | 10.0 | 93 | SW | 4 | 1.8 | ..... | 8ck | Fog | W | ..... | 0.63 | 16.0 | Foggy | |
| La Crosse, Wisconsin | 29.11 | 739.4 | 29.86 | 758.4 | 40 | 4.4 | 73 | S | 8 | 3.6 | ..... | 8ck | 0 | W | ..... | 0 | 0 | Fair | |
| La Mesilla, New Mexico | 25.93 | 658.6 | 30.08 | 764.0 | 45 | 7.2 | 61 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.39 | 746.5 | 29.71 | 754.6 | 73 | 22.8 | 76 | SE | 4 | 1.8 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Leavenworth, Kansas | 28.96 | 735.6 | 29.80 | 756.9 | 47 | 8.3 | 48 | S | 1 | 0.4 | ..... | 5cs | 0 | ..... | ..... | 0 | 0 | Fair | |
| Los Angeles, California | 29.60 | 751.8 | 29.94 | 760.5 | 53.0 | 11.7 | 93 | E | 6 | 2.7 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Louisville, Kentucky | 29.39 | 746.5 | 29.94 | 760.5 | 50 | 10.0 | 72 | NW | 4 | 1.8 | ..... | 8c | 2s | W | Calm | 0.10 | 2.5 | Cloudy | |
| Lynchburg, Virginia | 29.15 | 740.4 | 29.83 | 757.7 | 51 | 10.6 | 78 | SW | 2 | 0.9 | ..... | 0 | 2s | ..... | Calm | 0.40 | 10.2 | Clear | |
| Madison, Wisconsin | 28.93 | 734.8 | 29.93 | 760.2 | 39 | 3.9 | 82 | SE | 6 | 2.7 | ..... | ..... | Fog | ..... | Calm | 0.04 | 1.0 | Dense fog | |
| Marquette, Michigan | 29.16 | 740.7 | 29.87 | 758.7 | 38 | 3.3 | 72 | SE | 4 | 1.8 | ..... | 5c | 5s | SE | Calm | 0.03 | 0.8 | Cloudy | |
| Mason, Texas | 28.23 | 717.0 | 29.92 | 760.0 | 69 | 20.6 | 80 | SE | 3 | 1.3 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Memphis, Tennessee | 29.06 | 738.4 | 29.97 | 761.2 | 57 | 13.9 | 76 | NE | 4 | 1.8 | ..... | 0 | Sm'e | ..... | Calm | 0.12 | 3.0 | Smoky | |
| Milwaukee, Wisconsin | 29.19 | 741.4 | 29.93 | 760.2 | 36 | 2.2 | 90 | N | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 0.11 | 2.8 | Foggy | |
| Mobile, Alabama | 29.99 | 761.7 | 30.04 | 763.0 | 67 | 19.4 | 95 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Montgomery, Alabama | 29.76 | 755.9 | 29.99 | 761.7 | 66 | 18.9 | 90 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | W | 0.07 | 1.8 | Cloudy | |
| Morgantown, West Virginia | 28.75 | 730.2 | 29.79 | 756.7 | 60 | 10.0 | 79 | SW | 6 | 2.7 | ..... | ..... | 10n | ..... | SW | 0.47 | 11.9 | Light rain | |
| Mt. Washington, N. H. | 23.70 | 602.0 | 30.06 | 763.5 | 17 | − 8.3 | 100 | SE | 51 | 22.8 | ..... | ..... | Fog | ..... | SE | 0 | 0 | Foggy | |
| Nashville, Tennessee | 29.44 | 747.8 | 29.98 | 761.5 | 48 | 8.9 | 78 | Calm | 0 | 0 | ..... | 10c | 0 | Calm | ..... | 0.27 | 6.9 | Cloudy | |
| New Haven, Connecticut | 29.95 | 760.7 | 30.07 | 763.8 | 38 | 3.3 | 91 | E | 20 | 8.9 | ..... | ..... | 10n | ..... | E | 0.27 | 6.9 | Light rain | |
| New London, Connecticut | 30.09 | 764.3 | 30.14 | 765.5 | 37 | 2.8 | 95 | NE | 20 | 8.9 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | Light rain | |
| New Orleans, Louisiana | 29.95 | 760.7 | 30.01 | 762.2 | 64 | 17.8 | 94 | S | 1 | 0.4 | ..... | 0 | 2s;fg | ..... | S;Calm | 0 | 0 | Fair | |
| Newport, Rhode Island | 30.13 | 765.3 | 30.18 | 766.6 | 38.5 | 3.6 | 100 | E | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.03 | 0.8 | Light rain | |
| New York, New York | 29.73 | 755.1 | 29.91 | 759.7 | 41 | 5.0 | 91 | SE | 32 | 14.3 | ..... | ..... | 10n | ..... | NW | 0.19 | 4.8 | Light rain | |
| Norfolk, Virginia | 29.79 | 756.7 | 29.85 | 758.2 | 58 | 14.4 | 94 | S | 10 | 4.5 | ..... | 0 | 5s | ..... | SW | 0.10 | 2.5 | Fair | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. | | BAROMETER. Reduced to sea-level. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. Direction. | WIND. Velocity. | | WIND. Force. | CLOUDS. Amount. | | CLOUDS. Direction. | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | nches. | illimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10 | Up'er 0—10 | Low'r 0—10. | Upper. From— | Lower. From— | Inches. | Millimeters. | | |
| North Platte, Nebraska | 26.75 | 679.4 | 29.23 | 742.4 | 52 | 11.1 | 47 | S | 16 | 7.2 | | 5c | Sm'e | W | Calm | 0 | 0 | Fair | |
| Olympia, Washington Ter. | 30.12 | 765.0 | 30.16 | 766.1 | 43.2 | 6.2 | 92 | S | 8 | 3.6 | | | 10s | | Calm | 0.36 | 9.1 | Cloudy | |
| Omaha, Nebraska | 28.59 | 726.2 | 29.66 | 753.4 | 52 | 11.1 | 74 | SE | 8 | 3.6 | | 5c | 2s | W | Calm | 0 | 0 | Fair | |
| Oswego, New York | 29.59 | 751.6 | 29.92 | 760.0 | 39 | 3.9 | 73 | SW | 16 | 7.2 | | | 10n | | Calm | 0.11 | 2.8 | Light snow | |
| Pembina, Dakota | 28.72 | 729.5 | 29.55 | 750.6 | 35 | 1.7 | 90 | S | 6 | 2.7 | | | 10s | | W | 0 | 0 | Cloudy | |
| Philadelphia, Pa | 29.79 | 756.7 | 29.84 | 757.9 | 47 | 8.3 | 92 | S | 8 | 3.6 | | | 10s | | SW | 0.40 | 10.2 | Cloudy | |
| Phœnix, Arizona | 28.59 | 726.2 | 30.34 | 770.6 | 61 | 16.1 | 31 | E | 2 | 0.9 | | 5c | 0 | W | | 0 | 0 | Fair | |
| Pike's Peak, Colorado | 17.67 | 448.8 | 29.88 | 758.9 | 23 | — 5.0 | 47 | SW | 36 | 16.1 | | 1cs | 0 | Calm | | 0 | 0 | Clear | |
| Pioche, Nevada | 23.98 | 609.1 | 29.74 | 755.4 | 38 | 3.3 | 31 | N | 10 | 4.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 28.99 | 736 3 | 29 80 | 756.9 | 44 | 6.7 | 84 | NW | 9 | 4.0 | | | 10n | | W | 0.39 | 9.9 | Light rain | |
| Port Huron, Michigan | 29.21 | 741.9 | 29.89 | 759.2 | 32 | 0.0 | 89 | N | 10 | 4.5 | | | 10s | | Calm | 0.04 | 1.0 | Cloudy | |
| Portland, Maine | 30.23 | 767.8 | 30.28 | 769.1 | 40 | 4.4 | 91 | SE | 8 | 3.6 | | | 10s | | Calm | Inap | Inap. | Cloudy | |
| Portland, Oregon | 30.19 | 766 8 | 30.29 | 769.4 | 46.0 | 7.8 | 84 | S | 8 | 3.6 | | 0 | 5ks | | SW | 0.71 | 18.0 | Fair | |
| Prescott, Arizona | 24.59 | 624.6 | 29.95 | 760.7 | 48 | 8.9 | 36 | W | 2 | 0.9 | | 2cs | 0 | Calm | | 0 | 0 | Fair | |
| Pilot Point, Texas | 29.14 | 740.1 | 29.96 | 761.0 | 55 | 12.8 | 80 | SE | 1 | 0.4 | | Haze | Haze | | | 0.10 | 2.5 | Hazy | |
| Punta Rassa, Florida | 30.12 | 765.0 | 30.14 | 765.5 | 70 | 21.1 | 75 | E | 5 | 2.2 | | 5k | 0 | SW | | 0 | 0 | Fair | |
| Red Bluff, California | 29.86 | 758.4 | 30.23 | 767.8 | 43 | 6.1 | 83 | N | 6 | 2.7 | | | 0 | | | 0.23 | 5.8 | Clear | |
| Rio Grande City, Texas | 29.65 | 753.1 | 29.87 | 758.7 | 69 | 20.6 | 90 | SE | 8 | 3.6 | | 5cs | 0 | Calm | | 0 | 0 | Fair | |
| Rochester, New York | 29.28 | 742.4 | 29.86 | 758.4 | 35 | 1.7 | 80 | SE | 10 | 4.5 | | | 10s | | SE | 0.26 | 6.3 | Cloudy | |
| Roseburg, Oregon | 29.73 | 755.1 | 30.32 | 770.1 | 37.5 | 3.1 | 98 | SE | 1 | 0.4 | | Haze | 0 | | | 0.44 | 11.2 | Clear | |
| Sacramento, California | 30.10 | 764.5 | 30.18 | 766.6 | 58 | 11.7 | 76 | NW | 8 | 3.6 | | 0 | 0 | | | 0.07 | 1.8 | Clear | |
| St. Louis, Missouri | 29.38 | 746.2 | 29.95 | 760.7 | 51 | 10.6 | 65 | W | 1 | 0.4 | | 1ck | Sm'e | Calm | | 0 | 0 | Clear | |
| St. Marks, Florida | 30.04 | 763.0 | 30.06 | 763.5 | 63 | 17.2 | 94 | Calm | 0 | 0 | | Haze | 2s | Calm | Calm | 0 | 0 | Fair | |
| St. Paul, Minnesota | 28.91 | 734.3 | 29.74 | 755.4 | 37 | 2.8 | 75 | E | 8 | 3.6 | | 8c | 0 | W | | 0 | 0 | Fair | |
| Salt Lake City, Utah | 25.58 | 649.7 | 29.91 | 759.7 | 44 | 6.7 | 76 | N | 4 | 1.8 | | | 10ks | | W | 0.33 | 8.4 | Cloudy | |
| San Antonio, Texas | 29.20 | 741.7 | 29.76 | 755.9 | 71 | 21.7 | 85 | SE | 2 | 0.9 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| San Diego, California | 28.88 | 733.5 | 29.96 | 761.0 | 56 | 13.3 | 93 | N | 3 | 1.3 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.23 | 742.4 | 29.92 | 760.0 | 35 | 1.7 | 90 | NW | 13 | 5.8 | | | 10s | | Calm | 0 35 | 8.9 | Threatening | |
| Sandy Hook, New Jersey | 29.85 | 758.2 | 29.88 | 758.9 | 40 | 4.4 | 100 | SE | 48 | 21.5 | | | 10n | | SE | 0.73 | 18.5 | Heavy rain | |
| San Francisco, California | 30.13 | 765.3 | 30.20 | 767.1 | 52 | 11.1 | 84 | NE | 3 | 1.3 | | 0 | 0 | | | 0.03 | 2.0 | Clear | |
| Santa Fé, New Mexico | 23.13 | 587.5 | 29.67 | 753.6 | 47 | 8.3 | 48 | E | 2 | 0.9 | | 5ck | 5s | SE | S | 0 | 0 | Cloudy | |
| Savannah, Georgia | 29.94 | 760.5 | 30.03 | 762.8 | 63 | 17.2 | 78 | W | 2 | 0.9 | | | 10s | | W | 0.02 | 0.5 | Cloudy | |
| Shreveport, Louisiana | 29.72 | 754.9 | 29.93 | 760.2 | 68 | 20.0 | 95 | S | 4 | 1.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Silver City, New Mexico | 24.36 | 618.8 | 30.50 | 777.0 | 43 | 6.1 | 50 | W | 1 | 0 4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Smithville, North Carolina | 29.94 | 760.5 | 29.97 | 761.2 | 59 | 15.0 | 94 | SW | 20 | 8.9 | | | 10s | | SW | 0.12 | 3.0 | Cloudy | |
| Springfield, Massachusetts | 30.01 | 762.2 | 30.15 | 765.8 | 38 | 3.3 | 81 | E | 4 | 1.8 | | | 10n | | E | 0.07 | 1.8 | Light rain | |
| Stockton, Texas | 26.79 | 680.4 | 29.79 | 756.7 | 60 | 15.6 | 55 | SW | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.19 | 766.8 | 30.25 | 768.3 | 38 | 3.3 | 91 | SE | 14 | 6.3 | | | 10s | | SE | Inap | Inap. | Cloudy | |
| Toledo, Ohio | 29.20 | 741.7 | 29.90 | 759.4 | 38 | 3.3 | 81 | NW | 6 | 2.7 | | | 10s | | Calm | 0.31 | 7.9 | Cloudy | |
| Tucson, Arizona | 27.36 | 694.9 | 29.91 | 759.7 | 67 | 13.9 | 40 | S | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.85 | 758.2 | 30.35 | 770.9 | 44.0 | 6.7 | 68 | W | 20 | 8.9 | | 0 | 2s | | W | 0.01 | 0.3 | Fair | |
| Unalashka, Aleutian Islands | | | | | 27 | — 2.8 | 77 | Calm | | | 0 | 0 | 0 | | | 0 | 0 | Clear | |
| Uvalde, Texas | 28.99 | 736.3 | 29.77 | 756.1 | 70 | 21.1 | 80 | E | 5 | 2.2 | | | 10s | | SE | 0 | 0 | Cloudy | |
| Vicksburg, Mississipp | 29.75 | 755.6 | 30.00 | 762.0 | 69 | 20.6 | 90 | SW | 4 | 1.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Virginia City, Montana | 24.11 | 612.4 | 29.59 | 751.6 | 33 | 0.6 | 89 | Calm | 0 | 0 | | | 10s | | Calm | 0.10 | 2.5 | Cloudy | |
| Visalia, California | 29.79 | 756.7 | 30.16 | 766.1 | 52.3 | 11.3 | 87 | SW | 2 | 0.9 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Washington, D. C. | 29.71 | 754.6 | 29.82 | 757.4 | 45 | 7.2 | 92 | N | 5 | 2.2 | | | Fog | | NE | 0.18 | 4.6 | Foggy | |
| Wickenburg, Arizona | | | | | 56 | 13.3 | 69 | NW | | | 0 | 0 | 0 | | | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 29.84 | 757.9 | 29.92 | 760.0 | 61 | 16.1 | 82 | SW | 13 | 5.8 | | | 10s | | Calm | 0.09 | 2.3 | Cloudy | |
| Winnemucca, Nevada | 25.79 | 655.0 | 30.15 | 765.8 | 31 | — 0.6 | 79 | S | 9 | 4.0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Wood's Holl, Mass | 30.15 | 765.8 | 30.19 | 766.8 | 39 | 3.9 | 91 | E | 20 | 8.9 | | | 10n | | | 0.03 | 0.8 | Light rain | |
| Yankton, Dakota | 28 44 | 722.4 | 29.72 | 754.9 | 39 | 3.9 | 64 | SW | 4 | 1.8 | | 5c | 0 | NW | | 0 | 0 | Fair | |
| Yuma, Arizona | 29.62 | 752.3 | 29.78 | 756.4 | 74 | 23.3 | 25 | W | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.34 | 719.8 | 29.72 | 754.9 | 55 | 12.8 | 38 | | | | | | | | | | | | J. B. Gordon. |
| Havana, Cuba, W. I | 30.03 | 762.8 | 30.08 | 764.0 | 73 | 22.8 | 76 | Calm | 0 | 0 | | 8c | | Calm | | 0 | 0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | | | | | | | | | | | | | | | | | | | James Gall. |
| Medellin, Colombia, S. A | 25.24 | 641.1 | | | 64.2 | 17.9 | 84 | SW | 1 | 0.4 | | | 10s | | | 0.23 | 5.8 | | Thomas Herran. |
| Navassa, W. I | 29.93 | 760.2 | 30.01 | 762.2 | 70 | 26.1 | | NE | 5.7 | 2.5 | | | | | | 0 | 0 | Cloudy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.02 | 762.5 | 30.02 | 762.5 | 79 | 20.1 | 87 | E | 3 | 1.3 | | | 8ks | | | 0.390 | 9.01 | Cloudy | C. J. Hering. |
| Santiago de Cuba, W. I | | | | | | | | | | | | | | | | | | | Robert Mason. |
| St. Thomas, W. I | | | | | | | | | | | | | | | | | | | G. O. Gellich. |
| York Factory, B. A | 29.59 | 751.6 | 29.64 | 752.8 | 2.0 | —16.7 | 86 | SE | 7 | 3.1 | | 5c | 2s | S | S | Inap. | Inap. | Snowing | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,181.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,642 (?) ft., or 774.3 (?) m.; Virginia City, 5,450 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

## UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.15 | 765.8 | 52 | 11.1 | 46 | 7.8 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0.8 | 20. | ..... | ..... | Clearing..... | |
| Navy Yard, Pensacola, Fla. | 30.15 | 765.8 | 68 | 20.0 | 68 | 20.0 | 95 | WSW | 15 | 6.7 | ..... | ..... | 8 | ..... | SW | 0 | 0 | ..... | ..... | Fair..... | |
| Navy Yard, Portsmouth, N.H | 30.24 | 768.1 | 58 | 14.4 | 36 | 2.2 | 90 | SE | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy ..... | |
| Naval Hospital, Yokohama, Japan.....* | 30.02‡ | 762.5‡ | ..... | ..... | 43.5 | 6.4 | 43 | N | ..... | ..... | 6 | ..... | 8k;s | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy ..... | |
| Adams, Panama .....* | 30.00 | 762.0 | 77 | 25.0 | 76 | 24.4 | 95 | W | ..... | ..... | 1 | ..... | 8 | ..... | W | ..... | ..... | ..... | ..... | Fair ..... | |
| Alaska, N. 48° 24′, W. 123° 27′..... | 30.05‡ | 763.3‡ | ..... | ..... | 44 | 6.7 | 84 | WSW | ..... | ..... | 4 | ..... | 2 | ..... | NE | 0.22 | 5.6 | Smooth | ..... | D. clouds..... | |
| Alliance, Leghorn, Italy..... | 29.65‡ | 753.1‡ | ..... | ..... | 60 | 15.6 | 60 | W | ..... | ..... | 0-1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant..... | |
| Ashuelot, Hong-Kong, China. ...* | 30.06‡ | 763.5‡ | ..... | ..... | 66 | 18.9 | 74 | ESE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy ..... | |
| Canonicus, New Orleans, La.....* | 30.02‡ | 762.5‡ | 49 | 9.4 | 63 | 17.2 | 89 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Dense fog.... | |
| Colorado, New York, N. Y..... | 29.89 | 759.2 | 41 | 5.0 | 40 | 4.4 | 100 | E | 22 | 9.8 | ..... | ..... | 10 | ..... | E | 0.475 | 12.07 | ..... | ..... | Raining ..... | |
| Constitution Lisbon, Portugal..... | 29.94‡ | 760.5‡ | ..... | ..... | 57 | 13.9 | 52 | NW | ..... | ..... | 5 | ..... | 5 | ..... | N | ..... | ..... | ..... | ..... | Squally..... | |
| Despatch, Genoa, Italy..... | 29.58‡ | 751.3‡ | ..... | ..... | 64 | 17.8 | 78 | WSW | ..... | ..... | 2 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | ..... | Clear..... | |
| Franklin, Norfolk, Va.....* | 29.99 | 761.7 | 67 | 19.4 | 59 | 15.0 | 94 | SSW | 12 | 5.4 | ..... | ..... | 8 | ..... | W | 0.5 | 13. | ..... | ..... | Cloudy..... | |
| Gettysburg, Genoa, Italy ..... | 29.66‡ | 753.4‡ | ..... | ..... | 66 | 18.9 | 100 | SW | ..... | ..... | 1 | ..... | 2 | ..... | S;W | 0.3 | 8. | ..... | ..... | Fair ..... | |
| Hartford, Montevideo, Uruguay.* | 29.90 | 759.4 | 71 | 21.7 | 68 | 20.0 | 84 | SSE | ..... | ..... | 4 | ..... | 10 | ..... | SSE | 0.05 | 1.3 | Smooth | SSE | Threatening | |
| Lackawana, Callao, Peru.....* | 29.76‡ | 755.9‡ | ..... | ..... | 65 | 18.3 | 94 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | ..... | Foggy ..... | |
| Michigan, Erie, Pa.....† | 29.84 | 757.9 | ..... | ..... | 36 | 2.2 | 80 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast.... | |
| Monocacy, Shanghai, China.....* | 30.15‡ | 766.6‡ | ..... | ..... | 50 | 10.0 | 64 | SSE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monongahela Yokohama, Japan .....* | 30.04‡ | 763.0‡ | ..... | ..... | 46 | 7.8 | 41 | N | ..... | ..... | 5-6 | ..... | 9 | ..... | ..... | 0 | 0 | Light | S;W | Squally..... | |
| New Hampshire, Port Royal, S. C.....* | 30.14 | 765.5 | 63 | 17.2 | 61 | 16.1 | 88 | SW | 14 | 6.3 | ..... | ..... | 8 | ..... | SW | 0.15 | 3.8 | ..... | ..... | Cloudy..... | |
| Onward, Callao, Peru.....†* | 30.06 | 763.5 | ..... | ..... | 66 | 18.9 | 89 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | Long | W | Foggy..... | |
| Palos, Tientsin, China.....* | 29.92 | 760.0 | 38 | 3.3 | 38 | 3.3 | 72 | ENE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 44 | 6.7 | 64 | NE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Fair ..... | |
| Pensacola, Valparaiso, Chili..... | 30.00‡ | 762.0‡ | ..... | ..... | 65 | 18.3 | 84 | N | 8 | 1.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Plymouth, Bermuda I., North Atlantic | 30.18‡ | 766.6‡ | ..... | ..... | 66 | 18.9 | 68 | E | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant.... | |
| Powhatan, Hampton Roads, Va..... | 29.85‡ | 758.2‡ | ..... | ..... | 57 | 13.9 | 87 | SSW | ..... | ..... | 3 | ..... | 8 | ..... | SSW | 0 | 0 | Mod'ate | SSW | Fair ..... | |
| Quinnebaug, Malaga, Spain..... | 29.84‡ | 757.9‡ | ..... | ..... | 63 | 17.2 | 52 | NW | ..... | ..... | 3 | ..... | 5 | ..... | NW | ..... | ..... | ..... | ..... | Fair..... | |
| Ranger. Amoy, China..... | 30.09‡ | 764.3‡ | ..... | ..... | 68 | 20.0 | 79 | SE | ..... | ..... | 1 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | ..... | Clear..... | |
| Richmond. Aden, Arabia..... | 29.95‡ | 760.7‡ | ..... | ..... | 82 | 27.8 | 74 | ENE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear. ..... | |
| Rio Bravo, Brownsville, Texas..... | 29.88 | 758.9 | 73 | 22.8 | 73 | 22.8 | 100 | S | ..... | ..... | 2 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md... ..... | 29.82‡ | 757.4‡ | ..... | ..... | 49 | 9.4 | 93 | NNW | ..... | ..... | 0-1 | ..... | 10 | ..... | W | 0.06 | 1.5 | ..... | ..... | Light fog.... | |
| Saratoga, Hampton Roads, Va..... | 29.87‡ | 758.7‡ | ..... | ..... | 56 | 13.3 | 100 | SSW | ..... | ..... | 2-3 | ..... | 8 | ..... | ..... | Light | Light | ..... | ..... | D. clouds.... | |
| St. Louis, League Island, Pa ..... | 29.80 | 756.9 | 60 | 15.6 | 45 | 7.2 | 92 | SE | 11 | 4.9 | ..... | ..... | 10 | ..... | S | 0.6 | 15. | ..... | ..... | Cloudy ..... | |
| Supply, New York, N. Y..... | 29.92‡ | 760.0‡ | ..... | ..... | 44 | 6.7 | 100 | SE | ..... | ..... | 2-4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rainy ..... | |
| Trenton Genoa, Italy.....* | 29.60‡ | 751.8‡ | ..... | ..... | 62 | 16.7 | 61 | WSW | ..... | ..... | 0-1 | ..... | 2 | ..... | Calm | 0.04 | 1.0 | Smooth | ..... | Fair ..... | |
| Tuscarora, Chipequa Bay, Mexico. | 30.00‡ | 762.0‡ | ..... | ..... | 75 | 23.9 | 68 | NNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear ..... | |
| Wabash, Boston, Mass..... | 30.23‡ | 767.8‡ | ..... | ..... | 37 | 2.8 | 100 | SE | 16 | 7.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Snow & rain. | |
| Wyoming, Alexandria, Egypt....* | 30.02‡ | 762.5‡ | ..... | ..... | 68 | 20.0 | 90 | ESE | ..... | ..... | 1-2 | ..... | 8 | ..... | ESE | ..... | ..... | Smooth | ..... | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level; corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From — | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Colima, N. 17° 39′, W. 101° 52′..† | | 30.02‡ | 762.5‡ | 77 | 25.0 | | Calm | | | 0 | | 3 | | SSW | | Very small | ESE | D. Clouds | Capt. Whitebury |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Granada, Capt. Austin, N. 33° 10′, W. 119° 30′..† | | 30.16‡ | 766.6‡ | 57 | 13.9 | | WNW | | | 7 | | 0 | | | | Long; Heavy | WNW | Hazy | Capt. A. Fuller. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |
| S. S. Zealandia, N. 13° 10′, W. 161° 20′ | | 30.03‡ | 762.8‡ | | | | SE | | | 3 | | | | E | | Mod'ate | E | Fine | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; and no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WHITE STAR LINE MARINE SERIES.** Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, Capt. L. Meyer, N. 34° 48′, E. 139° 51′ | | 30.00‡ | 762.0‡ | 52 | 11.1 | 47 | NNE | | | 6 | | ok | | N | 0 | Mod'ate | NE | D. clouds | J. A. Thompson, 2d Off'r |
| S. S. Gaelic N. 22° 17′, E. 114° 10′..† | | 30.17‡ | 766.3‡ | | | | ENE | | | 3 | | s | | W | 0 | | | | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, N. 37° 46′, W. 148° 23′ | | 29.80‡ | 756.9‡ | 53 | 11.7 | 93 | W | | | 3–4 | | 0 | | | | 4 | WSW | Blue sky | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:36 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** Furnished by the coöperation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 43° 40,′ W. 38° 44′ | | 29.90‡ | 759.4‡ | | | | SW | | | 6 | | | | WSW | | Cross | W | Drizzling | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 45° 10′, W. 45° 00 | | 29.60‡ | 751.8‡ | 48 | 8.9 | | WSW | | | 10 | | 9 | | WSW | Heavy | Heavy | WSW | Cloudy. | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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**ALLAN LINE MARINE SERIES.**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES.** (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Hyannis Harbor, Mass. | | 30.08‡ | 764.0‡ | 42 | 5.6 | 83 | SSE | | | | | 10k | | SE | | | | Overcast | Capt. James Jorgensen. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

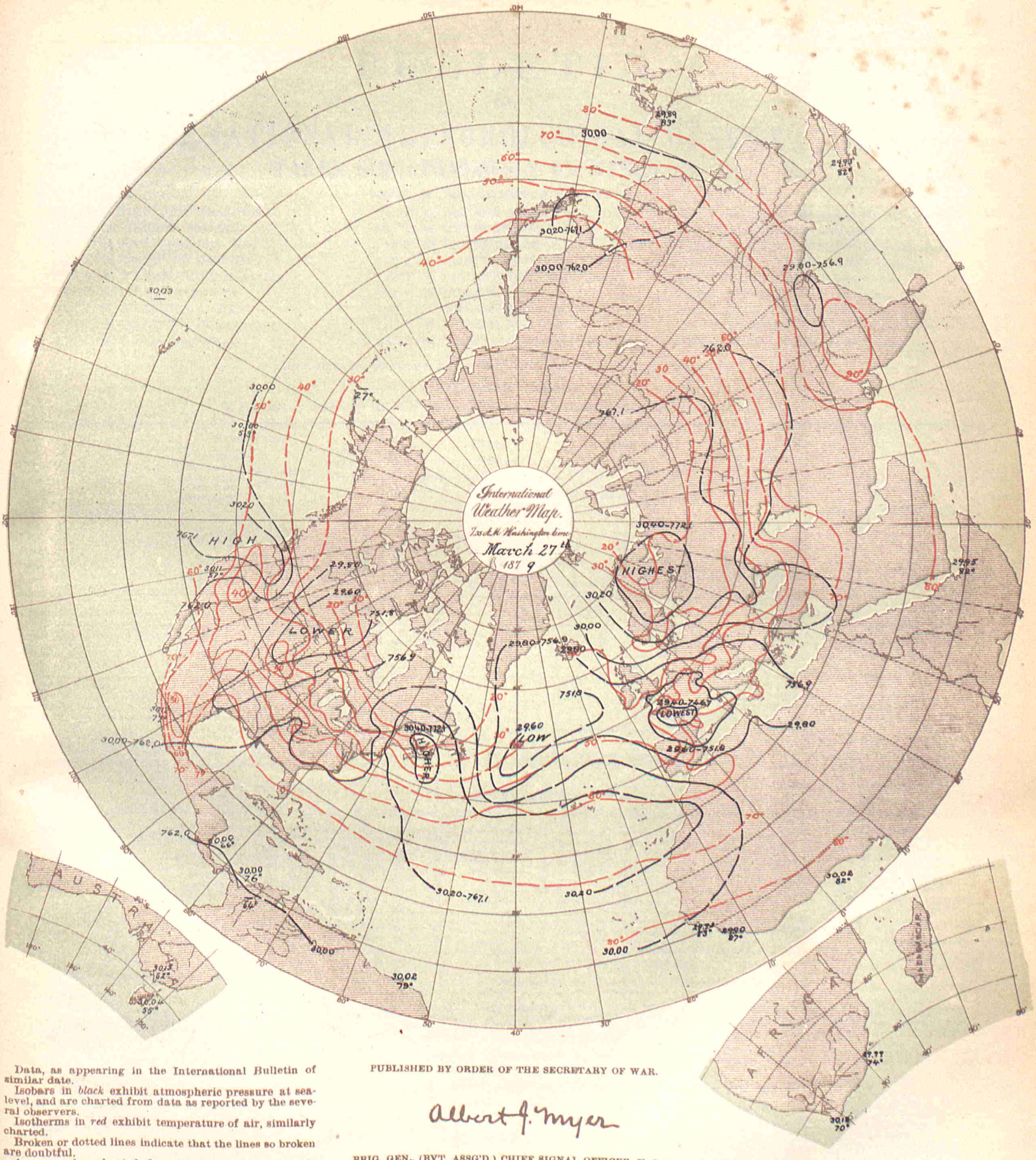
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 28, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
8:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:35 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time
1:26 P. M. CHRISTIANIA mean time.
1:38 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGEGIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer, Corrected for instrum'tal error and temperature. Inches. | Barometer, Corrected for instrum'tal error and temperature. Millimeters. | Barometer, Reduced to sea-level. Inches. | Barometer, Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 30.28 | 769.1 | 60.6 | 15.9 | 77 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | |
| Nemours | ..... | ..... | 30.15 | 765.9 | 60.4 | 15.8 | 69 | NW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Kesxuche. |
| Algiers | ..... | ..... | 29.93 | 760.3 | 52.9 | 11.6 | 73 | WNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.496 | 12.6 | Raining | Touriliere. |
| La Calle | ..... | ..... | 29.87 | 758.6 | 53.4 | 11.9 | 90 | NNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.894 | 22.7 | Raining | Foufrede. |
| Tunis | ..... | ..... | 29.69 | 754.2 | 60.3 | 15.7 | 69 | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.189 | 4.8 | Covered | Jacques. |
| Sfax | ..... | ..... | 29.83 | 757.7 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 30.06 | 763.5 | 43.7 | 6.5 | 62 | NW | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0.185 | 4.7 | Raining | Herbin. |
| Tebessa | ..... | ..... | 29.91 | 759.6 | 40.6 | 4.8 | 51 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.206 | 562 | Covered | Watrin. |
| Geriville | ..... | ..... | 30.00 | 761.9 | 40.5 | 4.7 | 90 | N | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0.035 | 0.9 | Snowing | Brugnlaux. |
| Laghouat | ..... | ..... | 30.04 | 762.9 | 50.7 | 10.4 | 77 | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.041 | 1.05 | Cloudy | Bertrand. |
| Biskra | ..... | ..... | 29.93 | 760.3 | 64.6 | 18.1 | 39 | NW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? feet; Geriville, 1,360? m., or 4,461.7? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.14 | 740.1 | 29.69 | 754.0 | 50.9 | 10.5 | 73 | S | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.06 | 738.0 | 29 85 | 758.1 | 35.6 | 2.0 | 96 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.039 | 1.0 | ..... | Dr. Wierzbiski. |
| Eperies | 28.88 | 733.6 | 29.77 | 756.2 | 44.8 | 7.1 | ..... | Calm | ..... | ..... | 0 | ..... | 10s | ..... | ..... | 0.159 | 4.80 | ..... | Julius Mikolik. |
| Gratz | 28.45 | 722.6 | 29.70 | 754.4 | 49.5 | 9.7 | 70 | N | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.161 | 4.1 | ..... | Andreas Rospini. |
| Hermannstadt | 28.34 | 719.8 | 29.76 | 756.5 | 46.9 | 8.3 | 71 | SSE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.024 | 0.60 | ..... | Prof. A. Gottschling. |
| Kremsmünster | 28.31 | 719.0 | 29.67 | 753.5 | 41.9 | 5.5 | 83 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner. |
| Lemberg | 28.86 | 733.0 | 29.8[illegible] | 759.0 | 34.2 | 1.2 | 82 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Dr. T. Stanecki. |
| Pola | 29.60 | 751.7 | 29.71 | 754.5 | 57.9 | 14.4 | 67 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.32 | 744.8 | 29.78 | 756.5 | 55.0 | 12.8 | 61 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 29.62 | 752.4 | 29.72 | 755.0 | 53.6 | 12.0 | 89 | W | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Almost clear | P. Busin. |
| Vienna | 28.98 | 736.2 | 29.71 | 754.6 | 43.9 | 6.6 | 91 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Foggy | I. R. Central Met. Obs'y |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 m., or 1,350.4 feet.; Kremsmünster, 383.6 m., or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. O. Houzeau, Director of the Royal Observatory at Brussels

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | 29.44 | 747.8 | 29.64 | 752.8 | 50.7 | 10.4 | 92 | SSW | ..... | ..... | 1 | 8 | 1 | SE | SE | 0 | 0 | ..... | Royal Observatory. |
| Furnes | 29.67 | 753.6 | 29.69 | 754.2 | 42.3 | 5.7 | 89 | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.004 | 0.1 | ..... | M. E. de Cae. |
| Maeseyck | 29.56 | 750.7 | 29.68 | 753.9 | 53.6 | 12.0 | 68 | SSE | ..... | ..... | 0 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0; instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m., Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum't'al error and temperature. Inches. | Barometer. Corrected for instrum't'al error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.62 | 752.3 | 29.73 | 755.1 | 33.5 | 0.8 | | SE | 5 | 2.2 | | | 10 | | | 0.285 | 7.24 | Snowy | W. Boswell. |
| Ardrossan | 29.63 | 752.6 | 29.65 | 753.1 | 40 | 4.4 | | SSE | | | 2 | | 7 | | | | | D. clouds | William McNeil. |
| Armagh, Observatory | | | 29.58 | 751.3 | 44.0 | 6.7 | | SE | 23 | 10.3 | | | 10 | | | | | Squally | S. Call. |
| Bidston, (Liverpool Obs.) | | | 29.71 | 754.6 | 37.6 | 3.1 | | SSE | 8 | 3.6 | | | 10 | | | | | Overcast | John Hartnup. |
| Bolton, (Sharples) | | | 29.70 | 754.4 | 36.1 | 2.3 | | ENE | 6 | 2.7 | | | 10 | | | | | Gloomy | Thomas Mackereth. |
| Bradford, Yorkshire | 29.31 | 744.5 | 29.71 | 754.6 | 36.4 | 2.4 | | NE | | | 1 | | 6 | | | 0.02 | 0.5 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.97 | 761.2 | 30.00 | 762.0 | 78.0 | 25.6 | | NE | | | 1 | | 8 | | | | | Overcast | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | | | 29.72 | 754.9 | 41.0 | 5.6 | | N | | | 1 | | 10 | | | | | Overcast | H. Todd. [C. |
| Cardington | | | 29.70 | 754.4 | 41.0 | 5.0 | | N | | | 1 | | 10 | | | | | Overcast | John McLaren. |
| Chatham, School M. E. | 29.60 | 751.8 | 29.73 | 755.1 | 41.3 | 5.2 | | NW | | | 1 | | 8 | | | | | D. clouds | Corpl. Daly, R. E. |
| Dartmoor | 28.21 | 716.5 | 29.72 | 754.9 | 34.0 | 1.1 | | S | | | 1 | | 1 | | | | | D. clouds | Alexander Watt. |
| Donaghadee | 29.60 | 751.8 | 29.64 | 752.8 | 41 | 5.0 | | SE | | | 4 | | 10 | | | | | Overcast | J. Mac Gowan. |
| Dover | 29.69 | 754.1 | 29.71 | 754.6 | 41 | 5.0 | | N | | | 4 | | 7 | | | | | Gloomy | J. Costello. |
| Falmouth, Observatory | 29.52 | 749.8 | 29.75 | 755.6 | 45.5 | 7.5 | | S | | | 3 | | 9 | | | | | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.05 | 702.3 | 29.97 | 761.2 | 75.2 | 24.0 | | E | | | 3 | | 10 | | | | | Overcast | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 87 | 30.6 | | W | | | 1 | | 3 | | | | | D. clouds | |
| Galway, Queen's College | | | 29.38 | 746.2 | 38 | 3.3 | | SE | | | 5 | | 10 | | | | | Raining | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.14 | 765.5 | 30.20 | 767.1 | 59.2 | 15.1 | | W | | | 3 | | 3 | | | | | Blue sky | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.46 | 748.3 | 29.66 | 753.4 | 35.9 | 2.2 | | NE | | | 3 | | | | | | | Threatening | D. G. Maclean. |
| Great Yarmouth | 29.67 | 753.6 | 29.68 | 753.9 | 40 | 4.4 | | NW | | | 2 | | 7 | | | | | D. clouds | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.56 | 750.8 | 29.74 | 755.4 | 42.9 | 6.1 | | NNW | | | 1 | | 5 | | | | | Blue sky | The Staff, for G. B. Airy. |
| Guernsey | 29.67 | 751.1 | 29.79 | 756.7 | 42.5 | 5.8 | | ESE | | | 2 | | 5 | | | | | D. clouds | Dr. S. E. Hoskins, F.R.S. |
| Helston | 29.73 | 755.1 | 29.85 | 758.2 | 47 | 8.3 | | S | | | 4 | | 3ck | | | 0.12 | 3.0 | Fine | M. P. Moyle. |
| Holyhead | 29.58 | 751.3 | 29.65 | 753.1 | 43 | 6.1 | | SSE | | | 4 | | 10 | | | | | Overcast | John Tilston. |
| Jersey | 29.63 | 750.0 | 29.83 | 757.7 | 43.2 | 6.2 | | WSW | | | 2 | | 5 | | | Blank | Blank | D. clouds | J. Fisher. |
| Kew, Observatory | | | | | 40.7 | 4.8 | | WNW | 5 | 2.2 | | | 9 | | | | | Misty | The Meteorological Of. |
| Leicester, Museum | 29.45 | 748.0 | 29.71 | 754.6 | 38.5 | 3.6 | | NW | | | 1 | | 10 | | | | | Overcast | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.72 | 754.9 | 29.80 | 756.9 | 63 | 17.2 | | SW | | | 1 | | 3k | | | | | Blue sky | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.54 | 750.3 | 29.64 | 752.8 | 39 | 3.9 | | ESE | | | 2 | | 2 | | | | | ¼ clouded | W. D. Penny. |
| Nassau, (Bahamas) | | | 30.14 | 765.5 | 75.5 | 24.2 | | SE | | | 1 | | 0 | | | | | Blue sky | C. S. Duncombe. |
| Nottingham, Observatory | 29.52 | 749.8 | 29.71 | 754.6 | 40.2 | 4.6 | | NNW | | | 1 | | 10k;d | | | 0 | 0 | Overcast | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.19 | 741.4 | 29.73 | 755.1 | 36.1 | 2.3 | | SW | | | 1 | | 10 | | | | | Overcast | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | | | 29.75 | 755.6 | 39 | 3.9 | | N | | | 1 | | 10 | | | | | Overcast | H. E. Bellamy. |
| Plymouth | 29.67 | 753.6 | 29.75 | 755.6 | 47.2 | 8.4 | | N | | | 2 | | 2 | | | | | D. clouds | John Merrifield. |
| Roche's Point | 29.46 | 748.3 | 29.50 | 749.3 | 43 | 6.1 | | SSE | | | 6 | | 10 | | | | | Showery | W. Kennedy. |
| Saint Ann's Head | 29.51 | 749.5 | 29.68 | 753.9 | 43 | 6.1 | | SSE | | | 3 | | 7 | | | | | Misty | John C. Walker. |
| Sandwick Manse, (Orkneys) | | | 29.74 | 755.4 | 33.4 | 0.8 | | SE | 22 | 9.8 | | | 3 | | | | | Snow-showers | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery, (Turkey) | | | 29.75 | 755.6 | 61.2 | 16.2 | | Calm | | | 0 | | 3 | | | Blank | Blank | D. clouds | W. H. Lyne. |
| Sheffield | 29.45 | 748.0 | 29.74 | 755.4 | 34.9 | 1.6 | | ESE | | | 1 | | 10 | | | 0.07 | 1.8 | Snowing | W. F. Cooper. |
| Silloth Rectory | 29.63 | 752.6 | 29.66 | 753.4 | 45.3 | 7.4 | 90 | Calm | | | 0 | | 6 | | | 0.100 | 2.54 | D. clouds | Francis Redford, A. M |
| Stonyhurst, Observatory | 29.30 | 744.2 | 29.71 | 754.6 | 38.0 | 3.3 | | SE | | | 1 | | 10 | | | | | Overcast | Rev. S. J. Perry. |
| Stratfield Turgiss | 29.53 | 750.0 | 29.75 | 755.6 | 40.8 | 4.9 | | NW | | | 0–1 | | 5 | | | | | D. clouds | C.H. Griffith, F.M.S. |
| Thurso | 29.66 | 753.4 | 29.73 | 755.1 | 33 | 0.6 | | ESE | | | 2 | | 10 | | | | | Snowing | John Trotter. |
| Truro, Royal Institution | 29.66 | 753.4 | 29.74 | 755.4 | 50 | 10.0 | | S | | | 7 | | 10 | | | | | Gloomy | W. Newcombe. |
| Valencia, Observatory | 29.32 | 744.7 | 29.34 | 745.2 | 45.1 | 7.3 | | SE | 45 | 20.1 | | | 10 | | | | | Raining | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.99 | 761.7 | 30.03 | 762.8 | 73 | 22.8 | 57 | S | 26 | 11.6 | | 0 | 0 | | | 0 | 0 | Fine | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | | | 29.62 | 752.3 | 58.0 | 14.5 | 88 | NW | | | 2 | | 9k | | | 0.4 | 10. | Cloudy | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | | | 29.71 | 754.6 | 34.0 | 1.1 | | SE | | | 2 | | 9k | S | | 0.04 | 1.0 | Cloudy | Andrew Gibb. |
| Mauritius, Observatory | | | | | | | | | | | | | | | | | | | C. Meldrum. |
| Melbourne, Observatory | 29.92 | 759.9 | 30.01 | 762.2 | 57.1 | 13.9 | 75 | S | 3 | 1.3 | | | 3 | | | 0 | 0 | Fine | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | | | 29.59 | 751.6 | 37 | 2.8 | | SSE | | | 6 | 0 | 10 | | | 0 | 0 | | J. Youngclause. |
| North Unst, (Shetland Is.) | | | 29.75 | 755.6 | 33 | 0.6 | | SE | | | 8 | | 10 | | | | | Snowing | Robert Burnet. |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

| British Marine Series. Vessels. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 33′, E. 28° 31′ | | | 29.78‡ | 756.4‡ | 56 | 13.3 | | E | | | 3 | | 5 | | | | | D. clouds | Capt. W. J. L. Wharton. |
| Brig Alliance | | | | | | | | | | | | | | | | | | | Capt. W. Scott. |
| S. S. Amanda, N. 37° 05′, E. 5° 28′ | | | 29.73‡ | 755.1‡ | 57.5 | 14.2 | | W | | | 6 | | 8 | | | | | D. clouds | Capt. B. Boyes. |
| Barque Belle-Isle, N. 35° 45′, W. 41° 39′ | | | 30.32‡ | 770.1‡ | 57 | 13.9 | | NNE | | | 4 | | 8 | | | 5 | Confused. | D. clouds | Capt. A. J. Brown. |
| Ship British Commodore | | | | | | | | | | | | | | | | | | | Capt. J. W. Thorne. |
| City of Agra, N. 38° 28′ W. 38° 55′ | | | 30.36‡ | 769.6‡ | 58 | 14.4 | | N | | | 3 | | 10 | | | 5 | NW | Overcast | Capt. Thos. Young. |
| Barque Commewyne, N. 47° 10′, W. 23° 06′ | | | 29.52‡ | 749.8‡ | 51 | 10.6 | | WNW | | | 8 | | 6 | | | | | Showery | Capt. A. Buchan. |
| Barque Fedalina, N. 24° 00′, W. 34° 00′ | | | 30.26 | 768.3 | 70 | 21.1 | | ESE | | | 4 | | 6 | | | 1 | NE | Squally | Capt. H. L. Fox. |
| Barque Mertole | | | | | | | | | | | | | | | | | | | Capt. E. W. Turner. |
| S. S. Nizam | | | | | | | | | | | | | | | | | | | Capt. Barlow. |
| S. S. Strathleven, N. 37° 25′, E. 7° 07′ | | | 29.67‡ | 753.6‡ | 56 | 13.3 | | W | | | 4 | | 10 | | | | | Overcast | Capt. C. W. Pearson. |
| S. S. Wyberton | | | | | | | | | | | | | | | | | | | Capt. W. R. McMontry. |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.29 | 667.8 | 30.01 | 762.2 | 62.2 | 16.8 | 80 | SE | ..... | ..... | 1 | 3cs | ..... | ..... | ..... | 0 | 0 | ..... | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.6 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.05 | 763.3 | 30.10 | 764.5 | 32.2 | 0.1 | 65 | ESE | ..... | ..... | 7 | ..... | 3 | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 29.90 | 759.4 | 29.92 | 759.9 | 36.0 | 2.2 | 77 | ESE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.76 | 755.8 | 29.80 | 756.9 | 16.2 | — 8.8 | 75 | ENE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Farôe) | 29.75 | 755.6 | 29.78 | 756.5 | 37.8 | 3.2 | 71 | SSE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | Snow & hail |
| Vestervig | 29.78 | 756.4 | 29.95 | 760.7 | 34.2 | 1.2 | 75 | NE | ..... | ..... | 7 | ..... | 7 | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.28 | 743.7 | 29.83 | 757.7 | 41.4 | 5.2 | 84 | WNW | ..... | ..... | 2 | ..... | 5 | ..... | N | 0.146 | 3.7 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 29.52 | 749.8 | 29.93 | 760.6 | 48.6 | 9.2 | 89 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.591 | 15.0 | Covered | Bouvallet, Director. |
| Avignon, Normal School | 29.64 | 752.4 | 29.70 | 754.4 | 61.3 | 16.3 | 56 | S | ..... | ..... | 1 | ..... | 8 | ..... | W | 0.256 | 6.5 | Very cloudy | M. Giraud, Director. |
| Bar-sur-Seine | 29.13 | 740.0 | 29.72 | 754.9 | 50.4 | 10.2 | 68 | W | ..... | ..... | 1 | ..... | 10kn | ..... | W | 0.201 | 5.1 | Covered | C. Saillard, Director. |
| Beauvais, Normal School | 29.41 | 747.9 | 29.74 | 755.3 | 42.3 | 5.7 | 88 | NW | ..... | ..... | 2 | ..... | 10 | ..... | NW | 0.807 | 20.50 | Covered | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 28.77 | 730.8 | 29.06 | 738.3 | 56.1 | 13.4 | 52 | SW | ..... | ..... | 2 | ..... | 2 | ..... | SW | 0 | 0 | Slightlycl'dy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.85 | 732.8 | 29.76 | 755.8 | 56.8 | 13.8 | 55 | S | ..... | ..... | 2 | ..... | ck | SW | SW | 0.16 | 4. | ..... | M. Marlot, Director. |
| Bourges, Normal School | 29.17 | 741.0 | 29.73 | 755.2 | 47.5 | 8.6 | 86 | NW | ..... | ..... | 4 | ..... | 10 | NW | NW | 0.256 | 6.5 | Covered | A. Waquet, Director. |
| Brest, Naval Observatory | 29.52 | 749.9 | 29.77 | 756.1 | 53.6 | 12.0 | 65 | SW | ..... | ..... | 2 | ..... | 3 | ..... | N | 0.187 | 4.75 | ..... | M.de Rermares, Director |
| Carcassonne, Normal School | 29.42 | 747.2 | 29.84 | 757.9 | 45.0 | 7.2 | 94 | W | ..... | ..... | 3 | ..... | 5 | NW | W | 0.16 | 4. | Cloudy | September, Director. |
| Caen, Normal School | 29.72 | 754.9 | 29.80 | 756.8 | 42.1 | 5.6 | 68 | NNW | ..... | ..... | 1 | ..... | 5 | ..... | NNW | 0 | 0 | Cloudy | M. Lair, Director. |
| Chartres, Normal School | 29.15 | 740.4 | 29.69 | 754.1 | 41.0 | 5 | 87 | N | ..... | ..... | 3 | ..... | 10 | ..... | SE | 0.94 | 24. | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.37 | 746.1 | 29.69 | 754.1 | 49.5 | 9.7 | 62 | SW | ..... | ..... | 3 | ..... | 2 | NW | NW | ..... | ..... | Slightly cl'dy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.85 | 720.0 | 29.71 | 754.6 | 47.8 | 8.8 | 78 | SW | ..... | ..... | 1 | ..... | 10 | ..... | W | 0.209 | 5.3 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.80 | 731.6 | 29.66 | 753.3 | 51.3 | 10.7 | 72 | ESE | ..... | ..... | 1 | ..... | 5kn | ..... | ESE | 0 | 0 | Very cloudy | Dr. Coulet, Director. |
| Commune de Gréasque* | 28.60 | 726.5 | 29.74 | 755.5 | 52.7 | 11.5 | 61 | NW | ..... | ..... | 2 | ..... | 8 | ..... | SW | 0.051 | 1.3 | ¾ covered | M. Kina, Director. |
| Grenoble, Normal School | 28.88 | 733.6 | 29.64 | 752.8 | 55.0 | 12.8 | 57 | NW | ..... | ..... | 3 | ..... | 5k | SW | ..... | 0.063 | 1.60 | Cloudy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.65 | 753.2 | 29.87 | 758.7 | 48.0 | 7.8 | 86 | NNW | ..... | ..... | 1 | ..... | 8 | ..... | NNW | 0.157 | 4.0 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.50 | 749.4 | 29.82 | 757.3 | 44.1 | 6.7 | 71 | NW | ..... | ..... | 3 | ..... | 8 | ..... | NW | 0.187 | 4.75 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 28.77 | 730.8 | 29.69 | 754.0 | 50.3 | 13.5 | 55 | W | ..... | ..... | 2 | ..... | 5 | ..... | W | 0 | 0 | Cloudy | Baudry, Director. |
| Lorient, Naval Observatory | 29.76 | 755.9 | 29.80 | 758.4 | 50.7 | 10.4 | 82 | SW | ..... | ..... | 2 | ..... | ..... | ..... | SW | 0.173 | 4.4 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galsin, Director |
| Mirecourt, Normal School | 28.61 | 726.8 | 29.71 | 754.5 | 55.0 | 12.8 | 70 | S | ..... | ..... | 1 | ..... | lr | ..... | N | 0 | 0 | ..... | M. Barbier, Director. |
| Nismes, Normal School | 29.46 | 748.3 | 29.66 | 753.4 | 59.4 | 15.2 | 55 | W | ..... | ..... | 1 | ..... | 2 | ..... | W | 0.28 | 7. | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 28.61 | 726.7 | 29.68 | 753.8 | 48.2 | 9 | 86 | N | ..... | ..... | 1 | ..... | 10 | N | N | 0.47 | 12. | Raining | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.80 | 630.0 | ..... | ..... | 31.6 | — 0.2 | 100 | W | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.150 | 3.8 | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.83 | 757.7 | 29.86 | 758.5 | 49.8 | 9.9 | 85 | NW | ..... | ..... | 1 | ..... | 10 | NW | NW | 0.28 | 7. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.66 | 753.1 | 29.74 | 755.3 | 41.9 | 5.5 | 76 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.008 | 0.2 | Covered | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.78 | 756.5 | 29.82 | 757.3 | 45.3 | 7.4 | 66 | NW | ..... | ..... | 2 | ..... | 1 | NW | NW | 0.524 | 13.30 | Clear | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.54 | 750.4 | 29.71 | 754.6 | 43.0 | 6.1 | 92 | WNW | ..... | ..... | 2 | ..... | ..... | ..... | NW | 0.437 | 11.1 | Rainy | E. Renou, Director. |
| Tarbes, Normal School | 28.72 | 729.4 | 29.80 | 756.8 | 53.6 | 12 | 54 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.39 | 10. | Raining | T. Huguet, Director. |
| Versailles Observatory | 29.23 | 742.5 | 29.72 | 755.0 | 40.3 | 4.6 | 90 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.608 | 15.44 | Raining | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 28.93 | 734.7 | 29.66 | 753.3 | 55.4 | 13 | 77 | NW | ..... | ..... | 1 | ..... | 2 | ..... | S | 0.08 | 2. | Slightly cl'dy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.85 | 758.3 | 29.88 | 759.0 | 78.8 | 26 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marcl ès |
| Lyons Obs'y, (Park Station) | 29.07 | 738.3 | 29.08 | 753.8 | 52.7 | 11.5 | 55 | NW | ..... | ..... | 1 | ..... | 8 | ..... | SW | 0.484 | 12.3 | Covered | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 24.59 | 624.6 | 29.91 | 759.6 | 36.5 | 2.5 | 80 | W | 24.2 | 10.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.69 | 754.1 | 57.6 | 14.2 | 78 | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 1.476 | 37.5 | Rainy | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.43 | 747.5 | ..... | ..... | 42.1 | 5.6 | 92 | NW | ..... | ..... | 3 | ..... | 10 | ..... | NW | 0.610 | 15.5 | ..... | Marié Davy, Director. |
| Perpignan | 29.08 | 738.5 | 29.78 | 756.5 | 54.3 | 12.4 | 54 | NW | 35.3 | 15.8 | ..... | ..... | 7 | ..... | NW | 0.295 | 7.5 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.21 | 564.2 | ..... | ..... | 10.2 | — 8.8 | ..... | WNW | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 1.819 | 46.2 | Snowy | Gen'l de Nansouty. |
| Toulouse, Observatory | 29.16 | 740.6 | 29.88 | 759.0 | 43.9 | 6.6 | 97 | WSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.555 | 14.1 | Rainy | M. Mercadier Juller. |
| Tours | 29.64 | 752.8 | 29.84 | 757.8 | 46.4 | 8.0 | 72 | N | ..... | ..... | 2 | ..... | 10 | ..... | WNW | 0.256 | 6.5 | ..... | Cousin-Marquete. |
| Zi-Ka-Wei, (near Shanghai) | 29.83 | 757.6 | 29.85 | 758.2 | 57.4 | 14.1 | 80 | SE | 20.4 | 9.1 | ..... | 3ckjhs | ..... | W | ..... | 0 | 0 | Fair | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Gréasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a.m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p.m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,580.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,360 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

1879.—March 28.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.89 | 733.7 | 29.72 | 754.9 | 43.7 | 6.5 | 70 | E | | | 4 | | 10 | E | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.91 | 759.6 | 30.08 | 764.1 | 37.4 | 3.0 | 62 | E | | | 4 | | 8 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.37 | 745.9 | 29.89 | 759.3 | 33.6 | 0.9 | 88 | ENE | | | 2 | | 10 | | | | | Rain & snow | Royal University Obs'y |
| Carlsruhe | 29.28 | 743.6 | 29.71 | 754.5 | 47.7 | 8.7 | 67 | NE | | | 2 | | 10 | E | | 0 | 0 | | Albert Sens. |
| Cassel | 29.16 | 740.6 | 29.76 | 755.9 | 45.1 | 7.3 | 62 | ENE | | | 3 | | 4 | WSW | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.50 | 749.4 | 29.67 | 753.5 | 50.2 | 10.1 | 55 | SE | | | 3 | | 5cs | | | 0 | 0 | | Director Losa. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.38 | 746.3 | 29.75 | 755.7 | 44.2 | 6.8 | | SE | | | 1 | | 10 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.27 | 718.0 | 29.71 | 754.7 | 44.2 | 6.8 | 72 | SSW | | | 3 | | 10 | SSW | | 0.220 | 5.6 | | M. Wilhelm. |
| Hamburg | 29.81 | 757.2 | 29.88 | 759.0 | 39.9 | 4.4 | 56 | E | | | 5 | | 2s | | | 0 | 0 | Fair | Captain F. Hegemann. |
| Kiel | 29.92 | 759.9 | 29.93 | 760.3 | 31.5 | — 0.4 | 67 | ENE | | | 5 | | 4 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.09 | 764.2 | 30.17 | 766.4 | 34.7 | 1.5 | 54 | E | | | 5 | | 2 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 30.01 | 762.3 | 36.5 | 2.5 | | E | | | 4 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.40 | 746.7 | 29.83 | 757.7 | 36.5 | 2.5 | 70 | E | | | 3 | | 10 | E | | 0 | 0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 30.21 | 767.2 | 30.25 | 768.4 | 30.2 | — 1.0 | 52 | E | | | 5-6 | | 0 | | | | | | Skalweit. |
| Neufahrwasser | 30.13 | 765.3 | 30.15 | 765.7 | 32.0 | 0.0 | 58 | ESE | | | 5 | | 9 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.69 | 754.0 | 29.99 | 761.7 | 34.5 | 1.4 | 72 | E | | | 6 | | 10 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.17 | 741.0 | 29.72 | 754.9 | 50.9 | 10.5 | 64 | S | | | 1 | | 10 | | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 28.73 | 729.7 | 29.68 | 753.8 | 45.5 | 7.5 | 65 | N | | | 1 | | 10 | | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.13 | 740.0 | 29.65 | 753.1 | 52.5 | 11.4 | 62 | SW | | | 6 | | 4 | | | 0 | 0 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.19 | 716.1 | 29.72 | 755.0 | 40.1 | 4.5 | 73 | E | 2 | 1 | | | 10 | | SE | 0 | 0 | Foggy | Dr. Van Bebber. |
| Wustrow, Naval School | 29.95 | 760.8 | 29.98 | 761.4 | 35.2 | 1.8 | 93 | E | | | 4 | | 8s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.9 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m.; local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.39 | 746.4 | 29.77 | 756.2 | 67.8 | 19.9 | | S | | | 1.0 | | | | | | | Clear. | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Jurrachee | 29.87 | 758.6 | 29.92 | 759.9 | 79.5 | 26.4 | 48 | NW | 14 | 6.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Kussa | 29.85 | 758.4 | 29.81 | 757.1 | 83.6 | 34.2 | 10 | NNW | 8.3 | 3.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.82 | 757.4 | 29.86 | 758.4 | 82.2 | 27.9 | 65 | NNW | 17 | 7.3 | | | 10 | | WSW | 0 | 0 | Overcast | |
| Lahore | 29.07 | 738.4 | 29.81 | 757.1 | 85.0 | 29.4 | 22 | W | 8.7 | 1.6 | | | 4 | | | 0 | 0 | Blue sky | |
| Belgaum | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.87 | 733.2 | 29.75 | 755.7 | 86.2 | 30.1 | 18 | NW | 2.4 | 1.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Agra | 29.22 | 742.1 | 29.77 | 756.1 | 93.6 | 34.2 | 13 | SW | | | | | | | | 0 | 0 | | |
| Nagpur | 28.75 | 730.3 | | | | | | NW | 2.4 | 1.1 | | | 4 | NE | | 0 | 0 | D. clouds | |
| Lucknow | 27.36 | 745.7 | 29.73 | 755.1 | 90.3 | 32.4 | 33 | WNW | 4.0 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.44 | 747.7 | 29.74 | 755.4 | 94.1 | 34.5 | 27 | NW | 3.1 | 1.4 | | | 3 | W | | 0 | 0 | D. clouds | |
| Patna | 29.60 | 749.3 | 29.67 | 753.7 | 95.3 | 35.2 | 18 | W | 5.7 | 2.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.73 | 704.4 | 29.70 | 754.5 | 86.8 | 30.4 | 22 | NW | 10.3 | 4.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.69 | 754.0 | 29.77 | 756.1 | 87.4 | 30.8 | 60 | SSE | 3.7 | 1.6 | | | | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.72 | 755.0 | 29.75 | 755.5 | 88.4 | 31.3 | 42 | SSW | 7.0 | 3.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.29 | 744.0 | 29.68 | 753.7 | 85.3 | 29.6 | 46 | NE | 5.8 | 2.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.72 | 755.0 | 29.82 | 757.3 | 81.7 | 27.6 | 83 | S | 6.2 | 2.8 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.44 | 747.9 | 29.78 | 756.5 | 78.9 | 23.8 | 83 | Calm | 1.6 | 0.7 | | | 10 | W | W | 0.16 | 4.1 | D. clouds | |
| Jubbulpore | 28.45 | 726.6 | 29.78 | 756.4 | 93.1 | 33.9 | 17 | W | 2.8 | 1.2 | | | 10 | E | | 0 | 0 | Overcast | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 7,(20 ft., or 812.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.31 | 744.4 | 29.72 | 754.9 | 54.9 | 12.7 | 66 | SW | 0.7 | 0.3 | ..... | ..... | 6 | ..... | ..... | 0.118 | 3.0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.19 | 741.3 | 29.71 | 754.5 | 48.9 | 9.4 | 91 | E | ..... | ..... | 2 | ..... | 10 | E | ..... | 0.421 | 10.7 | ..... | Prof. Schiaparelli. |
| Padua | 29.61 | 752.2 | 29.72 | 755.0 | 52.5 | 11.4 | 79 | ESE | 6.3 | 2.8 | ..... | ..... | 10 | ..... | ..... | 0.008 | 0.2 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.79 | 731.3 | 29.70 | 754.3 | 47.8 | 8.8 | 72 | N | 3.8 | 1.7 | ..... | ..... | 10 | E | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.49 | 749.1 | 29.69 | 754.0 | 55.0 | 12.8 | 72 | N | 8.1 | 1.4 | ..... | ..... | 8 | SW | ..... | 1.161 | 29.5 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.78 | 705.7 | 29.69 | 754.2 | 46.4 | 8.0 | 68 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.469 | 11.9 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.63 | 752.6 | 29.68 | 753.9 | 55.0 | 12.8 | 86 | E | 10.5 | 4.7 | ..... | ..... | 10 | S | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.44 | 747.7 | 29.69 | 754.2 | 56.8 | 13.6 | 87 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.307 | 7.8 | ..... | Cav. F. Meucci |
| Leghorn | 29.57 | 751.1 | 29.65 | 753.2 | 55.9 | 13.3 | 74 | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.709 | 18.0 | ..... | Prof. P. Monte. |
| Rome | 29.54 | 750 4 | 29.72 | 754.8 | 58.3 | 14.6 | 73 | S | 8.1 | 3.6 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.49 | 749.1 | 29.74 | 755.5 | 62.2 | 16.8 | 69 | SW | 6.3 | 2.8 | ..... | ..... | 6 | SSW | ..... | 0.016 | 0.4 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.88 | 733.6 | 29.76 | 756.0 | 62.2 | 16.8 | 78 | NE | 0.7 | 0.3 | ..... | ..... | 2 | ..... | ..... | 0.339 | 8.6 | ..... | Prof. D. Conti. |
| Cagliari | 29.47 | 748.5 | 29.66 | 753.4 | 62.6 | 17.0 | 66 | SE | ..... | ..... | 2 | ..... | 8 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.52 | 749.7 | 29.77 | 756.1 | 59.7 | 15.4 | 70 | NE | 2.5 | 1.1 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.68 | 753.9 | 29.76 | 755.8 | 65.3 | 18.5 | 53 | ENE | 4.9 | 2.2 | ..... | ..... | 6 | WNW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.23 | 742.4 | 29.78 | 756.5 | 59.0 | 15.0 | 62 | NE | 3.1 | 1.4 | ..... | ..... | 7 | ..... | ..... | 0.028 | 0.7 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.13 | 765.3 | 30.15 | 765.8 | 47.6 | 8.7 | 85 | NNW | 2.8 | 1.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Fair | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.91 | 759.7 | 30.12 | 765.0 | 50.1 | 10.1 | 75 | SE | 0.7 | 0.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 30.01 | 762.2 | 30.08 | 764.0 | 50.8 | 10.4 | 75 | SSW | 5.4 | 2.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the cooperation of Senor Mariano Barcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | 30.19 | 766.9 | 43.7 | 6.5 | 52 | Calm | ..... | ..... | 0 | 6 | ..... | SW | ..... | 0 | 0 | ⅛ clouded... | P. Ceballos. |
| Guadalajara | 25.10 | 637.4 | 30.20 | 767.3 | 57.4 | 14.1 | 70 | NW | ..... | ..... | 1 | 2c | 1s | ..... | ..... | 0 | 0 | Foggy | Prof. L. Perez. |
| Leon | 24.45 | 621.1 | 30.14 | 765.6 | 50.9 | 10.5 | 35 | Calm | 0 | 0 | ..... | 2c | 0 | ..... | ..... | 0 | 0 | Clear | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.08 | 586.3 | ..... | ..... | 50.7 | 10.4 | 60 | S | ..... | ..... | 1 | 2cs | 0 | ..... | ..... | 0 | 0 | Fair | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | 29.87 | 758.8 | 73.8 | 23.2 | 31 | S | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | M. V. de Leon, M. E. |
| Tlacotalpam | 29.86 | 758.5 | 30.10 | 764.5 | 68.0 | 14.4 | 53 | WSW | ..... | ..... | 1 | 5 | 0 | W | ..... | 0 | 0 | ⅛ clouded... | M. M. Chazaro. |
| San Luis Potosi | 24.15 | 613.6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.41 | 594.5 | 30.17 | 766.3 | 44.6 | 7.0 | 56 | ENE | 4.5 | 2.0 | ..... | ..... | 1 | ..... | WSW | 0 | 0 | ..... | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.41 | 721.6 | 30.09 | 764.3 | 70.3 | 21.3 | 53 | NE | ..... | ..... | 2 | 0 | 3 | ..... | SW | 0 | 0 | ⅛ clouded... | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.66 | 753.4 | 29.66 | 753.4 | 47.1 | 8.4 | ..... | SSW | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.220 | 5.6 | ..... | |
| Groningen | 29.69 | 754.0 | 29.74 | 755.4 | 42.1 | 5.6 | ..... | ESE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.68 | 753.8 | 29.68 | 753.8 | 41.7 | 5.4 | ..... | E | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.63 | 752.6 | 29.63 | 752.6 | 51.1 | 10.6 | 72 | Calm | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.63 | 752.7 | 29.66 | 753.9 | 47.7 | 8.7 | 63 | SE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.03 | 762.8 | 30.09 | 764.2 | 34.9 | 1.6 | 46 | SE | 6.0 | 2.7 | ..... | ..... | 1 | ..... | ..... | 0.031 | 0.8 | ..... | |
| Brönö | 30.30 | 769.5 | 30.34 | 770.5 | 28.4 | — 2.0 | 60 | S | 18 | 8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Light snow. | |
| Christiania | 30.21 | 767.2 | 30.36 | 771.2 | 29.1 | — 1.6 | 56 | ENE | 11 | 5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | | |
| Tromsö | 30.32 | 770.1 | 30.36 | 771.2 | 28.0 | — 2.2 | 71 | SW | 7 | 3 | ..... | ..... | 0 | ..... | ..... | 0 | .0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.04 | 763.0 | 30.23 | 767.9 | 61.9 | 16.6 | 81 | W | 8.1 | 3.6 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.17 | 740.8 | 30.20 | 767.1 | 54.9 | 12.7 | 57 | NW | 13.0 | 5.8 | ..... | ..... | 5 | NW | ..... | 0.047 | 1.2 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 29.89 | 759.3 | 29.98 | 761.5 | 64.0 | 17.8 | 57 | ESE | 4.9 | 2.2 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.91 | 759.8 | 30.27 | 768.9 | 55.2 | 12.9 | 70 | NW | 12.5 | 5.6 | ..... | ..... | 9 | ..... | ..... | 0.004 | 0.1 | Raining | The Staff. |
| Ponta Delgada, (Azores) | 30.23 | 767.8 | 30.30 | 769.6 | 59.7 | 15.4 | 73 | WSW | 11.9 | 5.3 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | ..... | ..... | 30.04 | 763.0 | 82.0 | 27.8 | ..... | SE | ..... | ..... | 4 | ..... | 6 | ..... | SE | 3 | SE | Gloomy | A. J. de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. T. d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto de S. Jose de Bissao, Senegambia | ..... | ..... | 29.91 | 759.7 | 84.2 | 29.0 | ..... | ENE | ..... | ..... | 1 | ..... | 9 | ..... | E | 1 | ENE | Overcast | A. Ferreira, 2d Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | 29.75 | 755.6 | 86.7 | 30.4 | ..... | W | ..... | ..... | 2 | ..... | 3 | ..... | W | ..... | ..... | D. clouds | F. Teixeira da Silva, Com'd't. L. Ribeiro de Costa, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Tejo, Macao, China | ..... | ..... | 30.04 | 763.0 | 68.9 | 20.5 | ..... | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 1 | ..... | Blue sky | J. M. T. Guimaraes, Com'd't. |
| Duque da Terceira, Santiago, Cape Verd I. | ..... | ..... | 30.26 | 768.5 | 80.6 | 27. | ..... | NE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 2 | ..... | Blue sky | C.C.da Fonseca Ferreira, Com'd't |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.57 | 751.0 | 30.01 | 762.2 | 30.4 | — 0.9 | 94 | E | 16 | 7 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | Astronomical Obs. |
| Wilna | 29.83 | 757.6 | 30.27 | 768.9 | 28.9 | — 1.7 | 61 | ESE | 2 | 1 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 30.19 | 766.7 | 30.44 | 773.3 | 28.9 | — 1.7 | 60 | ENE | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.44 | 773.3 | 30.46 | 773.7 | 30.2 | — 1.0 | 59 | ENE | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.48 | 748.8 | 30.15 | 765.9 | 28.4 | — 2.0 | 84 | E | 4 | 2 | ..... | ..... | 10ks;n | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.97 | 761.2 | 30.04 | 763.0 | 46.6 | 8.1 | 61 | ENE | 13 | 6 | ..... | ..... | 7cs | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.01 | 762.3 | 30.03 | 762.8 | 43.2 | 6.2 | 90 | ENE | 9 | 4 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.75 | 755.7 | 30.34 | 770.5 | 26.6 | — 3.0 | 78 | SE | 9 | 4 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | Light snow. | Meteorological Obs. |
| Lugan | 29.91 | 759.6 | 30.11 | 764.9 | 38.8 | 3.8 | 67 | NE | 4 | 2 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.45 | 773.5 | 30.47 | 774.0 | 32.7 | 0.4 | 78 | W | 9 | 4 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Capt. Sselwerstow. |
| Tiflis | 28.60 | 726.3 | 29.98 | 761.5 | 68.2 | 20.1 | 32 | Calm | 0 | 0 | ..... | ..... | 2cs | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.12 | 765.2 | 30.04 | 763.1 | 51.6 | 10.9 | 53 | NW | 7 | 3 | ..... | ..... | 2s | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.73 | 755.1 | 30.24 | 768.0 | 25.9 | — 3.4 | 71 | NE | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.98 | 761.6 | 30.27 | 768.8 | 28.6 | — 1.9 | 55 | NE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.04 | 737.6 | 30.04 | 763.0 | 29.7 | — 1.3 | 61 | W | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.59 | 751.6 | 29.82 | 757.4 | 68.7 | 20.4 | 39 | Calm | 0 | 0 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.29 | 718.6 | 29.98 | 761.5 | 59.0 | 15.0 | 91 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Teich, A. M. |
| Barnaul | 29.39 | 746.4 | 29.91 | 759.8 | 26.1 | — 3.3 | 84 | SW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Meteorological Obs. |
| Yeniseisk | 29.67 | 753.6 | 29.98 | 761.5 | 18.9 | — 7.3 | 68 | SSE | 2 | 1 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marks. |
| Pekíng, (China) | 29.62 | 752.4 | 29.76 | 756.0 | 52.7 | 11.5 | 48 | Calm | 0 | 0 | ..... | ..... | 1c | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.84 | 758.0 | 29.94 | 760.5 | 33.1 | 0.6 | 92 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | 29.63 | 752.6 | 29.72 | 754.8 | 11.1 | —11.6 | 75 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount— and generally the kind of cloudiness— without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.69 | 754.1 | 29.80 | 756.8 | 58.6 | 14.8 | 48 | SSW | 4:5 | 2.00 | ..... | ..... | 2k;ck | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 29.98 | 761.5 | 30.04 | 763.0 | 53.8 | 12.1 | 73 | NW | 9.8 | 4.39 | ..... | 0 | 10? | ..... | ..... | 0.157 | 4.0 | Clear? | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.02 | 686.4 | ..... | ..... | 46.4 | 8.0 | 72 | SW | 7.8 | 3.48 | ..... | 0 | 8 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez |
| Madrid, Royal Osservatory | 27.80 | 706.1 | ..... | ..... | 49.3 | 9.6 | 49 | W | 18.6 | 8.33 | ..... | 1 | 6 | NW | ..... | 0.067 | 1.7 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.81 | 757.1 | 29.96 | 760.9 | 61.7 | 16.5 | 47 | NNW | 9.9 | 4.46 | ..... | 3 | 2 | SE | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.11 | 739.4 | 30.02 | 762.5 | 50.4 | 10.2 | 98 | SW | 8.1 | 3.6 | ..... | 0 | 10 | ..... | ..... | 0.181 | 4.6 | Raining | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.07 | 663.9 | 30.14 | 765.6 | 70.7 | 21.5 | 86 | E | 4.9 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.82 | 757.5 | 29.87 | 758.8 | 84.0 | 28.8 | 65 | SE | 2.7 | 1.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.16 | 766.0 | 30.26 | 768.6 | 56.8 | 13.8 | 65 | WNW | 17.1 | 7.6 | ..... | 0 | 4 | ..... | NW | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I | 29.98 | 761.4 | 30.07 | 763.7 | 77.7 | 25.4 | 84 | S? | 0 | 0 | ..... | 5ks | 6k | S | S | 0 | 0 | Cloudy | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.55 | 776.0 | 30.59 | 777.0 | 17.2 | — 8.2 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.44 | 773.2 | 30.49 | 774.5 | 36.3 | 2.4 | 67 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.48 | 774.2 | 30.53 | 775.5 | 32.4 | 0.2 | 46 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 30.26 | 768.5 | 30.43 | 773.0 | 27.7 | — 2.4 | 87 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.028 | 0.7 | Snowing | |
| Wisby | 30.23 | 767.7 | 30.28 | 769.2 | 29.5 | — 1.4 | 84 | ESE | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.37 | 771.5 | 30.45 | 773.4 | 27.7 | — 2.4 | 67 | E | 8.7 | 3.9 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.24 | 717.4 | 29.67 | 753 6 | 53.8 | 12.1 | 44 | S | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0.020 | 0.5 | Cloudy ..... | The Observatory. |
| Zurich | 28.08 | 713.1 | 29.73 | 755.2 | 47.7 | 8.7 | 72 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.079 | 2.0 | Rainy ..... | The Observatory. |
| ..... | | | | | | | | | | | | | | | | | | | |
| ..... | | | | | | | | | | | | | | | | | | | |
| ..... | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —6.9 mm.; Thermometer, +2.7 Cent.; Relative Humidity, —15 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.80 | 757.0 | 59.0 | 15.0 | 67 | SE | 3 | 1.5 | ..... | ..... | 2 | ..... | SW | 0.532 | 13.5 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.29 | 769.4 | 73.0 | 22.8 | ..... | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.80 | 756.9 | 61.3 | 16.3 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.69 | 754.1 | 29.80 | 757.0 | 76.1 | 24.5 | 68 | NE | ..... | ..... | 1 | 8ck | ..... | ..... | ..... | 0 | 0 | D clouds | Prof. C. V. A. Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.32 | 770.1 | 30.39 | 771.9 | 22.7 | — 5.2 | 79 | Calm | 0 | 0 | ..... | 1c | 4n | ..... | ..... | 0 | 0 | Fair | Hon. J Ferguson. |
| Brockville, Ontario | 29.89 | 759.2 | 30.20 | 767.1 | 35 | 1.7 | ..... | Calm | 0 | 0 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 30.35 | 770.9 | 30.42 | 772.6 | 25 | — 3.9 | 85 | Calm | 0 | 0 | ..... | 5k | 5ks | E | E | 0 | 0 | Fair | G. A. Blair. |
| Charlottetown, P. E. Island | 30.36 | 771.1 | 30.40 | 772.1 | 27 | — 2.8 | 80 | SE | 5 | 2.2 | ..... | 5c | 2s | ..... | SE | 0 | 0 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.96 | 760.7 | 30.15 | 766.8 | 34.5 | 1.4 | 92 | E | ..... | ..... | 1 | 0 | 7s | ..... | ..... | 0 | 0 | Cloudy | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | 29.92 | 760.0 | 29.96 | 761.0 | 44.3 | 6.8 | 100 | Calm | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.75 | 19.1 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 30.27 | 768.8 | 30.30 | 769.6 | 33 | 0 6 | 95 | W | 5 | 2.2 | ..... | ..... | 10n | ..... | W | 0.02 | 0.5 | Light snow | J. McWilliams. |
| Fredericton, N. B | 30.31 | 769.9 | 30.38 | 771.6 | 28.7 | — 1.8 | 63 | N | 1 | 0.4 | ..... | 10ck;cs | 0 | W | ..... | 0 | 0 | Cloudy | Prof. Harrison. |
| *Fort Garry, Manitoba | 28.96 | 735.6 | 29.81 | 757.2 | 32 | 0.0 | 100 | NW | 4 | 1.8 | ..... | 0 | 2ks | ..... | NW | 0.210 | 5.33 | Fair | James Stewart. |
| Granton, Ontario | 29.95 | 737.9 | 30.19 | 766.8 | 33 | 0.6 | ..... | S | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | James Grant. |
| *Halifax, N. S | 30.17 | 766.3 | 30.32 | 770.1 | 32 | 0.0 | 90 | E | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | F. Allison, M. A. |
| Hamilton, Ontario | 29.85 | 758.2 | 30.23 | 767.8 | 34.7 | 1.5 | 92 | SE | ..... | ..... | 1 | 10cs | 0 | SE | ..... | 0 | 0 | Overcast | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.85 | 758.2 | 30.12 | 765.0 | 34 | 1.1 | 91 | NE | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.39 | 771.9 | 30.43 | 772.9 | 25.6 | — 3.6 | 94 | S | 2 | 0.9 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 29.99 | 761.7 | 30.20 | 767.1 | 36 | 2.2 | 85 | Calm | 0 | 0 | ..... | ..... | 8ks | ..... | ..... | 0.23 | 5.8 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.46 | 748.3 | 30.19 | 766.8 | 28 | — 2.2 | 94 | SE | 5 | 2.2 | ..... | 5k | 5ks | SE | SE | 0 | 0 | Cloudy | Rev. R. Mosley. |
| Peterboro, Ontario | 29.42 | 747.2 | 30.19 | 766.8 | 35.9 | 2.2 | 86 | Calm | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.49 | 749.0 | 30.21 | 767.3 | 34 | 1.1 | 100 | Calm | 0 | 0 | ..... | ..... | Haze | ..... | ..... | 0 | 0 | Hazy | H. Morgan. |
| Port Hastings, N. S | 30.36 | 771.1 | 30.41 | 772.4 | 27.7 | — 2.4 | ..... | E | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.53 | 750.0 | 29.20 | 767.1 | 33 | 0.6 | 93 | E | 4 | 1.8 | ..... | ..... | Fog | ..... | E | 0 | 0 | Foggy | M. Payne. |
| *Quebec, Quebec | 29.96 | 761.0 | 30.30 | 769.6 | 32 | 0.0 | 90 | NE | ..... | ..... | 1 | ..... | 10n | ..... | NE | 0.04 | 1.0 | Cloudy | Capt. Ashe, R. N |
| *Rockliffe, Ontario | 29.70 | 754.4 | 30.18 | 766.6 | 30 | — 1.1 | 89 | E | 3 | 1.3 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | W. H. McIntyre. |
| St. Andrews, N. B | 30.27 | 768.8 | 30.32 | 770.1 | 31 | — 0.6 | 78 | E | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| St. John, N. B | 30.17 | 766.3 | 30.35 | 770.9 | 29 | — 1.7 | 100 | E | 9 | 4.0 | ..... | ..... | 8ks | ..... | ..... | 0 | 0 | Cloudy | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.42 | 747.2 | 30.16 | 766.1 | 34 | 1.1 | 82 | S | 12 | 5.4 | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Clear | K. Stewart. |
| Stayner, Ontario | 29.39 | 746.5 | 30.20 | 767.1 | 35 | 1.7 | 81 | SE | 4 | 1.8 | ..... | ..... | 10n | ..... | SE | 0 | 0 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 29.86 | 733.0 | 30.18 | 766.6 | 34.0 | 1.1 | 89 | S | 4.0 | 1.8 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | Overcast | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.48 | 772.9 | 30.47 | 773.9 | 23 | — 5.0 | 88 | E | 1 | 0.4 | ..... | 10cs | Sm'e | ..... | NE | 0 | 0 | Smoky | T. C. Hill. |
| *Toronto, Ontario | 29.83 | 757.7 | 30.23 | 767.8 | 34 | 1.1 | 83 | W | 3 | 1.3 | ..... | ..... | 10n | ..... | SW | 0 | 0 | Cloudy | Magnetic Observatory |
| Windsor, N. S | 30.24 | 768.1 | 30.34 | 770.6 | 29.5 | — 1.4 | 95 | ..... | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | Prof. John E Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 25.0 | — 3.9 | 87 | E | ..... | ..... | ..... | Sm'e | Sm'e | ..... | ..... | 0 | 0 | Fair | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.96 | 761.0 | 30.20 | 767.1 | 38 | 3.3 | 51 | N | 8 | 3.6 | ..... | 0 | 5s | ..... | N | 0.34 | 8.6 | Fair | |
| Alpena, Michigan | 29.39 | 746.5 | 30.06 | 763.5 | 32 | 0.0 | 89 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Atlanta, Georgia | 28.95 | 735.3 | 30.09 | 764.3 | 57 | 13.9 | 57 | NW | 6 | 2.7 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 30.10 | 764.5 | 30.12 | 765.0 | 41 | 5.0 | 100 | NE | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | Light rain | |
| Augusta, Georgia | 29.96 | 761.0 | 30.14 | 765.5 | 56 | 13.3 | 63 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 30.14 | 765.5 | 30.19 | 766.8 | 46 | 7.8 | 69 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Barnegat, New Jersey | 30.07 | 763 8 | 30.09 | 764.3 | 39 | 3.9 | 100 | N | 25 | 11.2 | ..... | ..... | 10n | ..... | N | 0.04 | 1.0 | Light rain | |
| Bismarck, Dakota | 28.10 | 713.7 | 29.96 | 761.0 | 36 | 2.2 | 90 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boerne, Texas | 28.51 | 724.1 | 29.78 | 756 4 | 68 | 20.0 | 84 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.42 | 696.5 | 30.38 | 771.6 | 47 | 8.3 | 48 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boston, Massachusetts | 30.01 | 762.2 | 30.18 | 766.6 | 33 | 0.6 | 100 | NE | 24 | 10.7 | ..... | ..... | 10n | ..... | NE | 1.29 | 32.8 | Light rain | |
| Brackettville, Texas | 28.79 | 731.3 | 29.79 | 756.7 | 69 | 20.6 | 95 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 28.77 | 730.7 | 29.76 | 755.9 | 40 | 4.4 | 82 | W | 18 | 5.8 | ..... | 5k | 0 | W | ..... | Inap. | Inap. | Fair | |
| Brownsville, Texas | 29.85 | 758.2 | 29.90 | 759.4 | 76 | 24.4 | 82 | SE | 8 | 3.6 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.49 | 749.0 | 30.22 | 767.6 | 34 | 1.1 | 90 | Calm | 0 | 0 | ..... | ..... | 10s;hz | ..... | sW;Calm | 0.03 | 0.8 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 63 | 17.2 | 19 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.90 | 759.4 | 30.20 | 767.1 | 40 | 4.4 | 69 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Cairo, Illinois | 29.67 | 753.6 | 30.05 | 763.3 | 63 | 17.2 | 52 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.09 | 637.3 | 29.89 | 759.2 | 45 | 7.2 | 46 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 49 | 9.4 | 37 | NW | ..... | ..... | 0 | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Campo, California | 27.48 | 698.0 | 30.05 | 763.3 | 46 | 7.8 | 54 | E | 22 | 9.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.12 | 765.0 | 30.13 | 765.3 | 51 | 10.6 | 79 | NE | 13 | 5.8 | ..... | Haze | 5s | ..... | N | 0.01 | 0.3 | Fair | |
| Cape Henry, Virginia | 30.11 | 764.8 | 30.13 | 765.3 | 47 | 8.3 | 70 | NW | 22 | 9.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.12 | 765.0 | 30.13 | 765.3 | 52 | 11.1 | 73 | NE | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape May, New Jersey | 30.08 | 764.0 | 30.10 | 764.5 | 42 | 5.6 | 83 | N | 22 | 9.8 | ..... | ..... | 10s | ..... | N | 0.01 | 0.3 | Cloudy | |
| Castroville, Texas | 29.17 | 740.9 | 29.85 | 758.2 | 72 | 22.2 | 76 | S | 8 | 3.6 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 30.04 | 763.0 | 30.10 | 764.5 | 60 | 15.6 | 82 | E | 8 | 3.6 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 24.22 | 615.2 | 30.16 | 766.1 | 26 | — 3.3 | 75 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Chicago, Illinois | 29.25 | 742.9 | 29.94 | 760.5 | 45 | 7.2 | 76 | S | 11 | 4.9 | ..... | 10cs | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Cincinnati, Ohio | 29.54 | 750.3 | 30.21 | 767.3 | 42 | 5.6 | 83 | E | 2 | 0.9 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Cleveland, Ohio | 29.47 | 748.5 | 30.22 | 767.6 | 37 | 2.8 | 81 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Coleman City, Texas | 28.14 | 714.7 | 29.75 | 755.6 | 66 | 18.9 | 79 | SE | 3 | 1.3 | ..... | 2ck | 5s | Calm | S | 0 | 0 | Fair | |
| Columbus, Ohio | 29.33 | 745.0 | 30.17 | 766.3 | 48 | 8.9 | 56 | SE | 4 | 1.8 | ..... | 2cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Conroe, Texas | 28.01 | 711.4 | 29.67 | 753.6 | 68 | 20.0 | 68 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.05 | 1.3 | Cloudy | |
| Corsicana, Texas | 29.56 | 750.8 | 30.00 | 762.0 | 66 | 18.9 | 89 | SE | 4 | 1.8 | ..... | 1ck | 5s | N | S | 0 | 0 | Fair | |
| Davenport, Iowa | 29.17 | 740.9 | 29.79 | 756.7 | 56 | 13.3 | 69 | SW | 14 | 6.3 | ..... | ..... | 10s | ..... | W | 0 | 0 | Threatening | |
| Deadwood, Dakota | 25.49 | 647.4 | ..... | ..... | 36 | 2.2 | 71 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Decatur, Texas | 28.85 | 732.8 | 29.99 | 761.7 | 65 | 18.3 | 73 | S | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.18 | 741.2 | 29.94 | 760.5 | 68 | 20.0 | 84 | S | 8 | 3.6 | ..... | 10k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.99 | 634.7 | 30.21 | 767.3 | 38 | 3.3 | 91 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.72 | 18.3 | Clear | |
| Des Moines, Iowa | 28.96 | 734.0 | 29.75 | 755.6 | 54 | 12.2 | 87 | W | 12 | 5.4 | ..... | 0 | 8n | ..... | W | 0.10 | 2.6 | Light rain | |
| Detroit, Michigan | 29.47 | 748.5 | 30.16 | 766.1 | 36 | 2.2 | 80 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Dodge City, Kansas | 27.49 | 698.2 | 29.79 | 756.7 | 48 | 8.9 | 63 | N | 28 | 12.5 | ..... | 2c | 0 | SW | ..... | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.16 | 740.7 | 29.85 | 758.2 | 49 | 9.4 | 93 | S | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.19 | 4.8 | Light rain | |
| Duluth, Minnesota | 28.90 | 734.0 | 29.58 | 751.3 | 37 | 2.8 | 95 | NE | 2 | 0.9 | ..... | ..... | 10n | ..... | NE | 0.03 | 0.8 | Light rain | |
| Eagle Pass, Texas | 29.06 | 738.1 | 29.77 | 756.1 | 72 | 22.2 | 76 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Eastport, Maine | 30.23 | 767.8 | 30.30 | 769.6 | 31 | — 0.6 | 79 | NE | 26 | 11.6 | ..... | ..... | 10s | ..... | E | 0 | 0 | Threatening | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 72 | 22.2 | 90 | S | ..... | 4 | 0 | 5s | 5s | ..... | S | 0 | 0 | Fair | |
| El Paso, Texas | 28.20 | 665.5 | ..... | ..... | 59 | 15.0 | 18 | NW | 12 | 5.4 | ..... | 2cs | 8ks | W | W | 0 | 0 | Threatening | |
| Erie, Pennsylvania | 29.46 | 748.3 | 30.20 | 767.1 | 38 | 3.3 | 81 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Escanaba, Michigan | 29.20 | 741.7 | 29.87 | 758.7 | 36 | 2.2 | 73 | S | 15 | 6.7 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Florence, Arizona | 28.49 | 723.6 | 30.09 | 764.3 | 57 | 13.9 | 31 | N | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.97 | 710.4 | ..... | ..... | 33 | 0.6 | 89 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Fort Craig, New Mexico | 25.58 | 649.7 | 29.64 | 752.8 | 40 | 4.4 | 37 | W | 20 | 8.9 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Fort Davis, Texas | 25.13 | 638.3 | 30.09 | 764.3 | 64 | 17.8 | 61 | N | 6 | 2.7 | ..... | ..... | 10ks | ..... | SW | Inap. | Inap. | Smoky | |
| Fort Gibson, Indian Ter | 29.38 | 746.2 | 29.90 | 759.4 | 71 | 21.7 | 71 | SW | 16 | 7.2 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| Fort Griffin, Texas | 28.66 | 728.0 | 29.89 | 759.2 | 66 | 18.9 | 84 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.53 | 699.2 | ..... | ..... | 33 | 0.6 | 79 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.07 | 1.8 | Clear | |
| Fort McKavett, Texas | 27.65 | 702.3 | 29.50 | 749.3 | 66 | 18.9 | 74 | E | 4 | 1.8 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Fair | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.71 | 729.2 | 29.78 | 756.4 | 65 | 18.3 | 89 | S | 18 | 8.0 | ..... | 5c | 5s | Calm | SW | 1.29 | 32.8 | Cloudy | |
| Fort Stevenson, Dakota | 28.13 | 714.5 | ..... | ..... | 35 | 1.7 | 70 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Fredericksburg, Texas | 28.24 | 717.3 | 29.76 | 755.9 | 68 | 20.0 | 60 | S | 6 | 2.7 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 29.97 | 761.2 | 30.01 | 762.2 | 70 | 21.1 | 95 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Graham, Texas | 28.85 | 732.8 | 29.87 | 758.7 | 66 | 18.9 | 89 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.34 | 745.2 | 30.00 | 762.0 | 40 | 4.4 | 73 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Indianapolis, Indiana | 29.32 | 744.7 | 30.11 | 764.8 | 42 | 5.6 | 74 | SE | 4 | 1.8 | ..... | 5c;cs | 0 | W | ..... | 0 | 0 | Fair | |
| Indianola, Texas | 29.94 | 760.5 | 29.97 | 761.2 | 71 | 21.7 | 95 | SE | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.77 | 730.7 | 29.87 | 758.7 | 65 | 18.3 | 89 | SE | 8 | 3.6 | ..... | 0 | 2ks | ..... | Calm | 0 | 0 | Fair | |
| Jacksonville, Florida | 30.10 | 764 5 | 30.12 | 765.0 | 68 | 20.0 | 84 | SW | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Keokuk, Iowa | 29.16 | 740.7 | 29.76 | 755.9 | 60 | 15.6 | 55 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Key West, Florida | 30.12 | 765.0 | 30.15 | 765.8 | 74 | 23.3 | 76 | E | 4 | 1.8 | ..... | 1k | 0 | Calm | ..... | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 30.09 | 764.3 | 30.11 | 764.8 | 46 | 7.8 | 77 | NE | 16 | 7.2 | ..... | ..... | 10s | ..... | E | 0.03 | 0.8 | Cloudy | |
| Knoxville, Tennessee | 29.14 | 740.1 | 30.16 | 766.1 | 48 | 8.9 | 70 | Calm | 0 | 0 | ..... | Haze | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 28.97 | 735.8 | 29.69 | 754.1 | 52 | 11.1 | 93 | S | 16 | 7.2 | ..... | ..... | 10n | ..... | Calm | 0.73 | 18.5 | Light rain | |
| La Mesilla, New Mexico | 26.01 | 660.6 | 30.16 | 766.1 | 58 | 14.4 | 41 | NW | 2 | 0.9 | ..... | ..... | 10s | ..... | NW | Inap. | Inap. | Cloudy | |
| Laredo, Texas | 29.43 | 747.5 | 29.75 | 755.6 | 73 | 22.8 | 85 | E | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.97 | 735.8 | 29.79 | 756.7 | 58 | 14.4 | 82 | NW | 12 | 5.4 | ..... | ..... | 9ks | ..... | SW | 0 | 0 | Cloudy | |
| Los Angeles, California | 29.63 | 752.6 | 29.97 | 761.2 | 56.0 | 13.3 | 40 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.59 | 751.6 | 30.16 | 766.1 | 46 | 7.8 | 69 | NE | 3 | 1.3 | ..... | 5c | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Lynchburg, Virginia | 29.46 | 748.3 | 30.16 | 766.1 | 47 | 8.3 | 61 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Madison, Wisconsin | 28.88 | 733.5 | 29.85 | 758.2 | 49 | 9.4 | 71 | S | 5 | 2.2 | ..... | ..... | 10s | ..... | W | 0 | 0 | Threatening | |
| Marquette, Michigan | 29.01 | 736.8 | 29.71 | 754.6 | 40 | 4.4 | 82 | SE | 20 | 8.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Mason, Texas | 28.31 | 719.1 | 30.00 | 762.0 | 69 | 20.6 | 75 | SE | 12 | 5.4 | ..... | 1cs | 8s | Calm | S | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.74 | 755.4 | 30.05 | 763.3 | 67 | 19.4 | 68 | S | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.17 | 740.9 | 29.91 | 759.7 | 48 | 6.1 | 75 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Mobile, Alabama | 30.12 | 765.0 | 30.16 | 766.1 | 67 | 19.4 | 92 | SW | 1 | 0.4 | ..... | 0 | 8s | ..... | W | 0 | 0 | Fair | |
| Montgomery, Alabama | 29.91 | 759.7 | 30.14 | 765.5 | 63 | 17.2 | 88 | SE | 1 | 0.4 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Morgantown, West Virginia | 29.14 | 740.1 | 30.22 | 767.6 | 46 | 7.2 | 68 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | W | 0.00 | 1.5 | Cloudy | |
| Mt. Washington, N. H. | 23.80 | 604.5 | 30.16 | 766.1 | 22 | — 5.6 | 100 | E | 12 | 5.4 | ..... | ..... | Fog | ..... | E | 0.96 | 24.4 | Foggy | |
| Nashville, Tennessee | 29.59 | 751.6 | 30.13 | 765.3 | 58 | 11.7 | 78 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 29.98 | 761.5 | 30.10 | 764.5 | 37 | 2.8 | 76 | N | 27 | 12.1 | ..... | 0 | 8s | ..... | NE | 1.65 | 41.9 | Cloudy | |
| New London, Connecticut | 30.06 | 763.5 | 30.11 | 764.8 | 37 | 2.8 | 81 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 1.56 | 39.6 | Cloudy | |
| New Orleans, Louisiana | 30.06 | 763.5 | 30.12 | 765.0 | 63 | 17.2 | 94 | S | 2 | 0.9 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Newport, Rhode Island | 30.02 | 762.5 | 30.08 | 764.0 | 37 | 2.8 | 90 | N | 18 | 8.0 | ..... | ..... | 10s | ..... | N | 1.28 | 32.5 | Cloudy | |
| New York, New York | 29.95 | 760.7 | 30.13 | 765.3 | 41 | 5.0 | 83 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | S | 0.17 | 4.3 | Cloudy | |
| Norfolk, Virginia | 30.07 | 763.8 | 30.13 | 765.3 | 46 | 7.8 | 78 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrumental error and temperature. | | BAROMETER. Reduced to sea-level. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. Direction. | WIND. Velocity. | | WIND. Force. | CLOUDS. Amount. | | CLOUDS. Direction. | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10 | Upper. 0—10 | Lower. 0—10. | Upper. From— | Lower. From— | Inches. | Millimeters. | | |
| North Platte, Nebraska | 27.20 | 690.9 | 29.82 | 757.4 | 40 | 4.4 | 73 | NW | 18 | 8.0 | ..... | 10k | 0 | NW | ..... | Inap. | Inap. | Cloudy | |
| Olympia, Washington Ter. | 30.02 | 762.5 | 30.06 | 763.5 | 48.2 | 9.0 | 85 | S | 13 | 5.8 | ..... | ..... | 10n | ..... | S | 0.47 | 11.9 | Light rain | |
| Omaha, Nebraska | 28 74 | 730.0 | 29.82 | 757.4 | 50 | 10.0 | 72 | NW | 10 | 4.5 | ..... | ..... | 10s | ..... | NW | 0.67 | 17.0 | Cloudy | |
| Oswego, New York | 29.89 | 759.2 | 30.22 | 767.6 | 40 | 4.4 | 91 | SE | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0.01 | 0.3 | Foggy | |
| Pembina, Dakota | 29.94 | 760.5 | 29.78 | 756.4 | 34 | 1.1 | 100 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pa | 30.08 | 764.0 | 30.13 | 765.3 | 42 | 5.6 | 83 | N | 15 | 6.7 | ..... | 0 | 8ks | ..... | N | 0.02 | 0.5 | Cloudy | |
| Phœnix, Arizona | 28.79 | 731.3 | 30.56 | 776.2 | 65 | 18.3 | 22 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.84 | 453.1 | 30.05 | 763.3 | 11 | —11.7 | Inap. | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Pioche, Nevada | 24.30 | 617.2 | 30.07 | 763.8 | 33 | 0.6 | 42 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.40 | 746.7 | 30.24 | 768.1 | 37 | 2.8 | 81 | W | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Port Huron, Michigan | 29.47 | 748.5 | 30.16 | 765.8 | 35 | 1.7 | 80 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Portland, Maine | 30.20 | 767.1 | 30.25 | 768.3 | 36 | 2.2 | 71 | NE | 12 | 5.4 | ..... | ..... | 8s | ..... | Calm | 0.39 | 9.9 | Clearing | |
| Portland, Oregon | 30.13 | 765.3 | 30.28 | 767.8 | 48.0 | 8.9 | 97 | SE | 3 | 1.3 | ..... | ..... | 10n | ..... | ..... | 0.50 | 12.7 | Light rain | |
| Prescott, Arizona | 24.79 | 629.6 | 30.15 | 765.8 | 41 | 5.0 | 19 | N | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.14 | 740.1 | 29.95 | 760.7 | 61 | 16.1 | 77 | S | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 30.17 | 766.3 | 30.19 | 766.8 | 65 | 18.3 | 94 | NE | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Red Bluff, California | 29.88 | 758.9 | 30.25 | 768.3 | 50 | 10.0 | 72 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rio Grande City, Texas | 29.68 | 753.9 | 29.89 | 759.2 | 72 | 22.2 | 85 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Rochester, New York | 29.58 | 751.3 | 30.22 | 767.6 | 35 | 1.7 | 90 | W | 3 | 1.3 | ..... | ..... | Fog | ..... | ..... | 0.01 | 0.3 | Dense fog | |
| Roseburg, Oregon | 29.69 | 754.1 | 30.26 | 768.6 | 50.0 | 10.0 | 86 | NW | 1 | 0.4 | ..... | Haze | 5n | ..... | Calm | 0.01 | 0.3 | Light rain | |
| Sacramento, California | 30.12 | 765.0 | 30.21 | 767.3 | 55 | 12.8 | 84 | Calm | 0 | 0 | ..... | 1c | 0 | NW | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.40 | 746.7 | 29.97 | 761.2 | 59 | 15.0 | 54 | SE | 14 | 6.3 | ..... | 3c;ck | 2s | W | Calm | 0 | 0 | Fair | |
| St. Marks, Florida | 30.13 | 765.3 | 30.14 | 765.5 | 65 | 18.3 | 89 | W | 4 | 1.8 | ..... | 0 | 2s | ..... | W | 0.18 | 4.6 | Fair | |
| St. Paul, Minnesota | 28.78 | 731.0 | 29.69 | 754.6 | 46 | 7.8 | 76 | SW | 18 | 8.0 | ..... | ..... | 10s | ..... | SW | 0.15 | 3.8 | Cloudy | |
| Salt Lake City, Utah | 26.97 | 659.6 | 30.30 | 769.6 | 36 | 2.2 | 53 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear | |
| San Antonio, Texas | 29.26 | 743.2 | 29.82 | 757.4 | 70 | 21.1 | 67 | E | 2 | 0.9 | ..... | 10k | 0 | SE | ..... | 0 | 0 | Cloudy | |
| San Diego, California | 29.92 | 760.0 | 30.00 | 762.0 | 54 | 12.2 | 61 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.61 | 749.5 | 30.20 | 767.1 | 42 | 5.6 | 74 | E | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandy Hook, New Jersey | 30.07 | 763.8 | 30.10 | 764.5 | 40 | 4.4 | 82 | NE | 20 | 8.9 | ..... | ..... | 10s | ..... | NE | 0.32 | 8.1 | Cloudy | |
| San Francisco, California | 30.16 | 766.1 | 30.28 | 767.8 | 54 | 12.2 | 74 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 23.82 | 692.3 | 29.86 | 758.4 | 41 | 5.0 | 57 | NE | 1 | 0.4 | ..... | 5cs | 0 | Calm | ..... | 0.04 | 1.0 | Fair | |
| Savannah, Georgia | 29.99 | 761.7 | 30.09 | 764.3 | 65 | 18.3 | 89 | W | 6 | 2.7 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Shreveport, Louisiana | 29.83 | 757.7 | 30.05 | 763.3 | 67 | 19.4 | 89 | S | 1 | 0.4 | ..... | 0 | 2s | ..... | SW | 0 | 0 | Fair | |
| Silver City, New Mexico | 24.25 | 616.0 | 30.34 | 770.6 | 52 | 11.1 | 69 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Smithville, North Carolina | 30.10 | 764.5 | 30.13 | 765.3 | 55 | 12.8 | 81 | NE | 9 | 4.0 | ..... | 1cs | 0 | N | ..... | 0 | 0 | Clear | |
| Springfield, Massachusetts | 30.05 | 763.3 | 30.18 | 766.6 | 37 | 2.8 | 81 | N | 10 | 4.5 | ..... | ..... | 10ks | ..... | NE | 0.88 | 22.4 | Threatening | |
| Stockton, Texas | 26.88 | 682.7 | 29.88 | 758.9 | 65 | 18.3 | 63 | S | 5 | 2.2 | ..... | 8cs | 0 | Calm | ..... | 0.01 | 0.3 | Cloudy | |
| Thatcher's Island, Mass | 30.13 | 765.3 | 30.18 | 766.6 | 35 | 1.7 | 90 | NE | 33 | 14.8 | ..... | ..... | 10s | ..... | NE | 1.76 | 44.7 | Cloudy | |
| Toledo, Ohio, | 29.44 | 747.8 | 30.14 | 765.5 | 43 | 6.1 | 75 | S | 2 | 0.9 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Tucson, Arizona | 27.45 | 697.2 | 30.00 | 762.0 | 54 | 12.2 | 26 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.85 | 758.2 | 30.35 | 770.9 | 47.0 | 8.3 | 92 | E | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | 0.19 | 4.8 | Light rain | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 29 | — 1.7 | 67 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Uvalde, Texas | 29.01 | 736.8 | 29.81 | 757.2 | 71 | 21.7 | 80 | E | 5 | 2.2 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.89 | 759.2 | 30.15 | 765.8 | 62 | 16.7 | 97 | S | 4 | 1.8 | ..... | 0 | Fog | ..... | S | Inap. | Inap | Clear | |
| Virginia City, Montana | 24.39 | 619.5 | 29.87 | 758.7 | 30 | — 1.1 | 68 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Visalia, California | 29.85 | 758.2 | 30.24 | 768.1 | 46.3 | 7.9 | 73 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C | 30.08 | 764.0 | 30.19 | 766.8 | 44 | 6.7 | 68 | NW | 11 | 4.9 | ..... | ..... | 10ks | ..... | N | Inap. | Inap. | Cloudy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 63 | 17.2 | 19 | N | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Wilmington, N. Carolina | 30.04 | 763.0 | 30.12 | 765.0 | 53 | 11.7 | 67 | NE | 8 | 3.6 | 6 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 29.93 | 668.6 | 30.29 | 769.4 | 31 | — 0.6 | 58 | NE | 7 | 3.1 | ..... | 2cs | 0 | NW | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass | 30.00 | 762.0 | 30.04 | 763.0 | 37 | 2.8 | 90 | N | 22 | 9.8 | ..... | ..... | 10n | ..... | NE | 1.17 | 29.7 | Fair | |
| Yankton, Dakota | 28.64 | 727.4 | 29.93 | 760.2 | 47 | 8.3 | 70 | NW | 11 | 4.9 | ..... | 2c | 2s | SW | NW | 0.39 | 9.9 | Light rain | |
| Yuma, Arizona | 29.84 | 757.9 | 30.00 | 762.0 | 70 | 21.1 | 44 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | Clear | |
| Fayetteville, Ark | 28.36 | 720.3 | 29.71 | 754.6 | 67 | 19.4 | 74 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.09 | 764.3 | 30.14 | 765.5 | 73 | 22.8 | 76 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.27 | 641.8 | ..... | ..... | 66.0 | 18.9 | 82 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.17 | 4.3 | ..... | Thomas Herran. |
| Navassa, W. I | 30.00 | 762.0 | 30.08 | 764.0 | 80 | 26.7 | ..... | NE | 6 | 2.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Partly clo'dy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.04 | 763.0 | 30.05 | 763.3 | 80 | 26.7 | 87 | E | ..... | ..... | 2 | 5k | 6ks | E | ..... | 0.400 | 10.16 | ½ Clouded | O. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | 29.66 | 753.4 | 29.72 | 754.9 | — 8.0 | —22.2 | 79 | S | 14 | 6.3 | ..... | 7k | 3s | E | E | 0.02 | 0.5 | Snowing | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,181.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,623 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,208 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,037.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,395.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.556 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.64 in.; Stockton, 3.00 in.; Tucson, 2.39 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.24 | 768.1 | 53 | 11.7 | 50 | 10.0 | 94 | NW | 4 | 1.8 | .... | ..... | 5 | ..... | W | 0 | 0 | ..... | ..... | Fair..... | |
| Navy Yard, Pensacola, Fla. | 30.25 | 768.3 | 68 | 20.0 | 68 | 20.0 | 90 | W | 2 | 0.9 | .... | ..... | 10 | ..... | NW | 0 | 0 | ..... | ..... | Threatening | |
| Navy Yard, Portsmouth, N.H | 30.19 | 766.8 | 50 | 10.0 | 32 | 0.0 | 100 | NE | 8 | 3.6 | ..... | ..... | 10 | ..... | ..... | 0.7 | 18. | ..... | ..... | Cloudy..... | |
| Naval Hospital, Yokohama, Japan.....*. | 30.05‡ | 763.3‡ | ..... | ..... | 53 | 11.7 | 67 | SW | ..... | ..... | 3 | ..... | 2s;hz | ..... | W | 0 | 0 | ..... | ..... | Fair ..... | |
| Adams, Panama .....*. | 29.99 | 761.7 | 77 | 25.0 | 76 | 24.4 | 95 | NW | ..... | ..... | 2 | ..... | 8 | ..... | N;W | ..... | ..... | ..... | ..... | Fair ..... | |
| Alaska, N. 48° 24′, W. 123° 28′..... | 29.98‡ | 761.5‡ | ..... | ..... | 45 | 7.2 | 72 | NNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.32 | 8.1 | Smooth | ..... | Raining ..... | |
| Alliance, Leghorn, Italy..... | 29.69‡ | 754.1‡ | ..... | ..... | 60 | 15.6 | 65 | Calm | ..... | ..... | 0 | ..... | 6 | ..... | N;E | ..... | ..... | ..... | ..... | Fair ..... | |
| Ashuelot, Hong-Kong, China. ...*. | 29.92‡ | 760.0‡ | ..... | ..... | 66 | 18.9 | 89 | ESE | ..... | ..... | 2 | ..... | 8 | ..... | Calm | ..... | ..... | ..... | ..... | Hazy..... | |
| Canonicus, New Orleans, La.....*. | 30.12 | 765.0 | 49 | 9.4 | 68 | 20.0 | 100 | SW | ..... | .... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dense fog.... | |
| Colorado, New York, N. Y..... | 30.06 | 763.5 | 40 | 4.4 | 39 | 3.9 | 100 | N | 5 | 2.2 | ..... | ..... | 10 | ..... | N | 0.32 | 8.1 | ..... | ..... | Squally..... | |
| Constitution Lisbon, Portugal..... | 30.26‡ | 768.6‡ | ..... | ..... | 57 | 13.9 | 75 | NW | ..... | ..... | 4 | ..... | 9 | ..... | NW | ..... | ..... | ..... | ..... | Squally..... | |
| Despatch, Genoa, Italy..... | 29.67‡ | 753.6‡ | ..... | ..... | 56 | 13.3 | 87 | N | ..... | ..... | 2 | ..... | 10 | ..... | N | ..... | ..... | Smooth | ..... | Rainy ..... | |
| Franklin, Norfolk, Va.....*. | 30.24 | 768.1 | 63 | 17.2 | 48 | 8.9 | 70 | NNW | 13.2 | 5.9 | ..... | ..... | 2 | ..... | N | 0 | 0 | ..... | ..... | Clear..... | |
| Gettysburg, Genoa, Italy ..... | 29.69‡ | 754.1‡ | ..... | ..... | 56 | 13.3 | 100 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | Var. | 0.12 | 3.0 | ..... | ..... | Cloudy..... | |
| Hartford, Montevideo, Uruguay.*. | 30.16 | 766.1 | 69 | 20.6 | 66 | 18.9 | 79 | SE | ..... | ..... | 5 | ..... | 5 | ..... | SE | 0.10 | 2.5 | Mod'ate | SE | Fair..... | |
| Lackawana, Callao, Peru.....*. | 29.79‡ | 756.7‡ | ..... | ..... | 68 | 20.0 | 95 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | ..... | Overcast.... | |
| Michigan, Erie, Pa.....†. | 30.06 | 763.5 | ..... | ..... | 37 | 2.8 | 81 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Monocacy, Shanghai, China.....*. | 29.87‡ | 758.7‡ | ..... | ..... | 59 | 15.0 | 100 | S | ..... | ..... | 3–5 | ..... | 2 | ..... | S | ..... | ..... | ..... | ..... | Fair..... | |
| Monongahela Yokohama, Japan .....*. | 30.04 | 763.0 | ..... | ..... | 54 | 12.2 | 80 | SW | ..... | ..... | 2–3 | ..... | 2 | ..... | ..... | 0 | 0 | Light | S;W | D. clouds.... | |
| New Hampshire, Port Royal, S. C.....*. | 30.25 | 768.3 | 75 | 23.9 | 67 | 19.4 | ?? | WNW | 4 | 1.8 | ..... | ..... | 8 | ..... | WNW | 0 | 0 | ..... | ..... | Misty..... | |
| Onward, Callao, Peru.....†*. | 30.07 | 763.8 | ..... | ..... | 67 | 19.4 | 89 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Palos, Tientsin, China.....*. | 29.73 | 755.1 | 51 | 10.6 | 51 | 10.6 | 79 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 46 | 7.8 | 77 | NE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Pensacola, Valparaiso, Chili..... | 30.02‡ | 762.5‡ | ..... | ..... | 66 | 18.9 | 79 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Plymouth, N. 34° 33′, W. 66° 09′..... | 29.97‡ | 761.2‡ | ..... | ..... | 60 | 15.6 | 100 | W | ..... | ..... | 5 | ..... | 10 | ..... | E | ..... | ..... | Light | W | Overcast.... | |
| Powhatan, Norfolk, Va..... | 30.10‡ | 764.5‡ | ..... | ..... | 48 | 8.9 | 70 | NNW | ..... | ..... | 3 | ..... | 2 | ..... | NNW | 0 | 0 | Smooth | ..... | Clear. ..... | |
| Quinnebaug, Malaga, Spain..... | 30.14‡ | 765.5‡ | ..... | ..... | 61 | 16.1 | 55 | NW | ..... | ..... | 5 | ..... | 2 | ..... | NW | ..... | ..... | ..... | ..... | Fair..... | |
| Ranger. Amoy, China..... | 29.94‡ | 760.5‡ | ..... | ..... | 66 | 18.9 | 79 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | ..... | Clear..... | |
| Richmond. Aden, Arabia..... | 29.89‡ | 759.2‡ | ..... | ..... | 81 | 27.2 | 74 | SE | ..... | ..... | 2 | ..... | 2 | ..... | SE | 0 | 0 | Smooth | ..... | Fair ..... | |
| Rio Bravo, Brownsville, Texas..... | 29.86 | 758.4 | 74 | 23.3 | 74 | 23.3 | 95 | S | ..... | ..... | 2 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Clearing..... | |
| Santee, Annapolis, Md... ..... | 30.09‡ | 764.3‡ | ..... | ..... | 45 | 7.2 | 76 | N | ..... | ..... | 1 | ..... | 10 | ..... | NW | 0 | 0 | ..... | ..... | Hazy..... | |
| Saratoga, Hampton Roads, Va..... | 30.24‡ | 768.1‡ | ..... | ..... | 47 | 8.3 | 100 | N | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds.... | |
| St. Louis, League Island, Pa ..... | 30.04 | 763.0 | 65 | 18.3 | 46 | 7.8 | 84 | N | 14 | 6.3 | ..... | ..... | 10 | ..... | NE | 0.02 | 0.5 | ..... | ..... | Cloudy..... | |
| Supply, New York, N. Y..... | 30.10‡ | 764.5‡ | ..... | ..... | 44 | 6.7 | 84 | NNE | ..... | ..... | 4 | ..... | 10 | ..... | N | ..... | ..... | ..... | ..... | Squally..... | |
| Trenton Genoa, Italy.....*. | 29.63‡ | 752.6‡ | ..... | ..... | 56 | 13.3 | 69 | N | ..... | ..... | 1–2 | ..... | 8 | ..... | Calm | 0.08 | 2.0 | Mod'ate | S | Cloudy..... | |
| Tuscarora, Chipequa Bay, Mexico. | 29.97‡ | 761.2‡ | ..... | ..... | 75 | 23.9 | 72 | NW | ..... | ..... | 0–1 | ..... | 8 | ..... | Calm | 0 | 0 | Smooth | ..... | Almost cov. | |
| Wabash, Boston, Mass..... | 30.23‡ | 767.8‡ | ..... | ..... | 35 | 1.7 | 90 | NE | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | 0.85 | 21.6 | ..... | ..... | Raining..... | |
| Wyoming, Alexandria, Egypt....*. | 29.74‡ | 755.4‡ | ..... | ..... | 74 | 23.3 | 86 | NE | ..... | ..... | 2–3 | ..... | 2 | ..... | NE | ..... | ..... | Smooth | ..... | Fair ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Colima, N. 15° 54′, W. 98° 45′..† | | 30.00‡ | 762.0‡ | 77 | 25.0 | | Calm | | | 0 | | 6 | | NNE | 0 | Small | WNW | Misty | Capt. Whitebury |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Granada, Capt. Austin, N. 35° 39′, W. 121° 23′...† | | 30.23‡ | 767.6‡ | 56 | 13.3 | | WNW | | | 1 | | 0 | | | | Very Heavy | WNW | Clear | Capt. A. Fuller. |
| S. S. Wilmington† | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |
| S. S. Zealandia, N. 8° 45′, W. 163° 00′ | | 29.97‡ | 761.2‡ | | | | E | | | 3 | | | | ESE | | Long Rough | E | Fine | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; and no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

**WHITE STAR LINE MARINE SERIES.**

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

**OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.**

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, N. 36° 00′, E. 144° 51′ | | 30.12‡ | 765.0‡ | 59 | 15.0 | 65 | SW | | | 4 | | ks | | SW | 0 | Mod'ate | N | D. clouds | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 22° 17′, E. 114° 10′...† | | 30.07‡ | 63.8‡ | | | | Var. | | | 2 | | Haze | | Var. | 0 | | | | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, N. 37° 01′, W. 152° 49′ | | 30.41‡ | 72.4‡ | 48 | 8.9 | 78 | WNW | | | 3 | | 2k | | W | | 5 | WNW | D. clouds | J. G. Cameron. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

**NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.**

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 42° 53,′ W. 42° 36′ | | 30.31‡ | 769.9‡ | | | | NNW | | | 5 | | | | NW | | Cross | N | Cloudy | Capt. G. Meyer. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 5; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 42° 55′, W. 50° 02 | | 30.42‡ | 772.6‡ | 32 | 0.0 | | NNW | | | 3 | | 7 | | NW | 0 | Heavy | NW | Cloudy. | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
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Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Hyannis Harbor, Mass. | | 29.96‡ | 761.0‡ | 40 | 4.4 | 100 | NE | | | | | 10n | | | | | | Raining | Capt. James Jorgensen. |
| | | | | | | | | | | | | | | | | | | | |
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Note.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

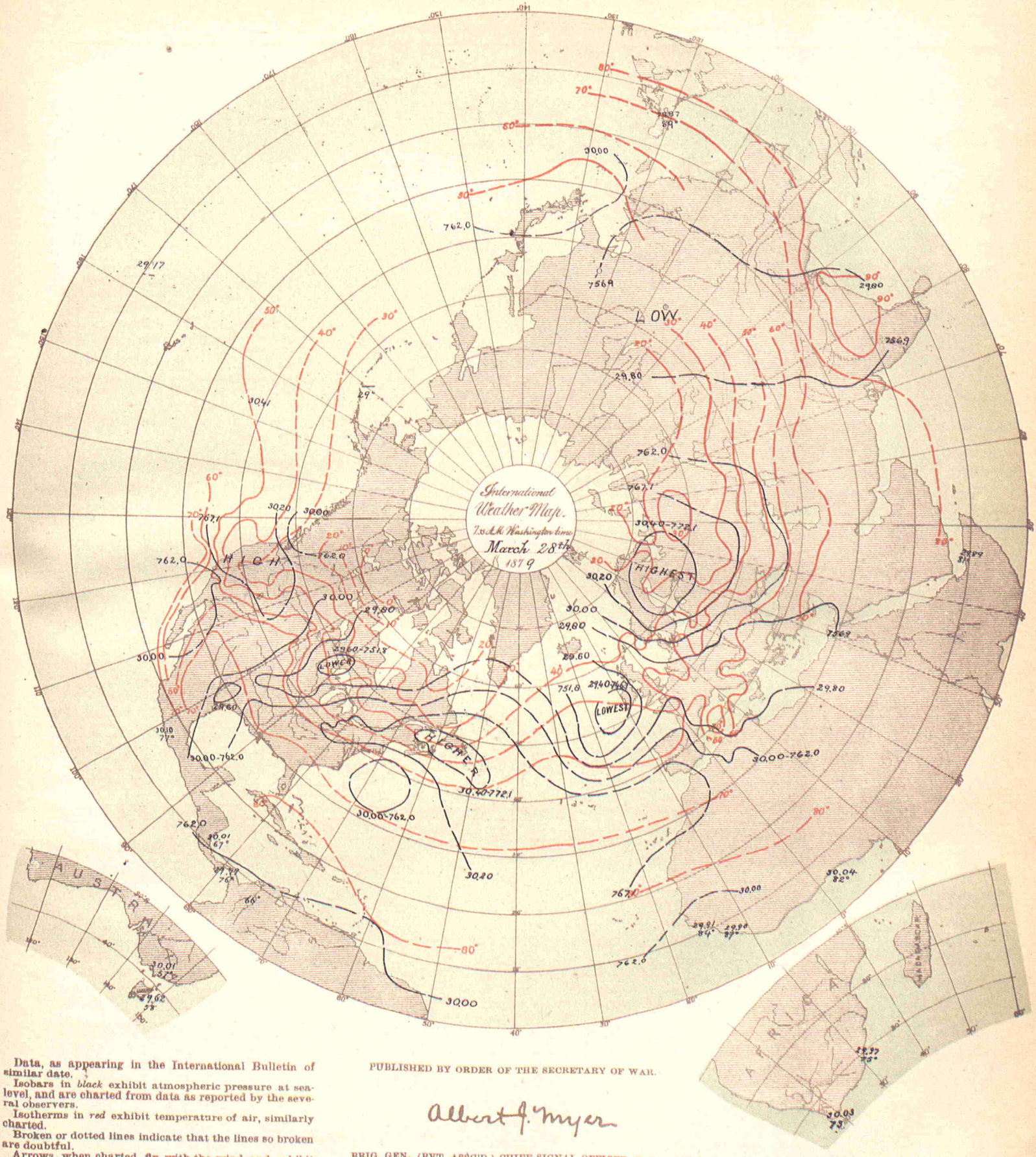
Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASS'G'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 29, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
8:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:35 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time
1:26 P. M. CHRISTIANIA mean time.
1:38 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGEGIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | 30.19 | 766.9 | 62.1 | 16.7 | 81 | NE | | | 1 | | 8 | | | 0 | 0 | Very cloudy | |
| Nemours | | | 30.24 | 768?1 | 66.0 | 18.9 | 77 | Calm | | | 0 | | 0 | | | 0 | 0 | Clear | Kesxuche. |
| Algiers | | | 30.17 | 766.3 | 61.9 | 16.6 | 67 | WSW | | | 3 | | 10 | | | 0 | 0 | Covered | Touriliere. |
| La Calle | | | 30.09 | 764 3 | 61.2 | 16.2 | 76 | NW | | | 5 | | 5 | | | 0.262 | 6.4 | Cloudy | Foufrede. |
| Tunis | | | 30.04 | 763.0 | 60 3 | 15.7 | 61 | NNW | | | 7 | | 8 | | | 0.343 | 8.7 | Very cloudy | Jacques. |
| Sfax | | | 30.03 | 762.7 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 30.22 | 767.6 | 58.6 | 14 8 | 47 | N | | | 1 | | 5 | | | 0 | 0 | Cloudy | Herbin. |
| Tebessa | | | 30.11 | 764.7 | 45.9 | 7.7 | 27 | NNW | | | 7 | | 8 | | | 0.488 | 12.4 | Very cloudy | Watrin. |
| Geriville | | | 30.17 | 766.2 | 46.9 | 8.3 | 100 | N | | | 6 | | 10 | | | 0 | 0 | Covered | Brugniaux. |
| Laghouat | | | 30.22 | 767.6 | 59.7 | 15.4 | 38 | W | | | 5 | | 2 | | | 0 | 0 | Fair | Bertrand. |
| Biskra | | | 30.15 | 765.9 | 69.6 | 20.9 | 23 | NW | | | 4 | | 2 | | | 0 | 0 | Fair | Chanvaux. |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.37 | 746.1 | 29.93 | 760.1 | 54.0 | 12.2 | 60 | E | | | 3 | 7 | | | | 0 | 0 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.23 | 742.5 | 30.03 | 762.7 | 37.4 | 3.0 | 87 | ENE | | | 2 | 10 | | | | 0.016 | 0.4 | | Dr. Wierzbiski. |
| Eperies | 28.98 | 736.2 | 29.86 | 758.5 | 39.2 | 4.0 | | N | | | 3 | 10ks | | | | 0.089 | 2.25 | | Julius Mikolik. |
| Gratz | 28.65 | 727.7 | 29.89 | 759.2 | 56.8 | 13.8 | 36 | NW | | | 4 | 1 | | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.37 | 720.6 | 29.80 | 757.0 | 50.4 | 10.2 | 75 | SE | | | 1 | 10 | | | | 0.370 | 9.40 | | Prof. A. Gottschling. |
| Kremsmünster | 28.65 | 727.7 | 30.02 | 762.5 | 42.8 | 6.0 | 76 | WNW | | | 2 | 10 | | | | 0 | 0 | | Prof. C. Wagner. |
| Lemberg | 28.95 | 735.3 | 29.98 | 761.5 | 32.0 | 0.0 | 94 | S | | | 1 | 10 | | | | | | | Dr. T. Stanecki. |
| Pola | 29.80 | 756.9 | 29.91 | 759.8 | 55.8 | 13.2 | 83 | WNW | | | 2 | 5 | | | | 0.114 | 2.9 | | I.R.Hydrographic Office |
| Szathmar | 29.40 | 746.7 | 29.87 | 758.6 | 48.6 | 9.2 | 74 | S | | | 2 | 10 | | | | 0.075 | 1.9 | | Julius Csics, S. J. |
| Szegedin | | | | | | | | | | | | | | | | | | | Karl Stancel. |
| Trieste | 29.82 | 757.5 | 29.93 | 760.1 | 59.0 | 15.0 | 46 | E | | | 1 | 0 | | | | 0 | 0 | | P. Busin. |
| Vienna | 29.24 | 742.8 | 29.97 | 761.2 | 50.4 | 10.2 | 60 | WNW | | | 4 | 4 | | | | 0 | 0 | | I. R. Central Met. Obs'y |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 m., or 1,350.4 feet.; Kremsmünster, 383.6 m., or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. O. Houzeau, Director of the Royal Observatory at Brussels

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.65 | 753.0 | 29.85 | 758.1 | 45.9 | 7.7 | 88 | S | | | 4 | 10 | | SSW | | 0.010 | 0.25 | Light rain | Royal Observatory. |
| Furnes | 29.75 | 755.7 | 29.78 | 756.3 | 49.5 | 9.7 | 87 | SW | | | 5 | 10 | | | | 0.035 | 0.9 | | M. E. de Cae. |
| Maeseyck | 29.76 | 755.9 | 29.89 | 759.1 | 50.9 | 10.5 | 70 | S | | | 4 | 10 | | | | 0.016 | 0.4 | Raining | M. Pierrot. |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0; instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m., Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.34 | 745.2 | 29.44 | 747.8 | 46.6 | 8.1 | ..... | SW | 20 | 8.9 | ..... | ..... | 1 | ..... | ..... | 0.010 | 0.25 | Blue sky..... | W. Boswell. |
| Ardrossan | 29.43 | 747.5 | 29.45 | 748.0 | 45 | 7.2 | ..... | SSW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.51 | 749.5 | 49.0 | 9.4 | ..... | SW | 22 | 9.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Squally..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.61 | 752.1 | 49.8 | 9.9 | ..... | W | 17 | 7.6 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.62 | 752.3 | 51.0 | 10.6 | ..... | WSW | 18 | 8.0 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Thomas Mackereth. |
| Bradford, Yorkshire | 29.20 | 741.7 | 29.59 | 751.6 | 50.6 | 10.3 | ..... | W | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0.20 | 5.1 | D. clouds..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.91 | 759.7 | 29.94 | 760.5 | 83.0 | 28.3 | ..... | NE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | Gloomy ..... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.64 | 752.8 | 54.0 | 12.2 | ..... | SW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | Showery.... | H. Todd. [C. |
| Cardington | ..... | ..... | 29.62 | 752.3 | 55.0 | 12.8 | ..... | SW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | John McLaren. |
| Chatham, School M. E. | 29.56 | 750.8 | 29.69 | 754.1 | 55.3 | 12.9 | ..... | SW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | Corpl. Daly, R. E. |
| Dartmoor | 28.24 | 717.3 | 29.71 | 754.6 | 45.0 | 7.2 | ..... | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Showery..... | Alexander Watt. |
| Donaghadee | 29.48 | 748.8 | 29.52 | 749.8 | 47 | 8.3 | ..... | W | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | J. Mac Gowan. |
| Dover | 29.74 | 755.4 | 29.72 | 754.9 | 47 | 8.3 | ..... | WSW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | ¾ clouded... | J. Costello. |
| Falmouth, Observatory | 29.52 | 749.8 | 29.75 | 755.6 | 51.9 | 11.1 | ..... | SW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| Fort Napier, (Natal) | 27.73 | 704.3 | 30.05 | 763.3 | 72.0 | 22.2 | ..... | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.76 | 755.9 | 29.99 | 761.7 | 86 | 30.0 | ..... | W | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | 29.45 | 748.0 | 46.5 | 8.1 | ..... | SW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.23 | 767.8 | 30.28 | 769.1 | 64.2 | 17.9 | ..... | W | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.27 | 743.4 | 29.47 | 748.5 | 48.7 | 9.3 | ..... | WSW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | D. G. Maclean. |
| Great Yarmouth | 29.65 | 753.1 | 29.66 | 753.4 | 46 | 7.8 | ..... | S | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | Misty..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.51 | 749.5 | 29.68 | 753.9 | 56.7 | 13.7 | ..... | SW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff, for G. B. Airy. |
| Guérnsey | 29.58 | 751.3 | 29.80 | 756.9 | 52.5 | 11.4 | ..... | WSW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | 29.72 | 754.9 | 29.85 | 758.2 | 54 | 12.2 | ..... | SW | ..... | ..... | 4 | ..... | 2ck | ..... | ..... | 0.22 | 5.6 | Showery..... | M. P. Moyle. |
| Holyhead | 29.56 | 750.8 | 29.62 | 752.3 | 48 | 8.9 | ..... | SSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast.... | John Tilston. |
| Jersey | 29.56 | 750.8 | 29.85 | 758.2 | 49.0 | 9.4 | ..... | WSW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | ..... | ..... | 56.0 | 13.3 | ..... | SW | 25 | 11.2 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | Misty..... | The Meteorological Of. |
| Leicester, Museum | 29.36 | 745.7 | 29.61 | 752.1 | 51.8 | 11.0 | ..... | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.53 | 750.0 | 29.61 | 752.1 | 60 | 15.6 | ..... | NW | ..... | ..... | 2 | ..... | 3k | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.28 | 743.7 | 29.37 | 746.0 | 48 | 8.9 | ..... | WSW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.06 | 763.5 | 75.5 | 24.2 | ..... | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.37 | 746.0 | 29.56 | 750.8 | 56.7 | 13.7 | ..... | SSW | ..... | ..... | 3 | ..... | 3k;ck | SW | ..... | 0.052 | 1.32 | D. clouds.... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.10 | 739.1 | 29.61 | 752.1 | 56.2 | 13.4 | ..... | W | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.67 | 753.6 | 53 | 11.7 | ..... | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. E. Bellamy. |
| Plymouth | 29.66 | 753.4 | 29.73 | 755.1 | 52.9 | 11.6 | ..... | SW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | John Merrifield. |
| Roche's Point | 29.59 | 751.6 | 29.64 | 752.8 | 47 | 8.3 | ..... | W | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | W. Kennedy. |
| Saint Ann's Head | 29.49 | 749.0 | 29.66 | 753.4 | 49 | 9.4 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 29.32 | 744.7 | 44.8 | 7.1 | ..... | SSW | 15 | 6.7 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.73 | 755.1 | 53.0 | 11.7 | ..... | NNE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | Blank | Blank | Misty..... | W. H. Lyne. |
| Sheffield | 29.36 | 745.7 | 29.64 | 752.8 | 55.0 | 12.8 | ..... | SW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0.03 | 0.8 | D. clouds..... | W. F. Cooper. |
| Siloth Rectory | 29.52 | 749.8 | 29.56 | 750.8 | 52.3 | 11.3 | 81 | SW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | D. clouds..... | Francis Redford, A. M |
| Stonyhurst, Observatory | 29.21 | 741.9 | 29.62 | 752.3 | 49.0 | 9.4 | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Misty..... | Rev. S. J. Perry. |
| Straifield Turgiss | 29.47 | 748.5 | 29.68 | 753.9 | 56.5 | 13.6 | ..... | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Raining..... | C.H.Griffith, F.M.S. |
| Thurso | 29.24 | 742.7 | 29.30 | 744.2 | 49 | 9.4 | ..... | SSW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | John Trotter. |
| Truro, Royal Institution | 29.72 | 754.9 | 29.78 | 756.4 | 54 | 12.2 | ..... | W | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | 29.54 | 750.3 | 29.56 | 750.8 | 48.2 | 9.0 | ..... | SW | 25 | 11.2 | ..... | ..... | 7 | ..... | ..... | Blank | Blank | D. clouds..... | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.96 | 761.0 | 30.00 | 762.0 | 84.9 | 29.4 | 40 | S | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | ..... ..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.62 | 752.3 | 51.0 | 10.5 | 76 | SW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0.02 | 0.5 | Star-light.... | Francis Abbott, F.R.A.S |
| Leith, Restalrig Park | ..... | ..... | 29.50 | 749.3 | 51.0 | 10.6 | ..... | W | ..... | ..... | 4 | ..... | 2k | ..... | ..... | 0.12 | 3.0 | Fine..... | Andrew Gibb. |
| Mauritius, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Meldrum. |
| Melbourne, Observatory | 29.95 | 760.7 | 30.04 | 763.0 | 58.0 | 14.4 | 65 | W | 10 | 4.5 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 29.23 | 742.4 | 40 | 4.4 | ..... | SSW | ..... | ..... | 7 | 0 | 10 | ..... | ..... | 0.3 | 8. | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.32 | 744.7 | 37 | 2.8 | ..... | SE | ..... | ..... | 8 | ..... | 10 | ..... | ..... | ..... | ..... | Sleeting..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 41° 00′, E. 29° 00′ | ..... | ..... | 29.77‡ | 756.1‡ | 51.2 | 10.7 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Sprinkling.. | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| S. S. Amanda, N. 37° 08′, E. 3° 12′ | ..... | ..... | 30.23‡ | 767.6‡ | 60 | 15.6 | W | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | Capt. B. Boyes. |
| Barque Belle-Isle, N. 38° 40′, W. 40° 30′ | ..... | ..... | 30.26‡ | 768.6‡ | 59 | 15.0 | SE | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 3 | NW | D. clouds..... | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Thorne. |
| City of Agra, N. 38° 49′ W. 38° 50′ | ..... | ..... | 30.25‡ | 768.3‡ | 56.5 | 13.6 | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | N | Squally..... | Capt. Thos. Young. |
| Barque Commewyne, N. 48° 40′, W. 15° 58′ | ..... | ..... | 29.60‡ | 751.8‡ | 51.5 | 10.8 | WSW | ..... | ..... | 7 | ..... | 4 | ..... | ..... | ..... | ..... | Squally..... | Capt. A. Buchan. |
| Barque Fedalina, N. 22° 20′, W. 36° 30′ | ..... | ..... | 30.20 | 767.1 | 70 | 21.1 | ENE | ..... | ..... | 4 | ..... | 5 | ..... | WSW | 2 | NE | Squally..... | Capt. H. L. Fox. |
| Barque Merlole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam, N. 2° 11′, E. 102° 12′ | ..... | ..... | 29.87‡ | 758.7‡ | 83 | 28.3 | NW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Misty..... | Capt. Barlow. |
| S. S. Strathleven, N. 37° 18′, E. 3° 32′ | ..... | ..... | 30.14‡ | 765.5‡ | 59 | 15.0 | WNW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'r 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.28 | 667.5 | 30.00 | 762.0 | 66.2 | 19.0 | 85 | NE | ..... | ..... | 1 | 8cs | 1k | ..... | ..... | 0 | 0 | ..... | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.6 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.05 | 763.3 | 30.10 | 764.5 | 35.1 | 1.7 | 69 | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Faröe | 29.80 | 759.1 | 29.91 | 759.6 | 34.5 | 1.4 | 83 | SSE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.63 | 752.5 | 29.67 | 753.6 | 27.3 | — 2.6 | 77 | SSE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Faröe) | 28.93 | 734.7 | 28.96 | 735.6 | 41.7 | 5.4 | 95 | SSW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | |
| Vestervig | 29.78 | 756.4 | 29.95 | 760.7 | 33.8 | 1.0 | 79 | SE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.36 | 745.7 | 29.91 | 759.7 | 55.0 | 12.8 | 83 | SW | ..... | ..... | 2 | ..... | 8 | NW | W | 0.071 | 1.8 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 29.82 | 757.4 | 29.93 | 760.2 | 47.8 | 8.8 | 89 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bonvallet, Director. |
| Avignon, Normal School | 29.96 | 760.9 | 30.04 | 762.9 | 60.1 | 15.6 | 58 | NNW | ..... | ..... | 3 | ..... | 2 | ..... | NW | 0.059 | 1.5 | Slightly cl'dy | M. Giraud, Director. |
| Bar-sur-Seine | 29.43 | 747.4 | 29.96 | 761.0 | 50.5 | 10.3 | 67 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | O. Saillard, Director. |
| Beauvais, Normal School | 29.59 | 751.6 | 29.87 | 758.8 | 53.6 | 12 | 79 | SSW | ..... | ..... | 1 | ..... | 5 | ..... | WSW | 0.04 | 1. | Cloudy | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.12 | 739.7 | 30.02 | 762.4 | 53.2 | 11.8 | 49 | SSW | ..... | ..... | 3 | ..... | 5 | ..... | S | 0 | 0 | Cloudy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.22 | 742.2 | 30.14 | 765.6 | 55.4 | 13 | 52 | W | ..... | ..... | 2 | ..... | ck | W | W | 0 | 0 | ..... | M. Marlot, Director. |
| Bourges, Normal School | 29.36 | 745.8 | 29.94 | 760.5 | 52.2 | 11.2 | 90 | W | ..... | ..... | 8 | ..... | 10 | W | W | 0.059 | 1.5 | Raining | A. Waquet, Director. |
| Brest, Naval Observatory | 29.57 | 751.1 | 29.82 | 757.3 | 55.8 | 13.2 | 66 | W | ..... | ..... | 3 | ..... | 8 | ..... | W | 0.226 | 5.75 | ..... | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.69 | 754.2 | 30.11 | 764.7 | 61.9 | 16.6 | 58 | W | ..... | ..... | 2 | ..... | 2 | E | NW | 0 | 0 | Slightly cl'dy | September, Director. |
| Caen, Normal School | 29.77 | 756.1 | 29.84 | 758.0 | 56.8 | 13.8 | 58 | SW | ..... | ..... | 2 | ..... | 8 | ..... | SW | 0 | 0 | Very cloudy | M. Lair, Director. |
| Chartres, Normal School | 29.30 | 744.1 | 29.87 | 758.6 | 52.2 | 11.2 | 86 | SW | ..... | ..... | 3 | ..... | 10 | ..... | NE | 0.08 | 2. | Raining | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.67 | 753.5 | 29.98 | 761.6 | 48.9 | 9.4 | 66 | SW | ..... | ..... | 4 | ..... | 2 | NE | NE | ..... | ..... | Slightly cl'dy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 29.66 | 727.9 | 30.02 | 762.4 | 53.4 | 11.9 | 56 | SW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.138 | 3.5 | ..... | Alluard, Director. |
| Commercy, Normal School | 29.12 | 739.7 | 29.99 | 761.7 | 50.0 | 10 | 66 | W | ..... | ..... | 3 | ..... | 8kn | ..... | W | 0 | 0 | Cloudy | Dr. Coulet, Director. |
| Commune de Grêasque* | 28.90 | 734.0 | 30.04 | 763.0 | 54.3 | 12.4 | 48 | NW | ..... | ..... | 4 | ..... | 5 | ..... | NW | 0 | 0 | ½ covered | M. Kina, Director. |
| Grenoble, Normal School | 29.30 | 744.3 | 30.07 | 763.8 | 55.4 | 13 | 75 | ESE | ..... | ..... | 1 | ..... | 8ck | NW | ..... | 0 | 0 | Cloudy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.79 | 756.6 | 30.00 | 762.1 | 54.0 | 12.2 | 90 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.185 | 4.7 | Covered | Mouillot, Director. |
| Le Mans, Normal School | 29.61 | 752.0 | 29.91 | 759.8 | 53.1 | 11.7 | 90 | WNW | ..... | ..... | 3 | ..... | 8 | ..... | WNW | 0.030 | 0.75 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.15 | 740.5 | 30.08 | 764.0 | 54.1 | 12.3 | 65 | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.020 | 0.50 | Cloudy | Baudry, Director. |
| Lorient, Naval Observatory | 29.82 | 757.4 | 29.92 | 759.9 | 57.6 | 14.2 | 91 | SW | ..... | ..... | 2 | ..... | ..... | ..... | SW | 0.236 | 6.0 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Mirecourt, Normal School | 28.92 | 734.6 | 30.06 | 763.5 | 51.8 | 11 | 54 | NNW | ..... | ..... | 3 | ..... | n | ..... | SSE | 0 | 0 | ..... | M. Barbier, Director. |
| Nîmes, Normal School | 29.82 | 757.5 | 30.02 | 762.6 | 62.6 | 17 | 44 | W | ..... | ..... | 1 | ..... | 2 | ..... | W | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 29.01 | 736.8 | 30.08 | 764.0 | 55.4 | 13 | 66 | N* | ..... | ..... | 4 | ..... | s | N | N | 0.35 | 9. | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 25.08 | 637.0 | ..... | ..... | 34.3 | 1.3 | 100 | SW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.205 | 5.2 | Foggy | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.00 | 762.1 | 30.04 | 762.9 | 54.7 | 12.6 | 88 | WSW | ..... | ..... | 8 | ..... | 10 | WSW | WSW | 0.31 | 8. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.73 | 755.1 | 29.82 | 757.3 | 54.0 | 12.2 | 77 | WNW | ..... | ..... | 2 | ..... | 8 | ..... | W | 0.028 | 0.7 | Very cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.82 | 757.5 | 29.85 | 758.2 | 50.4 | 10.2 | 76 | SW | ..... | ..... | 4 | ..... | 10 | SW | SW | 0.024 | 0.60 | Rainy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.74 | 755.5 | 29.91 | 759.7 | 48.4 | 9.1 | 97 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | SSW | 0.213 | 5.4 | Raining | E. Renou, Director. |
| Tarbes, Normal School | 29.03 | 737.4 | 30.11 | 764.7 | 59.0 | 15 | 78 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Huguet, Director. |
| Versailles Observatory | 29.40 | 746.8 | 29.89 | 759.3 | 48.6 | 9.2 | 97 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.126 | 3.17 | Raining | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.38 | 746.3 | 30.11 | 764.9 | 57.2 | 14 | 78 | S | ..... | ..... | 1 | ..... | 2 | ..... | W | 0 | 0 | Slightly cl'dy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.79 | 756.7 | 29.82 | 757.4 | 75.6 | 24.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.87 | 22. | ..... | L'Abbé Marchés |
| Lyons Obs'y, (Park Station) | 29.45 | 748.1 | 30.07 | 763.8 | 55.0 | 12.8 | 52 | ESE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.073 | 1.87 | Covered | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 24.86 | 631.5 | 30.18 | 766.5 | 45.5 | 7.5 | 65 | SW | 18.6 | 8.3 | ..... | ..... | 2 | ..... | W | 0.031 | 0.8 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.97 | 761.2 | 60.8 | 16.0 | 73 | SE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cov. | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.62 | 752.3 | ..... | ..... | 48.4 | 9.1 | 99 | SSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.055 | 1.4 | Raining | Marié Davy, Director. |
| Perpignan | 29.99 | 761.7 | 30.10 | 764.4 | 61.3 | 16.3 | 52 | NW | 15.0 | 6.7 | ..... | ..... | 2 | ..... | NW | Inap. | Inap. | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.60 | 671.5 | ..... | ..... | 30.0 | — 1.1 | ..... | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 1.083 | 27.5 | Snowy | Gen'l de Nansouty. |
| Toulouse, Observatory | 29.44 | 747.7 | 30.16 | 766.1 | 57.9 | 14.4 | 76 | NW. | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | M. Mercadier Juller. |
| Tours | 29.66 | 753.3 | 29.85 | 758.3 | 55.4 | 13.0 | 88 | SW | ..... | ..... | 3 | ..... | 10 | ..... | W | 0.083 | 2.1 | ..... | Cousin-Marquete. |
| Zi-Ka-Wei, (near Shanghai) | 29.91 | 759.6 | 29.93 | 760.3 | 68.5 | 14.7 | 92 | ENE | 6.3 | 2.8 | ..... | 3cs | ..... | ..... | ..... | 0.091 | 2.3 | Fair | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:03 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grêasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185 millimeters has been added. *Bouches-du-Rhône.

1879.—March 29.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-12. | Clouds. Amount. Up'er 0-10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.13 | 740.0 | 29.98 | 761.4 | 48.7 | 9.3 | 70 | NE | | | 2 | | 8 | E | | 0 | 0 | | Prof. Dr Hoh.* |
| Berlin | 29.88 | 758.9 | 30.06 | 763.4 | 39.0 | 3.9 | 78 | SE | | | 1 | | 10 | | | 0.012 | 0.3 | | Prof. Arndt. |
| Breslau | 29.52 | 749.9 | 30.06 | 763.4 | 36.7 | 2.6 | 78 | ENE | | | 2 | | 10 | | | 0.030 | 0.74 | | Royal University Obs'y |
| Carlsruhe | 29.58 | 751.4 | 29.62 | 752.3 | 51.4 | 10.8 | 63 | SW | | | 2 | | 10 | SW | | 0.055 | 1.4 | Light rain | Albert Sens. |
| Cassel | 29.36 | 745.6 | 29.96 | 761.0 | 50.9 | 10.5 | 64 | SE | | | 2 | | 5 | SW | | 0.056 | 1.42 | | Dr. H. Möhl. |
| Crefeld | 29.53 | 750.1 | 29.69 | 754.2 | 55.9 | 13.3 | 44 | SW | | | 5 | | 8 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.65 | 753.1 | 30.02 | 762.6 | 50.5 | 10.3 | | SSW | | | 1 | | 8 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.60 | 726.5 | 30.06 | 763.4 | 48.6 | 9.2 | 79 | SE | | | 4 | | 8 | SE | | 0.296 | 7.5 | | M. Wilhelm. |
| Hamburg | 29.89 | 759.2 | 29.96 | 761.0 | 42.4 | 5.8 | 67 | SE | | | 4 | | 3 | | | 0 | 0 | Fair | Captain F. Hegemann. |
| Kiel | 29.97 | 761.2 | 29.98 | 761.6 | 37.9 | 3.3 | 74 | ESE | | | 6 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.10 | 764.4 | 30.18 | 766.6 | 35.8 | 2.1 | 62 | E | | | 3 | | 2 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 30.05 | 763.3 | 43.7 | 6.5 | | SE | | | 2 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.60 | 751.8 | 30.03 | 762.7 | 44.1 | 6.7 | 74 | SSE | | | 1 | | 6 | | | 0.016 | 0.4 | Squally | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 30.15 | 765.7 | 30.18 | 766.9 | 31.5 | 0.3 | 58 | E | | | 2-3 | | 0 | | | | | | Skalweit. |
| Neufahrwasser | 30.16 | 766.1 | 30.17 | 766.4 | 33.4 | 0.8 | 68 | NNE | | | 3 | | 4 | W | | 0 | 0 | | A. Lothes. |
| Posen | 29.80 | 756.8 | 30.10 | 764.4 | 36.3 | 2.4 | 69 | E | | | 5 | | 10 | | | 0.280 | 7.1 | Snowing | Dr. Magener. |
| Strassburg (in Alsace) | 29.49 | 749.1 | 30.05 | 763.2 | 52.9 | 11.6 | 61 | SW | | | 3 | | 8 | W | | 0.014 | 0.34 | | Imp. University Observatory. |
| Stuttgart | 29.04 | 737.7 | 29.99 | 761.8 | 50.4 | 10.2 | 60 | W | | | 1 | | 7 | W | | 0.102 | 2.6 | | Prof. Schoder. |
| Treves, (Trier) | 29.41 | 746.9 | 29.93 | 760.1 | 52.7 | 11.5 | 48 | SW | | | 7 | | 10 | | | 0.114 | 2.89 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.51 | 724.1 | 30.04 | 763.1 | 44.8 | 7.1 | 77 | W | 2 | 1 | | | 10 | | W | 0 | 0 | Foggy | Dr. Van Bebber. |
| Wustrow, Naval School | 30.02 | 762.6 | 30.05 | 763.2 | 35.1 | 1.7 | 90 | ESE | | | 3 | | 10s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.32 | 744.8 | 29.72 | 754.8 | 56.3 | 13.5 | | NE | | | 2.0 | | | | | | | Rainy | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.84 | 758.0 | 29.89 | 759.3 | 79.3 | 26.3 | 61 | W | 14 | 6.3 | | | 4 | | | 0 | 0 | D. clouds | |
| Deesa | 29.32 | 744.6 | 29.78 | 756.3 | 94.8 | 34.9 | 15 | WNW | 6.9 | 3.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.78 | 756.4 | 29.82 | 757.4 | 82.6 | 28.1 | 71 | NW | 16 | 7.2 | | | 4 | WNW | | 0 | 0 | D. clouds | |
| Lahore | 29.02 | 737.1 | 29.75 | 755.6 | 88.6 | 31.4 | 30 | W | 1.1 | 0.5 | | | 4 | | | 0 | 0 | Blue sky | |
| Belgaum | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.82 | 732.1 | 29.71 | 754.5 | 86.8 | 30.4 | 17 | NW | 4.1 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Agra | 29.21 | 742.0 | 29.76 | 755.9 | 92.7 | 33.7 | 16 | W | | | | | | | | 0 | 0 | | |
| Nagpur | 28.76 | 730.5 | | | | | | N | 3.7 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.35 | 745.4 | 29.72 | 754.9 | 86.7 | 30.4 | 42 | NW | 5.0 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.42 | 747.4 | 29.73 | 755.1 | 92.2 | 33.4 | 22 | NW | 4.4 | 2.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.50 | 749.4 | 29.68 | 753.8 | 99.2 | 37.3 | 11 | W | 4.5 | 2.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.74 | 704.5 | 29.99? | 761.8? | 91.8 | 33.2 | 12 | WNW | 12.1 | 5.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.64 | 752.7 | 29.72 | 754.8 | 88.4 | 31.3 | 56 | S | 4.3 | 1.9 | | | | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.69 | 754.2 | 29.72 | 754.8 | 80.8 | 27.1 | 91 | SSW | 5.0 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.28 | 743.9 | 29.66 | 753.4 | 89.7 | 32.1 | 24 | W | 6.0 | 2.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.70 | 754.5 | 29.80 | 756.8 | 81.9 | 27.7 | 83 | SW | 7.6 | 3.4 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.37 | 746.0 | 29.71 | 754.6 | 76.1 | 24.5 | 68 | NE | 1.4 | 0.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.45 | 722.7 | 29.78 | 756.5 | 93.9 | 34.4 | 10 | NW | 3.6 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.5 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instru'm'tal error and temperature. Inches. | Barometer. Corrected for instru'm'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.52 | 749.8 | 29.93 | 760.3 | 58.1 | 14.5 | 54 | SE | 1.8 | 0.8 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.37 | 745.9 | 29.89 | 759.2 | 56.7 | 13.7 | 62 | WSW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.82 | 757.4 | 29.93 | 760.2 | 58.3 | 14.6 | 64 | NW | 0.7 | 0.3 | ..... | ..... | 7 | E | ..... | 0.028 | 0.7 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 29.00 | 736.7 | 29.91 | 759.7 | 55.6 | 13.1 | 67 | ESE | 2.5 | 1.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.76 | 755.9 | 29.95 | 760.8 | 58.1 | 14.5 | 65 | SW | 4.9 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 28.01 | 711.4 | 29.92 | 759.9 | 55.4 | 13.0 | 41 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.90 | 759.4 | 29.95 | 760.6 | 53.8 | 12.1 | 82 | N | 15.0 | 6.7 | ..... | ..... | 2 | ..... | ..... | 0.236 | 6.0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.67 | 753.6 | 29.93 | 760.1 | 60.8 | 16.0 | 51 | NE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci |
| Leghorn | 29.51 | 757.2 | 29.90 | 759.4 | 57.2 | 14.0 | 70 | WNW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Rome | 29.70 | 754.4 | 29.87 | 758.8 | 64.4 | 18.0 | 61 | W | 1.8 | 0.8 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Lecce | 29.56 | 750.7 | 29.81 | 757.1 | 60.8 | 16.0 | 69 | NNE | 13.6 | 5.8 | ..... | ..... | 5 | N | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.93 | 734.8 | 29.81 | 757.2 | 61.9 | 16.6 | 77 | NW | 8.1 | 3.6 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.77 | 756.2 | 29.97 | 761.1 | 59.7 | 15.4 | 59 | NW | ..... | ..... | 4 | ..... | 3 | N | ..... | 0.189 | 4.8 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.65 | 753.0 | 29.90 | 759.5 | 54.3 | 12.4 | 93 | WSW | 1.3 | 0.6 | ..... | ..... | 10 | WSW | ..... | 0.713 | 18.1 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.73 | 755.2 | 29.80 | 757.0 | 61.7 | 16.5 | 61 | NNE | 9.8 | 4.4 | ..... | ..... | 6 | N | ..... | 0.024 | 0.1 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.82 | 744.8 | 29.88 | 758.9 | 64.9 | 18.3 | 57 | NE | 3.1 | 1.4 | ..... | ..... | 4 | ..... | ..... | 0.039 | 1.0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Moudovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 29.73 | 755.1 | 29.75 | 755.6 | 59.4 | 15.2 | 93 | SSW | 17.1 | 7.6 | ..... | ..... | 10n | ..... | ..... | 0.710 | 18.03 | Rainy | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.60 | 751.8 | 29.80 | 756.9 | 60.2 | 15.7 | 90 | SW | 8.9 | 4.0 | ..... | ..... | 4s | ..... | ..... | 0.490 | 12.45 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.83 | 757.7 | 29.90 | 759.4 | 57.7 | 14.3 | 71 | SSW | 22.1 | 9.9 | ..... | 2cs | 0 | ..... | ..... | 0.315 | 8.00 | ..... | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 26.10 | 689.2 | 30.22 | 767.5 | 55.0 | 12.8 | 45 | Calm | ..... | ..... | 0 | 6 | ..... | SW | ..... | 0 | 0 | ½ clouded | Prof. L. Perez. |
| Leon | 24.52 | 622.8 | 30.20 | 767.2 | 61.2 | 16.2 | 62 | Calm | ..... | ..... | 0 | 10c | 0 | ..... | ..... | 0 | 0 | ..... | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.16 | 588.2 | 30.20 | 767.0 | 53.6 | 12.0 | 38 | Calm | 0 | 0 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Solar halo | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 55.2 | 12.9 | 40 | WNW | ..... | ..... | 1 | 6c | 3s | S | S | 0 | 0 | Cloudy | M. V. de Leon, M. E. |
| Tlacotalpam | 30.00 | 762.0 | 30.01 | 762.3 | 74.8 | 23.8 | 92 | ESE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Misty | M. M. Chazaro. |
| San Luis Potosi | 24.36 | 618.1 | 30.32 | 770.1 | 59.0 | 15.0 | 78 | ESE | ..... | ..... | 1 | 10 | 0 | ..... | W | 0 | 0 | Covered | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.45 | 595.5 | 30.21 | 767.3 | 51.1 | 10.6 | 53 | NNE | 0.9 | 0.4 | ..... | 1 | 1 | ..... | WSW | 0 | 0 | ..... | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.45 | 722.6 | 30.11 | 764.9 | 72.9 | 22.7 | 44 | NE | ..... | ..... | 1 | 0 | 8 | ..... | SW | 0 | 0 | Misty | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,593 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201m., or 7,221.3 ft.; Durango, 1,870 m., or 6,136.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.80 | 757.0 | 29.80 | 757.0 | 45.0 | 7.2 | ..... | S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Groningen | 29.78 | 756.3 | 29.83 | 757.7 | 47.3 | 8.5 | ..... | S | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Helder | 29.76 | 755.8 | 29.76 | 755.8 | 44.2 | 6.8 | ..... | E | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.102 | 2.6 | ..... | ..... |
| Hellevoetsluis | 29.80 | 756.9 | 29.80 | 756.9 | 44.8 | 7.1 | 94 | SSW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Utrecht | 29.79 | 756.6 | 29.84 | 757.8 | 48.0 | 8.9 | 68 | SSW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.020 | 0.5 | Very cloudy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.72 | 754.8 | 29.77 | 756.2 | 39.2 | 4.0 | 58 | SSE | 14.1 | 6.3 | ..... | ..... | 4 | ..... | ..... | 0.091 | 2.3 | Rain & snow | |
| Brönö | 29.96 | 760.9 | 30.00 | 761.9 | 31.1 | — 0.5 | 45 | SSE | 27 | 12 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 30.06 | 763.6 | 30.22 | 767.6 | 29.7 | — 1.3 | 69 | SSE | 11 | 5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.01 | 762.3 | 30.06 | 763.4 | 29.1 | — 1.6 | 72 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.05 | 763.3 | 30.24 | 768.2 | 59.4 | 15.2 | 85 | W | 2.5 | 1.1 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.28 | 743.7 | 30.32 | 770.0 | 57.2 | 14.0 | 69 | SSW | 4.9 | 2.2 | ..... | ..... | 9 | SW | ..... | 0 | 0 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.25 | 768.3 | 30.34 | 770.5 | 62.6 | 17.0 | 59 | SE | 3.8 | 1.7 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.98 | 761.5 | 30.34 | 770.7 | 57.0 | 13.9 | 68 | SSW | 19.9 | 8.9 | ..... | ..... | 7 | SW | ..... | 0.083 | 2.1 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.20 | 767.1 | 30.27 | 768.9 | 64 4 | 18.0 | 67 | W | 11.2 | 5.0 | ..... | ..... | 3 | ..... | ..... | 0.186 | 4.8 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa Com'd.t. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande,Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, Ajuda, Gulf of Guinea | ..... | ..... | 29.96 | 760.9 | 83.7 | 28.7 | ..... | SE | ..... | ..... | 3 | ..... | 3 | ..... | NW | 2 | SE | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria.Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto de S. Jose de Bissao, Senegambia | ..... | ..... | 29.89 | 759.3 | 82.4 | 28 | ..... | SW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | ..... | D. clouds | A. Ferreira, 2d Lt. |
| Sá da Bandeira, St. Paul de Loando | ..... | ..... | 29.76 | 755.8 | 86.0 | 30.0 | ..... | NW | ..... | ..... | 2 | ..... | 7 | ..... | W | ..... | ..... | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 29.93 | 760.2 | 67.1 | 19.5 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 1 | ..... | Raining | J. M. T. Guimaraes, Com'd't. |
| Duque da Terceira, Santiago, Cape Verd I. | ..... | ..... | 30.24 | 768.2 | 79.7 | 26.5 | ..... | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 2 | ..... | Blue sky | C.C.da Fonseca Ferreira, Comd't |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.63 | 752.7 | 30.08 | 763.9 | 34.9 | 1.6 | 76 | ENE | 7 | 3 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.79 | 756.7 | 30.23 | 767.9 | 32.0 | 0.0 | 71 | Calm | 0 | 0 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 30.07 | 763.8 | 30.33 | 770.3 | 30.9 | — 0.6 | 64 | NE | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light snow. | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.36 | 771.2 | 30.38 | 771.6 | 31.3 | — 0.4 | 76 | NE | 11 | 5 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.39 | 746.5 | 30.06 | 763.5 | 29.8 | — 1.2 | 88 | ENE | 9 | 4 | ..... | ..... | 10ks;n | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolalev | 29.83 | 757.7 | 29.90 | 759.5 | 38.1 | 3.4 | 87 | NE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.81 | 757.2 | 29.83 | 757.7 | 46.2 | 7.9 | 92 | ENE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.82 | 757.3 | 30.39 | 772.0 | 31.3 | — 0.4 | 52 | S | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.80 | 756.8 | 30.01 | 762.2 | 36.0 | 2.2 | 79 | ESE | 22 | 10 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.49 | 774.5 | 30.51 | 775.0 | 38.1 | 3.4 | 70 | Calm | 0 | 0 | ..... | ..... | 2ks | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.51 | 724.1 | 29.89 | 759.1 | 67.5 | 19.7 | 37 | Calm | 0 | 0 | ..... | ..... | 1c | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.11 | 764.9 | 30.03 | 762.8 | 46.2 | 7.9 | 56 | NNE | 7 | 3 | ..... | ..... | 4s | ..... | ..... | ..... | ..... | Solar corona | Capt. Wisganow. |
| Krotkowo* | 29.80 | 756.8 | 30.30 | 769.6 | 28.0 | — 2.2 | 65 | NNE | 18 | 8 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Light clouds | Cand. Fatianow. |
| Kasan | 30.08 | 764.1 | 30.37 | 771.4 | 28.9 | — 1.7 | 48 | NE | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.26 | 743.2 | 30.30 | 769.5 | 19.6 | — 6.9 | 46 | N | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.62 | 752.4 | 29.85 | 758.2 | 70.2 | 21.2 | 32 | WNW | 11 | 5 | ..... | ..... | 2ks | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.31 | 719.2 | 30.01 | 762.3 | 55.4 | 13.0 | 98 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Teich, A. M. |
| Barnaul | 29.44 | 747.8 | 29.97 | 761.2 | 23.4 | — 4.8 | 71 | SW | 4 | 2 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.54 | 750.2 | 29.84 | 758.0 | 23.4 | — 4.8 | 89 | S | 2 | 1 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Snowing | |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 29.63 | 752.7 | 29.78 | 756.3 | 48.4 | 9.1 | 62 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.61 | 752.0 | 29.71 | 754.5 | 36.9 | 2.7 | 74 | Calm | 0 | 0 | ..... | ..... | 6n | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount— and generally the kind of cloudiness— without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.98 | 761.6 | 30.09 | 764.3 | 58.1 | 14.5 | 48 | SSW | 3.0 | 1.33 | ..... | ..... | 1k | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 30.04 | 763.0 | 30.11 | 764.8 | 69.4 | 20.8 | 54 | NW | 2.3 | 1.02 | ..... | 2? | 0 | E | ..... | 0.236 | 6.0 | Almost cov? | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.21 | 691.2 | ..... | ..... | 52.7 | 11.5 | 76 | SW | 10.2 | 4.58 | ..... | 0 | 7 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez |
| Madrid, Royal Oservatory | 27.98 | 710.8 | ..... | ..... | 57.7 | 14.3 | 60 | SW | 18.6 | 8.33 | ..... | 1 | 0 | NW | ..... | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 30.06 | 763.4 | 30.20 | 767.1 | 72.5 | 22.5 | 50 | NNE | 0.6 | 0.25 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.19 | 741.5 | 30.10 | 764.6 | 51.6 | 10.9 | 86 | SW | 16.1 | 7.2 | ..... | 0 | 10 | ..... | ..... | 0.157 | 4.0 | Light rain | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.06 | 763.4 | 30.12 | 765.1 | 68.5 | 20.3 | 88 | NE? | 0 | 0 | ..... | 6c | 0 | ..... | ..... | 0 | 0 | Fair | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.79 | 756 8 | 29.84 | 758.1 | 84.6 | 29.0 | 74 | ESE | 6.7 | 3.0 | ..... | ..... | 2s | ..... | E | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.23 | 767.8 | 30.33 | 770.3 | 61.0 | 16.1 | 60 | N | 3.6 | 1.6 | ..... | 3 | 4 | WSW | N | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I | 29.89 | 759.2 | 29.98 | 761.5 | 77.4 | 25.2 | 87 | S? | 0 | 0 | ..... | 8kn | 6kn | S | S | 0 | 0 | Overcast | Leonardo de Tejada, Ch'f Eng'r. |

Note.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.43 | 772.8 | 30.46 | 773.8 | 20.5 | — 6.4 | ..... | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.36 | 771.1 | 30.41 | 772.4 | 27.3 | — 2.6 | 70 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.33 | 770.3 | 30.38 | 771.6 | 27.7 | — 2.4 | 75 | SE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 30.16 | 766.0 | 30.34 | 770.5 | 29.3 | — 1.5 | 80 | ENE | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0.020 | 0.5 | ..... | |
| Wisby | 30.17 | 766.2 | 30.28 | 767.7 | 32.0 | 0.0 | 67 | ESE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.25 | 768.4 | 30.33 | 770.3 | 33.1 | 0.6 | 80 | ESE | 7.4 | 3.3 | ..... | ..... | 5 | ..... | ESE | 0.00 | 0.01 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.62 | 726.8 | 30.05 | 763.2 | 54.3 | 12.4 | 53 | WSW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0.154 | 3.9 | Cloudy..... | The Observatory. |
| Zurich | 28.41 | 721.5 | 30.06 | 763.6 | 48.2 | 9.0 | 76 | SE | ..... | ..... | 1 | ..... | 5 | ..... | SW | 0.339 | 8.6 | Cloudy..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +2.5 mm.; Thermometer, +2.9 Cent.; Relative Humidity, —5 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.78 | 756.3 | 49.6 | 9.8 | 86 | N | 13 | 6.0 | ..... | 10 | ..... | N | 0.772 | 19.6 | | | |
| Fao, Persian Gulf | ..... | ..... | 30.24 | 768.0 | 77.0 | 25.0 | ..... | NW | ..... | ..... | 2 | 0 | ..... | ..... | ..... | ..... | ..... | | The Observatory. |
| Valona | ..... | ..... | 29.83 | 757.7 | 59.5 | 15.3 | ..... | NW | ..... | ..... | 2 | 2 | ..... | ..... | 0.12 | 3. | Slightly cl'dy | | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.52 | 749.8 | 29.63 | 752.7 | 75.7 | 24.3 | 70 | SW | ..... | ..... | 3 | 0 | ..... | ..... | 0 | 0 | Blue sky | | Prof. C. V. A. Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.84 | 757.9 | 29.91 | 759.7 | 27.7 | — 2.4 | 73 | SW | 6 | 2.7 | ..... | 4ck | 0 | ..... | ..... | 0 | 0 | Fair | Hon. J Ferguson. |
| Brockville, Ontario | 29.31 | 744.5 | 29.62 | 752.3 | 39 | 3.9 | ..... | S | 3 | 1.3 | ..... | ..... | 10n | ..... | SW | 0.05 | 1.3 | Light rain | W. R. Riga. |
| *Chatham, N B | 29.88 | 758.9 | 29.95 | 760.7 | 19 | — 7.2 | 95 | Calm | 0 | 0 | ..... | 5ck | 2ks | Calm | Calm | 0 | 0 | Fair | G. A. Blair. |
| Charlottetown, P. E. Island | 29.97 | 761.2 | 30.01 | 762.2 | 33 | 0.6 | 93 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.36 | 745.7 | 29.56 | 750.8 | 34.8 | 1 6 | 99 | NW | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.03 | 0.8 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | 30.10 | 764.5 | 30.14 | 765.5 | 48.3 | 9.1 | 93 | N | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | W. H. Bevis. |
| *Father Point, Quebec | 29.67 | 753.6 | 29.69 | 754.1 | 37 | 2.8 | 81 | S | 30 | 13.4 | ..... | 8k | 2s | Calm | Calm | 0 | 0 | Cloudy | J. McWilliams. |
| Fredericton, N. B | 29.94 | 760.5 | 30.01 | 762.2 | 23.9 | — 4.5 | 86 | SE | 1 | 0.4 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Snowing | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.08 | 738.6 | 29.08 | 760.2 | 33 | 0.6 | 94 | NE | 9 | 4.0 | ..... | 5k | 5ks | NE | NE | 0 | 0 | Cloudy | James Stewart. |
| Granton, Ontario | 28.52 | 724.4 | 29.63 | 752.6 | 38 | 3.3 | ..... | N | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.60 | 15.2 | Overcast | James Grant |
| *Halifax, N. S | 29.88 | 758.9 | 30.02 | 762.5 | 34 | 1.1 | 91 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | E | 0 | 0 | Cloudy | F. Allison, M. A. |
| Hamilton, Ontario | 29.25 | 742.9 | 29.62 | 752.3 | 40.7 | 4.8 | 95 | SW | ..... | ..... | 1 | 10cs | 0 | SW | ..... | 0.50 | 12.7 | Overcast | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.22 | 742.2 | 29.56 | 750.8 | 38 | 3.3 | 90 | SE | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0.07 | 1.8 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.08 | 764.0 | 30.12 | 765.0 | 32.2 | 0.1 | 91 | S | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 29.43 | 747.5 | 29.63 | 752.6 | 38 | 3.3 | 90 | S | 28 | 10.3 | ..... | ..... | 10n | ..... | ..... | 0.02 | 0.5 | Light rain | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 28.88 | 733.5 | 29.59 | 751.6 | 35 | 1.7 | 100 | NW | 8 | 3.6 | ..... | ..... | Fog | ..... | NW | 0.23 | 5.8 | Foggy | Rev. R. Mosley. |
| Peterboro, Ontario | 28.79 | 731.3 | 29.56 | 750.8 | 37.7 | 3.2 | 98 | Calm | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Dense fog | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 28.91 | 734.3 | 29.61 | 752.1 | 42 | 5.6 | 100 | NW | 6 | 2.7 | ..... | ..... | 10n | ..... | NW | 0.42 | 10.7 | Threatening | H. Morgan. |
| Port Hastings, N. S | 30.02 | 762.5 | 30.07 | 763.8 | 30.5 | — 0.8 | ..... | SE | 7 | 3.1 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | Peter Grant. |
| Port Stanley, Ontario | 28.99 | 736 3 | 29.64 | 752.8 | 42 | 5.6 | 90 | W | 8 | 3.6 | ..... | ..... | 10n | ..... | SW | 0.52 | 13.2 | Cloudy | M. Payne. |
| *Quebec, Quebec | 29.41 | 747.0 | 29.74 | 755.4 | 35 | 1.7 | 80 | N | ..... | ..... | 1 | ..... | 10n | ..... | N | 0 | 0 | Cloudy | Capt. Ashe, R. N |
| *Rockliffe, Ontario | 29.09 | 738.9 | 29.56 | 750.8 | 34 | 1.1 | 98 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0.27 | 6.9 | Light rain | W. H. McIntyre. |
| St. Andrews, N. B | 29.92 | 760.0 | 29.97 | 761.2 | 34 | 1.1 | 84 | SW | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| St. John, N. B | 29.83 | 757.7 | 30.00 | 762.0 | 33 | 0.6 | 89 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | G. Murdock, C. E. |
| *Saugeen, Ontario | 28.90 | 734.0 | 29.63 | 752.6 | 35 | 1.7 | 97 | N | 6 | 2.7 | ..... | ..... | Fog | ..... | ..... | 0.48 | 12.2 | Foggy | K. Stewart. |
| Stayner, Ontario | 28.78 | 731.0 | 29.57 | 751.1 | 36 | 2.2 | 96 | N | 10 | 4.5 | ..... | ..... | 10n | ..... | N | 0.32 | 8.1 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.84 | 719.8 | 29.63 | 752.6 | 36.3 | 2.4 | 98 | NW | 12 | 5.4 | ..... | ..... | Fog | ..... | ..... | 0.62 | 15.7 | Foggy | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.07 | 763.8 | 30.11 | 764.8 | 33 | 0.6 | 84 | E | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.21 | 741.9 | 29.60 | 751.8 | 36 | 2.2 | 98 | NE | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.54 | 13.7 | Threatening | Magnetic Observatory |
| Windsor, N. S | 29.91 | 759.7 | 30.01 | 762.2 | 34.0 | 1.1 | 90 | ..... | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | Prof. John E Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 32.0 | 0.0 | 90 | SW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upper. 0—10. | Clouds. Amount. Lower. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.55 | 750.6 | 29.79 | 756.7 | 38 | 3.3 | 91 | S | 20 | 8.9 | ..... | ..... | 10s | ..... | S | 0 | 0 | Threatening | |
| Alpena, Michigan | 29.00 | 736.6 | 29.64 | 752.8 | 39 | 3.9 | 82 | NW | 14 | 6.3 | ..... | ..... | 10s | ..... | NW | 0.05 | 1.3 | Cloudy | |
| Atlanta, Georgia | 29.79 | 756.7 | 29.90 | 759.4 | 65 | 18.3 | 63 | W | 18 | 8.0 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Atlantic City, New Jersey | 29.93 | 760.2 | 29.95 | 760.7 | 38 | 3.3 | 100 | SE | 9 | 4.0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Augusta, Georgia | 29.79 | 756 7 | 29.96 | 761.0 | 57 | 13.9 | 87 | S | 3 | 1.3 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Baltimore, Maryland | 29.82 | 757.4 | 29.87 | 758.7 | 46 | 7.8 | 84 | SE | 5 | 2.2 | ..... | ..... | 10n | ..... | W | Inap. | Inap. | Light rain | |
| Barnegat, New Jersey | 29.89 | 759.2 | 29.91 | 759.7 | 37 | 2.8 | 100 | SE | 12 | 5.4 | ..... | ..... | Fog | ..... | Calm | 0.01 | 0.3 | Foggy | |
| Bismarck, Dakota | 28.07 | 713.0 | 29.93 | 760.2 | 47 | 8.3 | 85 | NW | 12 | 5.4 | ..... | 8c | 0 | NW | ..... | 0 | 0 | Cloudy . | |
| Boerne, Texas | 28.74 | 730.0 | 30.06 | 763.5 | 60 | 15.6 | 76 | NW | 1 | 0.4 | ..... | 2cs | 0 | Calm | ..... | 0.04 | 1.0 | Clear | |
| Boise City, Idaho | 27.37 | 695.2 | 30.33 | 770.4 | 46 | 7.8 | 77 | NW | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boston, Massachusetts | 29.78 | 756.4 | 29.94 | 760.5 | 35 | 1.7 | 100 | E | 6 | 2.7 | ..... | ..... | 10s; fg | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Brackettville, Texas | 29.08 | 738.6 | 30.11 | 764.8 | 62 | 16.7 | 88 | W | 1 | 0.4 | ..... | 5ck | 0 | E | ..... | 0.60 | 12.7 | Fair | |
| Breckenridge, Minnesota | 28.85 | 732.8 | 29.86 | 758.4 | 37 | 2.8 | 81 | W | 4 | 1.8 | ..... | 8k | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Brownsville, Texas | 30.05 | 763.3 | 30.10 | 764.5 | 69 | 20.6 | 95 | NE | 4 | 1.8 | ..... | 0 | 8s | ..... | N | 0.01 | 0.3 | Fair | |
| Buffalo, New York | 28.88 | 733.5 | 29.58 | 751.3 | 39 | 3.9 | 100 | SW | 7 | 3.1 | ..... | ..... | 10n; fg | ..... | Calm | 0.35 | 8.9 | Light rain | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 60 | 15.6 | 12 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.42 | 747.2 | 29.71 | 754.6 | 40.6 | 4.7 | 78 | S | 30 | 13.4 | ..... | ..... | 10c | ..... | SW | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.65 | 753.1 | 30.04 | 763.0 | 61 | 16.1 | 77 | W | 3 | 1.3 | ..... | 1c | 0 | W | ..... | 1.13 | 28.7 | Clear | |
| Camp Apache, Arizona | .... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.44 | 646.2 | 30.24 | 768.1 | 60 | 15.6 | 6 | E | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 45 | 7.2 | 31 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp o, California | 27.59 | 700.8 | 30.10 | 766.1 | 42 | 5.6 | 58 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 29.96 | 761.7 | 30.00 | 762.0 | 47 | 8.3 | 85 | NE | 1 | 0.4 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Cape Henry, Virginia | 29.93 | 760.2 | 29.95 | 760.7 | 46 | 7.8 | 77 | S | 10 | 4.5 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Cape Lookout, N. Carolina | 29.99 | 761.7 | 30.01 | 762.2 | 53 | 11.7 | 86 | E | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape May, New Jersey | 29.87 | 758.7 | 29.90 | 759.4 | 41 | 5.0 | 91 | SE | 12 | 5.4 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Castroville, Texas | 29.40 | 746.7 | 30.10 | 764.5 | 65 | 18.3 | 80 | W | 2 | 0.9 | ..... | 5c | 0 | Calm | ..... | 0.53 | 13.5 | Fair | |
| Charleston, South Carolina | 29.93 | 760.2 | 29.98 | 761.5 | 61 | 16.1 | 88 | S | 3 | 1.3 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 24.28 | 616.7 | 30.22 | 767.6 | 47 | 8.3 | 28 | NW | 14 | 6.3 | ..... | 2cs | 0 | W | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.12 | 739.6 | 29.81 | 757.2 | 46 | 7.8 | 69 | W | 5 | 2.2 | ..... | 5c | 0 | NW | ..... | 0.22 | 5.6 | Fair | |
| Cincinnati, Ohio | 29.18 | 741.2 | 29.82 | 757.4 | 56 | 13.3 | 81 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | NW | 0.75 | 19.1 | Threatening | |
| Cleveland, Ohio | 28.98 | 736.1 | 29.79 | 754.4 | 40 | 4.4 | 91 | NW | 9 | 4.0 | ..... | ..... | 10n; fog | ..... | Calm | 0.32 | 8.1 | Light rain | |
| Coleman City, Texas | 28.46 | 722.9 | 30.13 | 765.3 | 59 | 15.0 | 76 | NW | 5 | 2.2 | ..... | 2c | 0 | NW | ..... | 0.03 | 0.8 | Fair | |
| Columbus, Ohio | 28.89 | 733.8 | 29.71 | 754.6 | 53 | 11.7 | 80 | NW | 14 | 6.3 | ..... | ..... | 10ks | ..... | NW | 0.28 | 7.1 | Cloudy | |
| Concho, Texas | 28.35 | 720.1 | 30.00 | 762.0 | 53 | 11.7 | 80 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.74 | 755.4 | 30.20 | 767.1 | 61 | 16.1 | 77 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.26 | 743.2 | 29.90 | 759.4 | 46 | 7.8 | 84 | W | 5 | 2.2 | ..... | 1cs | 0 | W | ..... | 0.23 | 5.8 | Clear | |
| Deadwood, Dakota | 25.50 | 647.7 | ..... | ..... | 46 | 7.8 | 54 | NW | 1 | 0.4 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Decatur, Texas | 29.05 | 737.9 | 30.24 | 768.1 | 55 | 12.8 | 74 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.38 | 746.2 | 30.18 | 766.6 | 57 | 13.9 | 69 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 25.01 | 635.2 | 30.23 | 767.8 | 58 | 14.4 | 27 | NW | 4 | 1.8 | ..... | 2ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Des Moines, Iowa | 29.08 | 738.6 | 29.96 | 761.0 | 45 | 7.2 | 68 | Calm | 0 | 0 | ..... | 5c | 0 | NW | ..... | 0.01 | 0.3 | Fair | |
| Detroit, Michigan | 29.02 | 737.1 | 29.68 | 753.9 | 46 | 7.8 | 84 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | N | 0.25 | 6.3 | Cloudy | |
| Dodge City, Kansas | 27.58 | 700.8 | 29.93 | 760.2 | 43 | 6.1 | 59 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.16 | 740.7 | 29.86 | 758.4 | 43 | 6.1 | 83 | NW | 1 | 0.4 | ..... | 1cs | Fog | Calm | Calm | 0.01 | 0.3 | Fair | |
| Duluth, Minnesota | 29.19 | 741.4 | 29.88 | 758.9 | 37 | 2.8 | 81 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Eagle Pass, Texas | 29.44 | 747.8 | 30.18 | 766.6 | 65 | 18.3 | 89 | NW | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0.84 | 21.3 | Fair | |
| Eastport, Maine | 29.91 | 759.7 | 29.98 | 761.5 | 33 | 0.6 | 85 | S | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 66 | 18.9 | 89 | W | ..... | ..... | 1 | 5cs | 5s | W | Calm | 0.3 | 7.6 | Fair | |
| El Paso, Texas | 26.43 | 671.3 | ..... | ..... | 48 | 8.9 | 56 | Calm | 0 | 0 | ..... | 1c | 0 | E | ..... | Inap. | Inap. | Clear | |
| Erie, Pennsylvania | 28.91 | 734.3 | 29.62 | 752.3 | 41 | 5.0 | 91 | SW | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.40 | 10.2 | Light rain | |
| Escanaba, Michigan | 29.10 | 739.1 | 29.77 | 756.1 | 35 | 1.7 | 70 | NW | 7 | 3.1 | ..... | ..... | 10ks | ..... | NW | 0.12 | 3.0 | Cloudy | |
| Florence, Arizona | 28.68 | 728.5 | 30.28 | 769.1 | 60 | 15.6 | 44 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.96 | 710.2 | ..... | ..... | 37 | 2.8 | 90 | NW | 10 | 4.5 | ..... | 2ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Fort Craig, New Mexico | 25.82 | 655.8 | 29.89 | 759.2 | 41 | 5.0 | 42 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.46 | 646.7 | 30.42 | 772.6 | 48 | 8.9 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Fort Gibson, Indian Ter | 29.61 | 752.1 | 30.15 | 765.8 | 49 | 9.4 | 78 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.98 | 736.1 | 30.28 | 769.1 | 51 | 10.5 | 86 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.51 | 698.7 | ..... | ..... | 48 | 8.9 | 85 | W | 9 | 4.0 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Fair | |
| Fort McKavett, Texas | 27.96 | 710.2 | 29.90 | 759.4 | 55 | 12.8 | 87 | N | 4 | 1.8 | ..... | 5cs | 2s | Calm | Calm | 0.04 | 1.0 | Fair | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.96 | 735.6 | 30.09 | 764.3 | 48 | 8.9 | 78 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Fort Stevenson, Dakota | 28.09 | 713.5 | ..... | ..... | 49 | 9.4 | 77 | SW | 2 | 0.9 | ..... | 7ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Fredericksburg, Texas | 28.46 | 722.9 | 29.99 | 761.7 | 70 | 21.1 | 75 | N | 4 | 1.8 | ..... | 0 | 2ks | ..... | Calm | 0.22 | 5.6 | Fair | |
| Galveston, Texas | 30.15 | 765.8 | 30.19 | 766.8 | 72 | 22.2 | 90 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Graham, Texas | 29.14 | 740.1 | 30.23 | 767.8 | 48 | 8.9 | 85 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Grand Haven, Michigan | 29.11 | 739.4 | 29.76 | 755.9 | 43 | 6.1 | 75 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.17 | 4.3 | Clear | |
| Indianapolis, Indiana | 29.05 | 737.9 | 29.81 | 757.2 | 52 | 11.1 | 79 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.31 | 7.9 | Clear | |
| Indianola, Texas | 30.16 | 766.1 | 30.18 | 766.6 | 72 | 22.2 | 85 | N | 16 | 7.2 | ..... | 2c | 5s | W | N | 0 | 0 | Fair | |
| Jacksboro, Texas | 29.05 | 737.9 | 30.18 | 766.6 | 60 | 15.6 | 77 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.01 | 762.2 | 30.04 | 763.0 | 67 | 19.4 | 89 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.27 | 743 4 | 29.88 | 758.9 | 49 | 9.4 | 81 | W | 5 | 2.2 | ..... | 5c | 0 | NW | ..... | 0.17 | 4.3 | Fair | |
| Key West, Florida | 30.09 | 764.3 | 30.12 | 765.0 | 73 | 22.8 | 81 | N | 7 | 3.1 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 29.94 | 760.5 | 29.96 | 761.0 | 46 | 7.8 | 92 | S | 10 | 4.5 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| Knoxville, Tennessee | 28.94 | 735.1 | 29.93 | 760.2 | 57 | 13.9 | 81 | W | 15 | 6.7 | ..... | ..... | 10ks | ..... | W | 0.01 | 0.3 | Threatening | |
| La Crosse, Wisconsin | 29.12 | 739.6 | 29.85 | 758.2 | 46 | 7.8 | 69 | W | 1 | 0.4 | ..... | 2k | 0 | W | ..... | 0.01 | 0.3 | Clear | |
| La Mesilla, New Mexico | 26.37 | 669 8 | 30.52 | 775.2 | 47 | 8.3 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Laredo, Texas | 29.76 | 755.9 | 30.10 | 764.5 | 62 | 16.7 | 88 | NW | 13 | 5.8 | ..... | 0 | 5s | ..... | Calm | 1.37 | 34.8 | Fair | |
| Leavenworth, Kansas | 29.20 | 741.7 | 30.06 | 763.5 | 45 | 7.2 | 76 | Calm | 0 | 0 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.76 | 755.9 | 30.09 | 764.3 | 71.0 | 21.7 | 18 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.33 | 745.0 | 29.88 | 758.9 | 57 | 13.9 | 81 | W | 7 | 3.1 | ..... | 2k | 2s | SW | Calm | 1.39 | 35.3 | Fair | |
| Lynchburg, Virginia | 29.16 | 740.7 | 29.84 | 757.9 | 48 | 8.9 | 70 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Madison, Wisconsin | 28.82 | 732.0 | 29.79 | 756.7 | 45 | 7.2 | 76 | W | 12 | 5.4 | ..... | 1c | 0 | SW | ..... | 0.26 | 6.6 | Clear | |
| Marquette, Michigan | 29.05 | 737.9 | 29.75 | 755.6 | 39 | 3.9 | 73 | W | 12 | 5.4 | ..... | ..... | 10s | ..... | W | 0.08 | 2.0 | Cloudy | |
| Mason, Texas | 28.62 | 726.9 | 30.36 | 771.1 | 59 | 15.0 | 88 | NW | 7 | 3.1 | ..... | 8cs | 0 | W | ..... | 0.33 | 8.4 | Fair | |
| Memphis, Tennessee | 29.79 | 756 7 | 30.11 | 764.8 | 62 | 16.7 | 83 | SW | 4 | 1.8 | ..... | 0 | Sm'e | ..... | Calm | 0.24 | 6.1 | Clear | |
| Milwaukee, Wisconsin | 29.04 | 737 6 | 29.76 | 755.4 | 45 | 7.2 | 61 | NW | 13 | 5.8 | ..... | 5c | 0 | Calm | ..... | 0.08 | 2.0 | Fair | |
| Mobile, Alabama | 30.12 | 765.0 | 30.16 | 766.1 | 71 | 21.7 | 82 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Montgomery, Alabama | 29.86 | 758.4 | 30.09 | 764.3 | 67 | 19.4 | 90 | W | 8 | 3.6 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | |
| Morgantown, West Virginia | 28.61 | 726.7 | 29.62 | 752.3 | 56 | 13.3 | 69 | S | 9 | 4.0 | ..... | ..... | 10n | ..... | S | Inap. | Inap. | Light rain | |
| Mt. Washington, N. H. | 23.50 | 596.9 | 29.86 | 758.4 | 24 | — 4.4 | 87 | SW | 48 | 21.5 | ..... | ..... | Fog | ..... | SW | 0 | 0 | Foggy | |
| Nashville, Tennessee | 29.47 | 748.5 | 30.00 | 762.0 | 59 | 15.0 | 82 | W | 2 | 0.9 | ..... | 10c | 0 | W | ..... | 0.30 | 7.6 | Cloudy | |
| New Haven, Connecticut | 29 80 | 756.9 | 29.92 | 760.0 | 39 | 3.9 | 82 | N | 2 | 0.9 | ..... | ..... | 10s; hz | ..... | Calm | 0 | 0 | Cloudy | |
| New London, Connecticut | 29.91 | 759.7 | 29.96 | 761.0 | 42 | 5.6 | 74 | N | 2 | 0.9 | ..... | 1c | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Orleans, Louisiana | 30.10 | 764.5 | 30.16 | 766.1 | 71 | 21.7 | 90 | SW | 5 | 2.2 | ..... | 0 | 5s | ..... | SW | 0 | 0 | Fair | |
| Newport, Rhode Island | 29.88 | 758.9 | 29.93 | 760.2 | 37 | 2.8 | 90 | NE | 2 | 0.9 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| New York, New York | 29.75 | 755.6 | 29.93 | 760.2 | 38 | 3.3 | 90 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 29.89 | 759.2 | 29.94 | 760.5 | 47 | 8.3 | 85 | S | 7 | 3.1 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount: Up'er 0—10 | Clouds. Amount: Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.23 | 691.6 | 29.88 | 758.9 | 37 | 2.8 | 67 | NW | 16 | 7.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 30.09 | 764.3 | 30.13 | 765.3 | 50.4 | 10.2 | 93 | N | 3 | 1.3 | | | 10n | | | 0.76 | 19.3 | Light rain | |
| Omaha, Nebraska | 28.86 | 733.0 | 29.96 | 761.0 | 45 | 7.2 | 61 | W | 3 | 1.3 | | 2k | 0 | N | | 0 | 0 | Clear | |
| Oswego, New York | 29.30 | 744.2 | 29.62 | 752.3 | 44 | 6.7 | 76 | SW | 14 | 6.3 | | | 10s | | W | 0 | 0 | Cloudy | |
| Pembina, Dakota | 29.00 | 736 6 | 29.85 | 758.2 | 34 | 1.1 | 90 | Calm | 0 | 0 | | | 10s | | NW | 0 | 0 | Cloudy | |
| Philadelphia, Pa | 29.85 | 758.2 | 29.90 | 759.4 | 38 | 3.3 | 100 | SE | 10 | 4.5 | | | 10s;fg | | Calm | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 29.00 | 736.6 | 30.80 | 782.3 | 65 | 18.3 | 35 | SE | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 18.03 | 458.0 | 30.24 | 768.1 | 27 | — 2.8 | 8 | NE | 40 | 17.9 | | 5cs | 0 | N | | 0 | 0 | Fair | |
| Ploche, Nevada | 24.37 | 619.0 | 30.14 | 765.5 | 45 | 7.2 | 24 | S | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 28.84 | 732.5 | 29.62 | 752.3 | 53 | 11.7 | 86 | SW | 9 | 4.0 | | | 10n | | Calm | 0.13 | 3.3 | Lightrain | |
| Port Huron, Michigan | 28.99 | 736.3 | 29.65 | 753.1 | 42 | 5.6 | 88 | NW | 10 | 4.5 | | | 10s | | Calm | 0.79 | 10.1 | Cloudy | |
| Portland, Maine | 29.89 | 759.2 | 29.95 | 760.7 | 42 | 5.6 | 74 | SE | 8 | 3.6 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Portland, Oregon | 30.12 | 765.0 | 30.22 | 767.6 | 49.5 | 9.7 | 100 | S | 1 | 0.4 | | 0 | Fog | | | 0.07 | 1.8 | Foggy | |
| Prescott, Arizona | 25.08 | 635.8 | 30.39 | 771.9 | 38 | 3.3 | 45 | W | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.21 | 741.9 | 30.02 | 762.5 | 63 | 17.2 | 71 | S | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Punta Rassa, Florida | 30.12 | 765.0 | 30.14 | 765.5 | 70 | 21.1 | 85 | NW | 15 | 6.7 | | 5k | 0 | NW | | 0 | 0 | Fair | |
| Red Bluff, California | 29.84 | 757.9 | 30.20 | 767.1 | 56 | 13.3 | 87 | N | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Rio Grande City, Texas | 29.98 | 761.5 | 30.20 | 767.1 | 68 | 20.0 | 95 | SW | 6 | 2.7 | | 2cs | 5s | W | Calm | 0.15 | 3.8 | Fair | |
| Rochester, New York | 28.98 | 736.1 | 29.58 | 751.3 | 45 | 7.2 | 92 | SW | 11 | 4.9 | | | 10n | | Calm | 0.17 | 4.3 | Light rain | |
| Roseburg, Oregon | 29.66 | 753.4 | 30.23 | 767.8 | 51.5 | 10.8 | 90 | SE | 6 | 2.7 | | 0 | 1s | | Calm | Inap. | Inap. | Fair | |
| Sacramento, California | 30.09 | 764.3 | 30.17 | 766.3 | 57.5 | 14.2 | 87 | SE | 1 | 0 4 | | 0 | 0 | | | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.42 | 747.2 | 29.99 | 761.7 | 55 | 12.8 | 68 | W | 13 | 5.8 | | 8cs;k | 0 | Calm;W | | 0.01 | 0.3 | Fair | |
| St. Marks, Florida | 30.07 | 763.8 | 30.08 | 764.0 | 62 | 16.7 | 94 | NW | 10 | 4.5 | | | 10s | | NW | 0.03 | 0.8 | Cloudy | |
| St. Paul, Minnesota | 29.01 | 736 8 | 29 84 | 757.9 | 41 | 5.0 | 72 | SW | 3 | 1.3 | | 5c | 0 | NW | | 0 | 0 | Fair | |
| Salt Lake City, Utah | 25.97 | 659.6 | 30.30 | 769.6 | 45 | 7.2 | 46 | SE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| San Antonio, Texas | 29.52 | 749.8 | 30.10 | 764.5 | 66 | 18.9 | 60 | N | 2 | 0.9 | | 5c | 0 | N | | 0.23 | 5.8 | Fair | |
| San Diego, California | 30.02 | 762.5 | 30.09 | 764.3 | 64 | 17.8 | 84 | NE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.06 | 738.1 | 29.73 | 755.1 | 45 | 7.2 | 84 | NW | 11 | 4.9 | | | 10s | | NW | 0.04 | 1.0 | Cloudy | |
| Sandy Hook, New Jersey | 29.89 | 759.2 | 29.92 | 760.0 | 38 | 3.3 | 100 | S | 13 | 5.8 | | | Fog | | S | 0 | 0 | Foggy | |
| San Francisco, California | 30.09 | 764.3 | 30.16 | 766.1 | 56.7 | 13.7 | 87 | N | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 23.52 | 597.4 | 30.06 | 763.5 | 41 | 5.0 | 49 | N | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Savannah, Georgia | 29.91 | 759.7 | 30.00 | 762.0 | 63 | 17.2 | 83 | SW | 4 | 1.8 | | 0 | Fog | | Calm | 0 | 0 | Clear | |
| Shreveport, Louisiana | 29.94 | 760.5 | 30.16 | 766.1 | 66 | 18.9 | 95 | NW | 3 | 1.3 | | 0 | 8s | | NW | 0.47 | 11.9 | Fair | |
| Silver City, New Mexico | 24.50 | 622.3 | 30.81 | 782.6 | 40 | 4.4 | 53 | SE | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.00 | 762.0 | 30.04 | 763.0 | 58 | 14.4 | 94 | SE | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.79 | 756.7 | 29.92 | 760.0 | 41 | 5.0 | 82 | NE | 3 | 1.3 | | | 10ks | | SE | 0 | 0 | Cloudy | |
| Stockton, Texas | 27.34 | 694.4 | 30.34 | 770.6 | 48 | 8.9 | 78 | SW | 2 | 0.9 | | 5c | 0 | Calm | | 0 | 0 | Fair | |
| Thatcher's Island, Mass | 29.89 | 759.2 | 29.94 | 760.5 | 38 | 3.3 | 81 | SE | 8 | 3.6 | | | Fog | | SE | 0 | 0 | Foggy | |
| Toledo, Ohio | 29.03 | 737.3 | 29.70 | 754.4 | 50 | 10.0 | 86 | NW | 4 | 1.8 | | | 10s | | Calm | 0.25 | 6.3 | Cloudy | |
| Tucson, Arizona | 27.74 | 704.6 | 30.29 | 769.4 | 62 | 16.7 | 41 | S | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.35 | 758.2 | 30.35 | 770.9 | 49.0 | 9.4 | 85 | E | 6 | 2.7 | | | 10s | | Calm | 0.01 | 0.3 | Cloudy | |
| Unalashka, Aleutian Islands | | | | | 33 | 0.6 | 100 | SE | | | 1 | 0 | 2s | | S | 0.63 | 16.0 | Fair | |
| Uvalde, Texas | 29.31 | 744 5 | 30.12 | 765.0 | 64 | 17.8 | 89 | NE | 1 | 0.4 | | 0 | 5cs | | N | 0.16 | 4.1 | Fair | |
| Vicksburg, Mississippi | 29.93 | 760.2 | 30.18 | 766.6 | 65 | 18.3 | 89 | SW | 4 | 1.8 | | 0 | 8s | | SW | 0.13 | 3.3 | Fair | |
| Virginia City, Montana | 24.46 | 621.3 | 29.94 | 760.5 | 45 | 7.2 | 61 | W | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Visalia, California | 29.80 | 756.9 | 30.18 | 766.6 | 53.3 | 11.8 | 70 | E | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Washington, D. C | 29.78 | 755.1 | 29.85 | 758.2 | 46 | 7.8 | 77 | SE | 11 | 4.9 | | 2ck | 2ks | SW | S | 0 | 0 | Fair | |
| Wickenburg, Arizona | | | | | 53 | 11.7 | 73 | Calm | | | 0 | 0 | 0 | | | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 29.91 | 759.7 | 29.99 | 761.7 | 57 | 13.9 | 87 | SE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.88 | 657.3 | 30.24 | 768.1 | 37 | 2.8 | 63 | NE | 10 | 4.5 | | 8cs | 0 | W | | 0 | 0 | Fair | |
| Wood's Holl, Mass | 29.89 | 759.2 | 29.93 | 760.2 | 40 | 4.4 | 91 | E | 6 | 2.7 | | | Fog | | Calm | 0.02 | 0.5 | Foggy | |
| Yankton, Dakota | 28.72 | 729.5 | 30.01 | 762.2 | 47 | 8.3 | 48 | SW | 7 | 3.1 | | 10k | 0 | NW | | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.94 | 760.5 | 30.11 | 764.8 | 63 | 17.2 | 57 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28 54 | 724.9 | 29.95 | 760.7 | 53 | 11.7 | 60 | | | | | | | | | | | | J. B. Gordon. |
| Havana, Cuba, W. I | 30.07 | 763.8 | 30.12 | 765.0 | 72 | 22.2 | 75 | Calm | 0 | 0 | | 8c | 0 | Calm | | 0 | 0 | Foggy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | | | | | | | | | | | | | | | | | | | James Gall. |
| Medellin, Colombia, S. A | 25.23 | 640.8 | | | 66.5 | 19.2 | 85 | Calm | 0 | 0 | | 4cs | 3ks | | | 0.44 | 11.2 | | Thomas Herran. |
| Navassa, W. I | 29.92 | 760.0 | 30.00 | 762.0 | 79 | 26.1 | | NE | 6.2 | 2.8 | | | | | | 0 | 0 | Fair | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.01 | 762.2 | 30.01 | 762.2 | 79 | 26.1 | 91 | E | | | 2 | | 8ks | | | 0.430 | 10.92 | ½ clouded | C. J. Hering. |
| Santiago de Cuba, W. I | | | | | | | | | | | | | | | | | | | Robert Mason. |
| St. Thomas, W. I | | | | | | | | | | | | | | | | | | | G. O. Gellich. |
| York Factory, B. A | 29.87 | 758.7 | 29.93 | 760.2 | —7.5 | —21.9 | 80 | E | 9 | 4.0 | | 6k | 6k | NE | | 0.03 | 0.8 | Cloudy | J. Fortescue & W. Wood |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1.422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m., Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,336.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.655 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.664 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.45 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.20 | 767.1 | 57 | 13.9 | 55 | 12.8 | ..... | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear. ..... | |
| Navy Yard, Pensacola, Fla. | 30.25 | 768.3 | 70 | 21.1 | 70 | 21.1 | 90 | W | 15 | 6.7 | ..... | ..... | 10 | ..... | NW | 0 | 0 | ..... | ..... | Threatening | |
| Navy Yard, Portsmouth, N.H | 29.95 | 760.7 | 55 | 12.8 | 37 | 2.8 | 90 | NE | 2 | 0.9 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Naval Hospital, Yokohama, Japan.....* | 29.97‡ | 761.2‡ | ..... | ..... | 58 | 14.4 | 76 | SW | ..... | ..... | 6 | ..... | 3c;k;s | ..... | SW | 0 | 0 | ..... | ..... | Fair .... ..... | |
| Adams, Panama .....* | 29.95 | 760.7 | 79 | 26.1 | 78 | 25.6 | 95 | NW | ..... | ..... | 2 | ..... | 5 | ..... | N;W | ..... | ..... | ..... | ..... | Fair ..... | |
| Alaska, N. 49° 12′, W. 123° 58′..... | 30.19‡ | 766.8‡ | ..... | ..... | 45 | 7.2 | 100 | ESE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.275 | 6.99 | Smooth | ..... | Raining ..... | |
| Alliance, Leghorn, Italy..... | 29.95‡ | 760.7‡ | ..... | ..... | 59 | 15.0 | 65 | NW | ..... | ..... | 1–2 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant..... | |
| Ashuelot, Hong-Kong, China. ...* | 29.89‡ | 759.2‡ | ..... | ..... | 68 | 20.0 | 100 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Misty..... | |
| Canonicus, New Orleans, La.....* | 30.15 | 765.8 | 51 | 10.6 | 68 | 20.0 | 95 | SSW | ..... | ..... | 3 | ..... | 5 | ..... | SSW | ..... | ..... | ..... | ..... | Fair ..... | |
| Colorado, New York, N. Y..... | 29.90 | 759.4 | 39 | 3.9 | 37 | 2.8 | 100 | SE | 5.5 | 2.5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Light fog.... | |
| Constitution Lisbon, Portugal..... | 30.32‡ | 770.1‡ | ..... | ..... | 59 | 15.0 | 82 | WSW | ..... | ..... | 4 | ..... | 9 | ..... | wsw | ..... | ..... | ..... | ..... | Squally..... | |
| Despatch, Genoa, Italy..... | 29.95‡ | 760.7‡ | ..... | ..... | 59 | 15.0 | 88 | NW | ..... | ..... | 1 | ..... | 2 | ..... | NW | ..... | ..... | Smooth | ..... | Clear ..... | |
| Franklin, Norfolk, Va.....* | 30.10 | 764.5 | 71 | 21.7 | 60 | 16.0 | 79 | S | 12 | 5.4 | ..... | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Clear..... | |
| Gettysburg, Genoa, Italy ..... | 29.88‡ | 758.9‡ | ..... | ..... | 68 | 20.0 | 100 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Hartford, Montevideo, Uruguay.* | 30.18 | 766.6 | 69 | 20.6 | 67 | 19.4 | 69 | ESE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.05 | 1.3 | Mod'ate | SE | Cloudy..... | |
| Lackawana, Callao, Peru.....* | 29.73‡ | 755.1‡ | ..... | ..... | 66 | 18.9 | 94 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | SE | 0 | 0 | Smooth | ..... | Misty..... | |
| Michigan, Erie, Pa.....† | 29.78 | 756.4 | ..... | ..... | 40 | 4.4 | 82 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rainy ..... | |
| Monocacy, Shanghai, China.....* | 29.94‡ | 760.5‡ | ..... | ..... | 59 | 15.0 | 82 | ESE | ..... | ..... | 0–1 | ..... | 8 | ..... | ESE | 0 | 0 | ..... | ..... | Fair..... | |
| Monongahela Yokohama, Japan .....* | 29.90‡ | 759.4‡ | ..... | ..... | 60 | 15.6 | 76 | SSW | ..... | ..... | 4–7 | ..... | 4 | ..... | ..... | 0 | 0 | Light | S;W | Squally..... | |
| New Hampshire, Port Royal, S. C.....* | 30.00 | 762.0 | 65 | 18.3 | 65 | 18.3 | 84 | SW | 4 | 1.8 | ..... | ..... | 2 | ..... | N | 0 | 0 | ..... | ..... | Clear..... | |
| Onward, Callao, Peru.....†* | 30.06 | 763.5 | ..... | ..... | 66 | 18.9 | 94 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Palos, Tientsin, China.....* | 29.71 | 754.6 | 41 | 5.0 | 41 | 5.0 | 82 | SSE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 47 | 8.3 | 85 | S | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Pensacola, Valparaiso, Chili..... | 30.01‡ | 762.2‡ | ..... | ..... | 63 | 17.2 | 94 | S | 1 | 0.4 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Plymouth, N. 36° 33′, W. 67° 22′..... | 29.73‡ | 755.1‡ | ..... | ..... | 58 | 14.4 | 100 | NNW | ..... | ..... | 4–6 | ..... | 10 | ..... | ..... | ..... | ..... | L'g;h'y | NW | Squally..... | |
| Powhatan, Norfolk, Va ..... | 29.97‡ | 761.2‡ | ..... | ..... | 48 | 8.9 | 85 | S | ..... | ..... | 2 | ..... | 5 | ..... | S | 0 | 0 | Smooth | ..... | Clear..... | |
| Quinnebaug, Malaga, Spain..... | 30.24‡ | 768.1‡ | ..... | ..... | 70 | 21.1 | 54 | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Ranger. Amoy, China..... | 29.88‡ | 758.9‡ | ..... | ..... | 70 | 21.1 | 85 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Richmond. N. 12° 51′, E. 47° 36′..... | 29.87‡ | 758.7‡ | ..... | ..... | 81 | 27.2 | 74 | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear. ..... | |
| Rio Bravo, Brownsville, Texas..... | 30.10 | 764.5 | 71 | 21.7 | 70 | 21.1 | 100 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | Calm | ..... | ..... | ..... | ..... | Fair..... | |
| Santee, Annapolis, Md..... | 29.87‡ | 758.7‡ | ..... | ..... | 47 | 8.3 | 85 | S | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Saratoga, Hampton Roads, Va..... | 29.95‡ | 760.7‡ | ..... | ..... | 49 | 9.4 | 85 | SSW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds.... | |
| St. Louis, League Island, Pa ..... | 29.85 | 758.2 | 56 | 13.3 | 38 | 3.3 | 100 | SE | 6 | 2.7 | ..... | ..... | 10 | ..... | SE | 0 | 0 | ..... | ..... | Cloudy..... | |
| Supply, New York, N. Y..... | 29.93‡ | 760.2‡ | ..... | ..... | 40 | 4.4 | 100 | SSE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Light fog.... | |
| Trenton Genoa, Italy.....* | 29.85‡ | 758.2‡ | ..... | ..... | 65 | 18.3 | 58 | SW | ..... | ..... | 1–2 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Tuscarora, Chipequa Bay, Mexico. | 29.92‡ | 760.0‡ | ..... | ..... | 78 | 25.6 | 82 | SW | ..... | ..... | 2 | ..... | 7 | ..... | Calm | 0 | 0 | Smooth | ..... | ..... | |
| Wabash, Boston, Mass..... | 30.01‡ | 762.2‡ | ..... | ..... | 40 | 4.4 | 91 | E | 7 | 3.1 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Wyoming, Alexandria, Egypt.....* | 29.74‡ | 755.4‡ | ..... | ..... | 67 | 19.4 | 95 | NW | ..... | ..... | 2–3 | ..... | 5 | ..... | NW | ..... | ..... | Smooth | ..... | Fair..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | |
| S. S. Colima, N. 14° 48′, W. 94° 44′..† | | 30.04‡ | 763.0‡ | 79 | 26.1 | | N | | | 1 | | 5 | | SE | 0 | Small | SE | Misty | Capt. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, N. 4° 05′, W. 164° 40′ | | 30.00‡ | 762.0‡ | | | | ENE | | | 6 | | | | E | | Long; rough | NW | Fine | R. C. Ghest, 1st Officer |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; and no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

**WHITE STAR LINE MARINE SERIES.** Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic, N. 51° 18′, W. 14° 09′ | | 29.69 | 754.1 | 45 | 7.2 | | SW | | | 7 | | | | WSW | | High | wsw | Squally | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

**OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, N. 37° 50′, E. 150° 43′ | | 30.14‡ | 765.5‡ | 59 | 15.0 | 82 | SSW | | | 5–6 | | ks | | SW | 0 | Rough | SSW | Misty | J. A. Thompson, 2d Off't |
| S. S. Gaelic, N. 22° 17′, E. 114° 10′ | | 30.02‡ | 762.5‡ | | | | Calm | | | 0 | | Haze | | | 0 | | | | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, N. 36° 45′, W. 157° 13′ | | 30.17‡ | 766.3‡ | 54 | 12.2 | ? | SSE | | | 5 | | 7ks | | SW | | 5 | SW | D. clouds | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:36 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

**NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andreesen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 42° 08′, W. 48° 09′ | | 30.10‡ | 764.5‡ | | | | NE | | | 2 | | | | E | | Rough | N | Raining | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 42° 28', W. 57° 06' | ..... | 29.97‡ | 761.2‡ | 50 | 10.0 | ..... | NE | ..... | ..... | 5 | ..... | 9 | ..... | NE | Mod'ate | Light | E | Cloudy. ..... | Captain Sargent. |
| S. S. Ohio | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. H. Dodge. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Randle. |
| S. S. Switzerland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jackson. |
| S. S. Vaderland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Nichols. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

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Furnished by the coöperation of A. Schumacher, & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Richardson. |
| S. S. Hibernian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES.** (Miscellaneous.

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Hyannis Harbor, Mass. | ..... | 29.78‡ | 756.4‡ | 43 | 6.1 | 92 | ENE | ..... | ..... | ..... | ..... | Fog | ..... | ..... | ..... | ..... | ..... | Dense fog... | Capt. James Jorgensen. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 30, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
8:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:35 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time
1:26 P. M. CHRISTIANIA mean time.
1:38 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGEGIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Morocco | ..... | ..... | 30.14 | 765.6 | 63.9 | 17.7 | 84 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | |
| Nemours | ..... | ..... | 30.08 | 763.9 | 65.5 | 18.6 | 72 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Kesxuche. |
| Algiers | ..... | ..... | 30.09 | 764.3 | 63.7 | 17.6 | 74 | NNE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Tourlliere. |
| La Calle | ..... | ..... | 30.13 | 765.3 | 66.7 | 19.3 | 57 | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Foufrede. |
| Tunis | ..... | ..... | 30.17 | 766.2 | 67.3 | 19.6 | 49 | NW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 30.24 | 768.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 30.16 | 766.1 | 70.2 | 21 1 | 26 | S | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Herbin. |
| Tebessa | ..... | ..... | 30.21 | 767.4 | 58.6 | 14.8 | 42 | W | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Watrin. |
| Geriville | ..... | ..... | 30.15 | 765.7 | 52.2 | 11.2 | 100 | S | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Brugnlaux. |
| Laghouat | ..... | ..... | 30.21 | 767.4 | 67.3 | 19.6 | 32 | S | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bertrand. |
| Biskra | ..... | ..... | 30.20 | 767.0 | 73.0 | 22.8 | 35 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.44 | 747.7 | 29.98 | 761.6 | 57.0 | 13.9 | 50 | S | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.25 | 743.0 | 30.04 | 763.0 | 42.8 | 6.0 | 74 | ENE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski. |
| Eperies | 29.04 | 737.7 | 29.94 | 760.4 | 44.6 | 7.0 | ..... | N | ..... | ..... | 3 | ..... | 5c | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.71 | 729.1 | 29.95 | 760.8 | 55.2 | 12.9 | 53 | E | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.46 | 722.9 | 29.91 | 759.6 | 47.7 | 8.7 | 83 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. A. Gottschling. |
| Kremsmünster | 28.64 | 727.5 | 29.99 | 761.8 | 49.3 | 9.6 | 71 | WNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner. |
| Lemberg | 29.02 | 737.1 | 30.05 | 763.3 | 34.0 | 1.1 | 80 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Dr. T. Stanecki. |
| Pola | 29.90 | 759.4 | 30.01 | 762.3 | 59.0 | 15.0 | 66 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.49 | 749.0 | 29.96 | 760.9 | 52.5 | 11.4 | 71 | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 29.94 | 760.4 | 30.04 | 763.0 | 56.1 | 13.4 | 75 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | P. Busin. |
| Vienna | 29.26 | 743.3 | 29.9 | 761.5 | 54.5 | 12 5 | 51 | NNE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 m., or 1,350.4 feet.; Kremsmünster, 383.6 m., or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. O. Houzeau, Director of the Royal Observatory at Brussels

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | 29.69 | 754.1 | 29.89 | 759.2 | 52.7 | 11.5 | 59 | SW | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0 | 0 | ..... | Royal Observatory. |
| Furnes | 29.84 | 757.6 | 29.86 | 758.4 | 54.3 | 12.4 | 65 | SW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | 0.079 | 2.0 | ..... | M. E. de Cae. |
| Maeseyck | 29.80 | 756.9 | 29.93 | 760.1 | 53.6 | 12.0 | 65 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0; instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m., Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.26 | 743.2 | 29.36 | 745.7 | 44.2 | 6.8 | ..... | SSE | 30 | 13.4 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | Squally | W. Boswell. |
| Ardrossan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.27 | 743.4 | 45.0 | 7.2 | ..... | SSW | 30 | 13.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.51 | 749.5 | 50.2 | 10.1 | ..... | SSW | 24 | 10.7 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.52 | 749.8 | 47.6 | 8.7 | ..... | SSW | 30 | 13.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Thomas Mackereth. |
| Bradford, Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.02 | 0.5 | ..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.92 | 760.0 | 29.95 | 760.7 | 83.0 | 28.3 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.70 | 754.4 | 47.0 | 8.3 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | H. Todd. [C. |
| Cardington | ..... | ..... | 29.69 | 753.9 | 51.0 | 10.6 | ..... | S | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.61 | 752.1 | 29.74 | 755.4 | 51.7 | 10.9 | ..... | SW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | Corpl. Daly, R. E. |
| Dartmoor | 28.17 | 715.5 | 29.64 | 752.8 | 46.0 | 7.8 | ..... | W | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Fine | Alexander Watt. |
| Donaghadee | 29.24 | 742.7 | 29.28 | 743.7 | 49 | 9.4 | ..... | SW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 29.76 | 755.9 | 29.78 | 756.4 | 45 | 7.2 | ..... | SW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | ¾ clouded | J. Costello. |
| Falmouth, Observatory | 29.44 | 747.8 | 29.67 | 753.6 | 51.9 | 11.1 | ..... | SW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| Fort Napier, (Natal) | 27.58 | 700.5 | 29.90 | 759.4 | 80.0 | 26.7 | ..... | NW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.70 | 754.4 | 29.94 | 760.5 | 87 | 30.6 | ..... | W | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.25 | 742.9 | 47 | 8.3 | ..... | SW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.08 | 764.0 | 30.14 | 765.5 | 66.9 | 19.4 | ..... | W | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.04 | 737.6 | 29.25 | 742.9 | 50.0 | 10.0 | ..... | S | ..... | ..... | 6 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy | D. G. Maclean. |
| Great Yarmouth | 29.76 | 755.9 | 29.76 | 755.9 | 44 | 6.7 | ..... | S | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | Misty | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.56 | 750.8 | 29.73 | 755.1 | 54.8 | 12.7 | ..... | SSW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | The Staff, for G. B. Airy. |
| Guernsey | 29.56 | 750.8 | 29.78 | 756.4 | 52 | 11.1 | ..... | SW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Raining | Dr. S. E. Hoskins, F.R.S. |
| Helston | 29.66 | 753.4 | 29.78 | 756.4 | 54 | 12.2 | ..... | SW | ..... | ..... | 6 | ..... | 2ck | ..... | ..... | 0 | 0 | Fine | M. P. Moyle. |
| Holyhead | 29.42 | 747.2 | 29.46 | 748.3 | 49 | 9.4 | ..... | SSW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Tilston. |
| Jersey | 29.52 | 749.8 | 29.82 | 757.4 | 50.4 | 10.2 | ..... | SSW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy | J. Fisher. |
| Kew, Observatory | 29.70 | 754.4 | 29.74 | 755.4 | 49.0 | 9.4 | ..... | SW | 20 | 8.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | The Meteorological Of. |
| Leicester, Museum | 29.37 | 746.0 | 29.63 | 752.6 | 51.3 | 10.7 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.81 | 757.2 | 29.89 | 759.2 | 62 | 16.7 | ..... | NW | ..... | ..... | 1 | ..... | 3k | ..... | ..... | ..... | ..... | Blue sky | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.07 | 738.4 | 29.16 | 740.7 | 49 | 9.4 | ..... | SSE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 29.86 | 758.4 | 75.6 | 24.2 | ..... | NW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.46 | 748.3 | 29.66 | 753.4 | 54.3 | 12.4 | ..... | SSW | ..... | ..... | 6 | ..... | 5ck;k | SSW | ..... | 0.098 | 2.49 | D. clouds | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.08 | 738.6 | 29.60 | 751.8 | 46.8 | 8.2 | ..... | SW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Rainy | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.68 | 753.9 | 50 | 10.0 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds | H. E. Bellamy. |
| Plymouth | 29.61 | 752.1 | 29.68 | 753.9 | 53.5 | 11.9 | ..... | SW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds | John Merrifield. |
| Roche's Point | 29.40 | 746.7 | 29.45 | 748.0 | 48 | 8.9 | ..... | WSW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded | W. Kennedy. |
| Saint Ann's Head | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 29.26 | 743.2 | 43 | 6.1 | ..... | SE | 40 | 17.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.79 | 756.7 | 44.0 | 6.7 | ..... | NNE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | Blank | Blank | Misty | W. H. Lyne. |
| Sheffield | 29.30 | 744.2 | 29.57 | 751.1 | 52.0 | 11.1 | ..... | SW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0 | 0 | Overcast | W. F. Cooper. |
| Silloth Rectory | 29.34 | 745.2 | 29.37 | 746.0 | 53.4 | 11.9 | 67 | S | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0.087 | 2.21 | D. clouds | Francis Redford, A. M |
| Stonyhurst, Observatory | 29.12 | 739.6 | 29.53 | 750.0 | 49.9 | 9.9 | ..... | S | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. S. J. Perry. |
| Stratfield Turgiss | 29.51 | 749.5 | 29.73 | 755.1 | 49.6 | 9.8 | ..... | SW | ..... | ..... | 4-5 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | C.H.Griffith, F.M.S. |
| Thurso | 29.18 | 741.2 | 29.24 | 742.7 | 45 | 7.2 | ..... | SSE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | John Trotter. |
| Truro, Royal Institution | 29.65 | 753.1 | 29.70 | 754.4 | 55 | 12.8 | ..... | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | W. Newcombe. |
| Valencia, Observatory | 29.34 | 745.2 | 29.37 | 746.0 | 47.5 | 8.6 | ..... | SW | 31 | 13.9 | ..... | ..... | 7 | ..... | ..... | Blank | Blank | D. clouds | The Meteorological Of. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.79 | 756.7 | 29.83 | 757.7 | 93.9 | 34.4 | 29 | SSE | 5 | 2.2 | ..... | 6 | 8 | ..... | ..... | 0.01 | 0.3 | Raining | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.04 | 763.0 | 46.0 | 8.0 | 77 | E | ..... | ..... | 2 | ..... | 4k | ..... | ..... | 0.03 | 0.8 | Starlight | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.35 | 745.5 | 49.5 | 9.7 | ..... | SW | ..... | ..... | 3 | ..... | 10k | ..... | ..... | ..... | ..... | Cloudy | Andrew Gibb. |
| Mauritius, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | C. Meldrum. |
| Melbourne, Observatory | 30.12 | 765.0 | 30.21 | 767.3 | 56.0 | 13.3 | 67 | SSE | 6 | 2.7 | ..... | ..... | 3 | ..... | ..... | 0.4 | 10. | Fine | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 29.93 | 760.2 | 39 | 3.9 | ..... | SW | ..... | ..... | 6 | 10 | 5 | SW | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.40 | 746.7 | 40 | 4.4 | ..... | S | ..... | ..... | 8 | ..... | 10 | ..... | ..... | ..... | ..... | Hazy | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

## British Marine Series.

| Vessels. | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|
| H. M. S. "Fawn," N. 41° 00′, E. 29° 00′ | ..... | ..... | Drizzling | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | Capt. W. Scott. |
| Brig Alliance | ..... | ..... | ..... | ..... |
| S. S. Amanda, N. 36° 48′, W. 0° 07′ | ..... | ..... | D. clouds | Capt. B. Boyes. |
| Barque Belle-Isle, N. 40° 00′, W. 38° 43′ | ..... | ..... | Drizzling | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra, N. 40° 10′ W. 37° 19′ | 3 | N | Overcast | Capt. Thos. Young. |
| Barque Commewyne, N. 50° 00′, W. 14° 40′ | ..... | ..... | Raining | Capt. A. Buchan. |
| Barque Fedalina, N. 20° 35′, W. 39° 30′ | 1 | ENE | Blue sky | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven, N. 36° 55′, W. 0° 29′ | ..... | ..... | D. clouds | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | Capt. W. R. McMontry |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.26 | 667.0 | 29.98 | 761.5 | 67.1 | 19.5 | 78 | NE | ..... | ..... | 3 | 9s | ..... | E | ..... | 0 | 0 | ..... | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.6 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.85 | 758.1 | 29.89 | 759.3 | 33.4 | 0.8 | 90 | SSE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | |
| Fanöe | 29.78 | 756.3 | 29.80 | 756.8 | 36.3 | 2.4 | 100 | WSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | |
| Godthaab, (Greenland) | 29.61 | 749.5 | 29.65 | 750.6 | 18.5 | — 7.5 | 100 | NNE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Faröe) | 29.28 | 743.6 | 29.31 | 744.5 | 45.3 | 7.4 | 76 | SSE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | ..... | |
| Vestervig | 29.55 | 750.5 | 29.72 | 754.8 | 34.9 | 1.6 | 96 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower cloud-; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.36 | 745.8 | 29.91 | 759.8 | 52.5 | 11.4 | 93 | SW | ..... | ..... | 1 | ..... | 8 | SW | S | 0.12 | 3. | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 29.79 | 756.7 | 29.90 | 759.5 | 50.4 | 10.2 | 69 | SW | ..... | ..... | 1 | ..... | 5 | ..... | E | 0 | 0 | Cloudy | Bonvallet, Director. |
| Avignon, Normal School | 29.92 | 760.0 | 30.00 | 762.0 | 69.8 | 21 | 51 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | M. Giraud, Director. |
| Bar-sur-Seine | 29.41 | 747.0 | 29.96 | 761.0 | 55.8 | 13.2 | 54 | SSW | ..... | ..... | 1 | ..... | 8km | ..... | SW | 0.315 | 8.0 | Very clear | C. Saillard, Director. |
| Beauvais, Normal School | 29.64 | 752.8 | 29.92 | 760.0 | 51.8 | 11 | 74 | SW | ..... | ..... | 1 | ..... | 10 | ..... | SW | 0.207 | 5.25 | Covered | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.10 | 739.0 | 29.98 | 761.6 | 56.5 | 13.6 | 68 | S | ..... | ..... | 4 | ..... | 2 | ..... | SW | 0.51 | 13. | Slightly cl'dy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.20 | 741.8 | 30.08 | 763.9 | 59.6 | 15.3 | 45 | W | ..... | ..... | 3 | ..... | km | W | W | 0 | 0 | ..... | M. Marlot, Director. |
| Bourges, Normal School | 29.41 | 747.1 | 29.96 | 761.1 | 52 9 | 11.6 | 86 | SSW | ..... | ..... | 8 | ..... | 10 | SSW | SSW | 0 | 0 | Covered | A. Waquet, Director |
| Brest, Naval Observatory | 29.50 | 749.3 | 29.74 | 755.5 | 57.2 | 14.0 | 69 | SW | ..... | ..... | 3 | ..... | 10 | ..... | SW | 0.039 | 1.00 | ..... | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.64 | 752.8 | 30.05 | 763.2 | 55.1 | 13.4 | 65 | NW | ..... | ..... | 2 | ..... | 2 | NE | N | 0 | 0 | Slightly cld'y | September, Director. |
| Caen, Normal School | 29.75 | 755.7 | 29.83 | 757.6 | 56.1 | 13.4 | 64 | SSE | ..... | ..... | 3 | ..... | 5 | ..... | SSE | 0.04 | 1. | Cloudy | M. Lair, Director. |
| Chartres, Normal School | 29.30 | 744.3 | 29.87 | 758.8 | 51.6 | 10.9 | 96 | S | ..... | ..... | 3 | ..... | 10 | ..... | N | 0.12 | 3. | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.65 | 753.2 | 29.97 | 761.3 | 54.3 | 12.4 | 69 | SW | ..... | ..... | 3 | ..... | 2 | SW | SW | ..... | ..... | Slightly cl'dy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.69 | 726.2 | 29.92 | 760.0 | 60.6 | 15.9 | 50 | SW | ..... | ..... | 1 | ..... | 8 | ..... | SW | 0 | 0 | ..... | Alluard, Director. |
| Commercy, Normal School | 29.12 | 739.5 | 29.98 | 761.5 | 51.6 | 10.9 | 65 | W | ..... | ..... | 3 | ..... | 5km | ..... | W | 0.16 | 4. | Cloudy | Dr. Coulet, Director. |
| Commune de Grèasque* | 28.93? | 734.7? | 30.07? | 763.7? | 63.5 | 17.5 | 49 | NW | ..... | ..... | 2 | ..... | 5 | ..... | SW | 0 | 0 | ½ covered | M. Kina, Director. |
| Grenoble, Normal School | 29.22 | 742.3 | 29.98 | 761.6 | 61.2 | 16.2 | 59 | ENE | ..... | ..... | 1 | ..... | 5ks | SW | ..... | 0 | 0 | Cloudy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.76 | 755.6 | 29.97 | 761.3 | 56.5 | 13.6 | 73 | SW | ..... | ..... | 3 | ..... | 8 | ..... | SW | 0.016 | 0.4 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.60 | 751.8 | 29.91 | 759.6 | 54.0 | 12.2 | 76 | S | ..... | ..... | 3 | ..... | 8 | S | S | 0.187 | 4.75 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.15 | 740.4 | 30.07 | 763.8 | 58.1 | 14.5 | 55 | WSW | ..... | ..... | 4 | ..... | 5 | ..... | W | 0.378 | 9.60 | Raining | Baudry, Director. |
| Lorient, Naval Observatory | 29.80 | 756.8 | 29.89 | 759.3 | 55.8 | 13.2 | 95 | SW | ..... | ..... | 4 | ..... | ..... | ..... | SW | 0 | 0 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Mirecourt, Normal School | 28.97 | 735.8 | 30.03 | 762.8 | 52.0 | 11.1 | 68 | NE | ..... | ..... | 1 | ..... | km | ..... | SW | 0.264 | 6.7 | ..... | M. Barbier, Director. |
| Nîmes, Normal School | 29.84 | 757.8 | 30.03 | 762.8 | 70.9 | 21.6 | 44 | W | ..... | ..... | 4 | ..... | 2 | ..... | W | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 28.94 | 735.0 | 29.98 | 761.5 | 65.5 | 18.6 | 69 | N | ..... | ..... | 1 | ..... | s | N | N | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 25.09 | 637.2 | ..... | ..... | 37.9 | 3.3 | 93 | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.303 | 7.7 | Very cloudy | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.94 | 760.5 | 29.97 | 761.3 | 54.7 | 12.6 | 86 | SW | ..... | ..... | 2 | ..... | 10 | SW | SW | 0.08 | 2. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.76 | 756.0 | 29.85 | 758.2 | 50.9 | 10.5 | 72 | SSE | ..... | ..... | 1 | ..... | 8 | ..... | SW | 0.079 | 2.0 | Very cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.76 | 755.9 | 29.79 | 756.7 | 56.3 | 13.5 | 54 | SW | ..... | ..... | 4 | ..... | 5 | SW | SW | 0.050 | 1.28 | Cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.76 | 755.9 | 29.93 | 760.1 | 53.6 | 12.0 | 67 | SSW | ..... | ..... | 2 | ..... | ..... | ..... | SSW | 0.031 | 0.8 | Clear | E. Renou, Director. |
| Tarbes, Normal School | 28?91 | 734.3 | 29.98 | 761.4 | 60.8 | 16 | 41 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | T. Huguet, Director. |
| Versailles Observatory | 29.42 | 747.3 | 29.91 | 759.8 | 51.1 | 10.6 | 70 | SW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.024 | 0.62 | ..... | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.33 | 745.0 | 30.08 | 764.1 | 62.6 | 17 | 79 | SE | ..... | ..... | 1 | ..... | 2 | ..... | W | 0 | 0 | Slightly cl'dy | M. Nicol, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.78 | 756.3 | 29.80 | 757.0 | 78.8 | 26 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.04 | 1. | ..... | L'Abbé Marel 6si. |
| Lyons Obs'y, (Park Station) | 29.39 | 746.4 | 30.00 | 761.9 | 61.5 | 16.4 | 51 | SE | ..... | ..... | 1 | 8c | ..... | W | ..... | 0 | 0 | ..... | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 24.86 | 631.5 | 30.18 | 766.5 | 48.6 | 9.2 | 60 | SSW | 24.2 | 10.8 | ..... | ..... | 2 | ..... | S | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | 30.02 | 762.6 | 60.4 | 15.8 | 75 | ESE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | Slightly cov | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.64 | 752.8 | ..... | ..... | 51.8 | 11.0 | 68 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.063 | 1.6 | ..... | Marié Davy, Director. |
| Perpignan | 29.92 | 760.0 | 30.03 | 762.7 | 60.3 | 15.7 | 65 | SE | 9.4 | 4.2 | ..... | ..... | 6 | ..... | SE | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.46 | 570.6 | ..... | ..... | 34.2 | 1.2 | ..... | W | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0 | 0 | Fair | Gen'l de Nansouty. |
| Toulouse, Observatory | 29.32 | 744.6 | 30.04 | 763.0 | 62.6 | 17.0 | 64 | SSE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | M. Mercadier Julier. |
| Tours | 29.71 | 754.5 | 29.90 | 759.5 | 54.3 | 12.4 | 69 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.047 | 1.2 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 29.93 | 760.2 | 29.96 | 760.9 | 52.9 | 11.6 | 94 | SSE | 9.8 | 4.4 | ..... | ..... | 0 | ..... | ..... | Inap. | Inap. | Clear | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-10 | Clouds. Amount. Up'er 0-10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.13 | 739.9 | 29.97 | 761.3 | 51.1 | 10.6 | 81 | SW | | | 2 | | 8 | SW | | 0.098 | 2.5 | Rain & sleet. | Prof. Dr. Hoh. |
| Berlin | 29.76 | 755.8 | 29.93 | 760.2 | 50.9 | 10.5 | 67 | SE | | | 1 | | 7 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.47 | 748.4 | 30.00 | 761.9 | 51.1 | 10.6 | 63 | S | | | 1 | | 10 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.50 | 749.3 | 29.93 | 760.1 | 56.6 | 13.6 | 55 | SW | | | 2 | | 10 | SW | | 0.122 | 3.1 | Raining | Albert Senz. |
| Cassel | 29.34 | 745.3 | 29.95 | 760.6 | 52.2 | 11.2 | 67 | SW | | | 2 | | 6 | SW | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.75 | 755.7 | 29.91 | 759.8 | 54.1 | 12.3 | 57 | SW | | | 4 | | 5k | | | 0.04 | 1. | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.59 | 751.5 | 29.96 | 761.0 | 54.1 | 12.3 | | SSW | | | 1 | | 6 | | | 0.157 | 4.0 | | Physical Society. |
| Friedrichshafen | 28.56 | 725.4 | 30.00 | 762.0 | 51.8 | 11.0 | 76 | SSW | | | 1 | | 5 | SW | | 0.035 | 0.9 | | M. Wilhelm. |
| Hamburg | 29.82 | 757.5 | 29.89 | 759.3 | 47.8 | 8.8 | 78 | SW | | | 3 | | 8cs | | | 0.071 | 1.8 | | Captain F. Hegemann. |
| Kiel | 29.84 | 758.0 | 29.86 | 758.4 | 43.2 | 6.2 | 90 | SSE | | | 2 | | 10 | | | 0.036 | 0.91 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.99 | 761.8 | 30.08 | 764.0 | 37.4 | 3.0 | 75 | SE | | | 2 | | 8 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 29.93 | 760.2 | 39.9 | 4.4 | | SE | | | 4 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.52 | 749.8 | 29.94 | 760.5 | 55.4 | 13.0 | 51 | SW | | | 3 | | 6 | WSW | | 0.028 | 0.7 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 30.08 | 763.9 | 30.12 | 765.1 | 35.2 | 1.8 | 64 | E | | | 1 | | 10s | | | | | | Skalweit. |
| Neufahrwasser | 30.03 | 762.8 | 30.05 | 763.2 | 36.1 | 2.3 | 77 | E | | | 2 | | 10 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.71 | 754.6 | 30.00 | 762.1 | 42.4 | 5.8 | 77 | SE | | | 5 | | 10 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.46 | 748.2 | 30.01 | 762.2 | 55.6 | 13.1 | 64 | W | | | 3 | | 10 | WSW | | 0.189 | 4.79 | | Imp. University Observatory. |
| Stuttgart | 29.01 | 736.8 | 29.95 | 760.7 | 53.2 | 11.8 | 56 | SW | | | 1 | | 9 | W | | 0.035 | 0.9 | | Prof. Schoder. |
| Treves, (Trier) | 29.40 | 746.8 | 29.92 | 760.0 | 54.1 | 12.3 | 52 | W | | | 7 | | 6 | | | 0.025 | 0.63 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.45 | 722.7 | 29.97 | 761.3 | 48.4 | 9.1 | 81 | WSW | 2 | 1 | | | 9k | | NW | 0.024 | 0.6 | | Dr. Van Bebber. |
| Wustrow, Naval School | 29.84 | 757.9 | 29.86 | 758.5 | 40.5 | 4.7 | 92 | SSE | | | 2 | | 10 | | | 0.071 | 1.8 | Foggy | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.47 | 748.6 | 29.87 | 758.6 | 60.4 | 15.8 | | NE | | | 3.0 | | 0 | | | | | Clear | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.83 | 757.8 | 29.88 | 759.1 | 80.5 | 26.9 | 61 | WSW | 20. | 8.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.36 | 745.7 | 29.82 | 757.4 | 93.3 | 34.1 | 20 | SSW | 7.9 | 3.5 | | | 6 | SW | | 0 | 0 | D. clouds | |
| Bombay | 29.76 | 756.0 | 29.80 | 757.0 | 82.3 | 27.9 | 69 | NW | 27. | 12.1 | | | 3 | | WSW | 0 | 0 | D. clouds | |
| Lahore | 29.10 | 739.1 | 29.84 | 757.9 | 82.0 | 27.8 | 39 | W | 2.2 | 1.0 | | | | | | 0 | 0 | Cloudy | |
| Belgaum | | | | | | | | | | | | | | | | 0 | 0 | | |
| Roorkee | 28.89 | 733.8 | 29.77 | 756.1 | 91.8 | 33.2 | 15 | NW | 4.0 | 1.8 | | | 7 | | | 0 | 0 | | |
| Agra | 29.26 | 743.2 | 29.81 | 757.2 | 93.7 | 34.3 | 19 | N | | | | | | | | 0 | 0 | | |
| Nagpur | 28.76 | 730.6 | | | | | | SW | 4.2 | 1.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.40 | 746.8 | 29.77 | 756.1 | 90.7 | 32.6 | 43 | NW | 3.2 | 1.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.48 | 748.9 | 29.79 | 756.6 | 95.3 | 35.2 | 22 | Calm | 3.3 | 1.5 | | | 6 | W | | 0 | 0 | D. clouds | |
| Patna | 29.57 | 751.1 | 29.75 | 755.6 | 92.1 | 33.4 | 25 | Calm | 2.9 | 1.3 | | | 2 | W | W | 0 | 0 | | |
| Hazaribagh | 27.71 | 703.8 | 29.67 | 753.6 | 90.8 | 32.7 | 13 | NW | 7.0 | 3.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.70 | 754.4 | 29.78 | 756.5 | 90.9 | 32.7 | 58 | S | 3.6 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.77 | 756.1 | 29.79 | 756.6 | 90.0 | 32.2 | 47 | SW | 6.0 | 2.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.40 | 746.6 | 29.78 | 756.3 | 87.6 | 30.9 | 37 | SSW | 5.3 | 2.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.76 | 755.8 | 29.85 | 758.1 | 81.9 | 27.7 | 81 | SW | 4.8 | 2.2 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.48 | 748.8 | 29.82 | 757.3 | 77.8 | 25.4 | 65 | NE | 1.9 | 0.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.51 | 724.0 | 29.84 | 757.8 | 94.4 | 34.7 | 4 | Calm | 2.3 | 1.0 | | | 0 | E | | 0 | 0 | D clouds | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.60 | 751.7 | 30.01 | 762.2 | 59.4 | 15.2 | 63 | W | 1.8 | 0.8 | ..... | ..... | 6 | .. ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig |
| Milan | 29.46 | 748.2 | 29.98 | 761.5 | 60.1 | 15.6 | 57 | S | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.89 | 759.2 | 30.00 | 762.0 | 59.9 | 15.5 | 64 | S | 0.7 | 0.3 | ..... | ..... | 4 | N | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 29.05 | 737.9 | 29.96 | 760.9 | 59.7 | 15.4 | 56 | SE | 3.1 | 1.4 | ..... | ..... | 5 | NNE | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.85 | 758.3 | 30.05 | 763.2 | 58.8 | 14.9 | 68 | SE | 9.8 | 4.4 | ..... | ..... | 4 | SW | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 28.06 | 712.6 | 29.97 | 761.1 | 57.9 | 14.4 | 43 | NE | ..... | ..... | 2 | ..... | 7 | WNW | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.97 | 761.2 | 30.02 | 762.4 | 57.4 | 14.1 | 68 | NE | 10.5 | 4.7 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.80 | 756.8 | 30.05 | 763.3 | 56.5 | 13.6 | 71 | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci |
| Leghorn | 29.91 | 759.8 | 30.00 | 762.0 | 56.8 | 13.8 | 87 | W | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 29.84 | 757.9 | 30.01 | 762.3 | 63.3 | 17.4 | 62 | WSW | 8.1 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.69 | 754.0 | 29.94 | 760.5 | 58.5 | 14.7 | 63 | NNW | 23.7 | 10.6 | ..... | ..... | 1 | N | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.08 | 738.7 | 29.90 | 761.0 | 64.8 | 18.2 | 78 | NW | 8.7 | 3.9 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.88 | 759.0 | 30.08 | 763.9 | 63.3 | 17.4 | 47 | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.82 | 757.4 | 30.07 | 763.8 | 59.2 | 15.1 | 42 | WNW | 22.4 | 10.0 | ..... | ..... | 1 | ..... | ..... | 0.039 | 1.0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.95 | 760.7 | 30.02 | 762.6 | 63.1 | 17.3 | 62 | ESE | 3.8 | 1.7 | ..... | ..... | 4 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.47 | 748.4 | 30.02 | 762.5 | 63.1 | 17.3 | 69 | ESE | 4.3 | 1.9 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. S. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 29.95 | 760.7 | 29.97 | 761.2 | 52.8 | 11.6 | 81 | N | 6.6 | 3.0 | ..... | ..... | 10cs;8 | ..... | ..... | 0 | 0 | Cloudy..... | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.76 | 755.9 | 29.96 | 761.0 | 54.9 | 12.7 | 89 | SE | 1.9 | 0.9 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy..... | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.87 | 758.7 | 29.94 | 760.5 | 53.9 | 12.2 | 86 | SSE | 1.8 | 0.8 | ..... | 10cs | 0 | ..... | ..... | 0.045 | 1.14 | Cloudy..... | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.12 | 638.1 | 30.20 | 767.0 | 49.1 | 9.5 | 46 | Calm | ..... | ..... | 0 | 6 | .. ..... | E | ..... | 0 | 0 | ½ clouded... | Prof. L. Peres. |
| Leon | 24.49 | 622.2 | 30.21 | 767.4 | 58.1 | 14.5 | 73 | Calm | ..... | ..... | 0 | 1c | 1s | ..... | ..... | 0 | 0 | Foggy ..... | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.14 | 587.7 | 30.23 | 767.8 | 50.2 | 10.1 | 77 | NW | 1.1 | 0.5 | .. ..... | 1c | 3k | N | ..... | 0 | 0 | Fair..... | The Staff. |
| Pabellon, (Aguascallentes) | ..... | ..... | ..... | ..... | 59.5 | 15.3 | 63 | NW | ..... | ..... | 2 | 4cs | ..... | SW | ..... ... | 0 | 0 | Fair ..... | M. V. de Leon, M. E. |
| Tlacotalpam | 30.01 | 762.2 | 30.02 | 762.5 | 74.8 | 23.5 | 89 | W | ..... | ..... | 2 | 1 | 1 | NE | N | 0 | 0 | Foggy ..... | M. M. Cházaro. |
| San Luis Potosi | 24.28 | 616.1 | 30.27 | 768.9 | 55.0 | 12.8 | 77 | SE | ..... | ..... | 1 | 0 | 3 | ..... | W | 0 | 0 | Clear..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.46 | 595.9 | 30.22 | 767.7 | 48.9 | 9.4 | 71 | ENE | 0.9 | 0.4 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.38 | 720.9 | 30.04 | 762.9 | 74.3 | 23.5 | 45 | NE | ..... | ..... | 3 | 0 | 8 | ..... .. | S | 0 | 0 | Misty..... | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 592 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.87 | 758.6 | 29.87 | 758.6 | 51.8 | 11.0 | ..... | SSW | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.035 | 0.9 | ..... | |
| Groningen | 29.82 | 757.3 | 29.87 | 758.7 | 47.8 | 8.8 | ..... | SW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.094 | 2.4 | ..... | |
| Helder | 29.84 | 757.8 | 29.84 | 757.8 | 43.2 | 6.2 | ..... | SSW | ..... | ... .. | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.86 | 758.4 | 29.86 | 758.4 | 52.0 | 11.1 | 69 | SSW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.84 | 758.0 | 29.89 | 759.2 | 53.1 | 11.7 | 62 | SW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Slightlycl'dy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.68 | 753.9 | 29.74 | 755.3 | 39.2 | 4.0 | 67 | WNW | 1.8 | 0.8 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.82 | 757.3 | 29.85 | 758.3 | 33.4 | 0.8 | 68 | SSE | 18 | 8 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.80 | 757.0 | 29.96 | 760.9 | 30.4 | — 0.9 | 80 | ENE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | 0.154 | 3.9 | Snowing | |
| Tromsö | 29.85 | 758.1 | 29.89 | 759.2 | 29.1 | — 1.6 | 68 | S | 7 | 3 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.98 | 761.6 | 30.18 | 766.5 | 57.6 | 14.2 | 80 | WNW | 11.2 | 5.0 | ..... | ..... | 5 | ..... | ..... | 0.059 | 1.5 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.11 | 739.5 | 30.14 | 765.5 | 61.9 | 16.6 | 46 | SSE | 6.9 | 3.1 | ..... | ..... | 7 | SSE | ..... | 0 | 0 | ..... | Dr. A.M.R. dos Santos. |
| Funchal, (Madeira) | 30.14 | 765.6 | 30.23 | 767.8 | 63.9 | 17.7 | 56 | SW | 5.6 | 2.5 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.52 | 757.5 | 30.19 | 766.7 | 56.7 | 13.7 | 54 | WSW | 13.7 | 6.1 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.06 | 764.1 | 30.15 | 765.9 | 59.4 | 15.2 | 83 | N | 11.9 | 5.3 | ..... | ..... | 10 | ..... | ..... | 0.465 | 11.8 | Light rain | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Sea or swell: Height scale 0–9 | Sea or swell: Direction from — | | |
|---|---|---|---|---|
| Bartholomew Dias | | | | A. G. da Silva Costa Com'd't. |
| D. Fernando | | | | A.M.de Sande, Com'd't. |
| India | | | | A. D. Pedroso, Com'd't. |
| Mindello | | | | J. F. R. R. Bastos, Com'd't. |
| Quanza, N. 2° 34′, E. 5° 08′ | | | | A.J.de Mattos, Com'd't. |
| Rio Douro | | | | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto de S. Jose de Bissao, Senegambia | | | | |
| Sá da Bandeira, S. 8 12′. E 13° 04′ | | | | |
| Sadõ | | | | |
| Tejo, Macao, China | | | | |
| Duque da Terceira, Santiago, Cape Verd I. | | | | |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | | | | | | | | | | | | | | | | | | | A. G. da Silva Costa Com'd't. |
| D. Fernando | | | | | | | | | | | | | | | | | | | A.M.de Sande, Com'd't. |
| India | | | | | | | | | | | | | | | | | | | A. D. Pedroso, Com'd't. |
| Mindello | | | | | | | | | | | | | | | | | | | J. F. R. R. Bastos, Com'd't. |
| Quanza, N. 2° 34′, E. 5° 08′ | ..... | ..... | 29.96 | 760.9 | 83.3 | 28.5 | ..... | SE | ..... | ..... | 1 | ..... | 3 | ..... | NW | 2 | SE | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | | | | | | | | | | | | | | | | | | | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto de S. Jose de Bissao, Senegambia | ..... | ..... | 29.91 | 759.7 | 82.8 | 28.2 | ..... | WSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | ..... | Blue sky | A. Ferreira, 2d Lt. |
| Sá da Bandeira, S. 8 12′. E 13° 04′ | ..... | ..... | 29.74 | 755.5 | 85.1 | 29.5 | ..... | NW | ..... | ..... | 2 | ..... | 6 | ..... | WNW | 3 | SW | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sadõ | | | | | | | | | | | | | | | | | | | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 29.97 | 761.2 | 62.6 | 17.0 | ..... | NNW | ..... | ..... | 2 | ..... | 8 | ..... | NNW | 1 | ..... | Raining | J. M. F. Guimaraes, Com'd't. |
| Duque da Terceira, Santiago, Cape Verd I. | ..... | ..... | 30.26 | 768.5 | 79.7 | 26.5 | ..... | NE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 2 | ..... | Blue sky | C.C.da Fonseca Ferreira, Comd't |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.61 | 752.2 | 30.05 | 763.2 | 41.4 | 5.2 | 69 | SE | 7 | 3 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.78 | 755.1 | 30.17 | 766.2 | 37.2 | 2.9 | 68 | SE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds | Astronomical Obs. |
| Dorpat | 29.98 | 761.4 | 30.23 | 767.9 | 32.0 | 0.0 | 76 | ESE | 2 | 1 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light snow. | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.26 | 768.6 | 30.26 | 769.0 | 30.9 | — 0.6 | 81 | SE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.42 | 747.3 | 30.09 | 764.2 | 33.3 | 0.7 | 89 | E | 11 | 5 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | Physical Cabinet. |
| Nikolaiev | 29.85 | 758.3 | 29.93 | 760.1 | 39.6 | 4.2 | 84 | NE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.70 | 754.4 | 29.72 | 754.9 | 44.2 | 6.8 | 82 | ENE | 16 | 7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 30.01 | 762.2 | 30.60 | 777.3 | 24.8 | — 4.0 | 66 | NE | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.84 | 757.8 | 30.04 | 763.1 | 41.4 | 5.2 | 48 | E | 45 | 20 | ..... | ..... | 3c | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.41 | 772.5 | 30.43 | 773.0 | 37.0 | 2.8 | 66 | SW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.43 | 722.1 | 29.82 | 757.6 | 60 1 | 15.6 | 62 | S | 4 | 2 | ..... | ..... | 8cs | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.19 | 766.8 | 30.11 | 764.7 | 41.9 | 5.5 | 52 | E | 16 | 7 | ..... | ..... | 3s | ..... | ..... | ..... | ..... | Light clouds | Capt. Wisganow. |
| Krotkowo* | 30.13 | 765.4 | 30.65 | 778.5 | 22.5 | — 5.3 | 45 | NE | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 30.36 | 771.1 | 30.65 | 778.4 | 29.3 | — 1.5 | 32 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.40 | 746.8 | 30.42 | 772.6 | 32.5 | 0.3 | 37 | W | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.76 | 755.9 | 29.99 | 761.8 | 61.0 | 16.1 | 47 | NNE | 4 | 2 | ..... | ..... | 2cs | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.47 | 723 0 | 30.14 | 765.6 | 64.0 | 17.8 | 50 | SW | 13 | 6 | ..... | ..... | 0 | ..... | ..... | Blank | Blank | ..... | Teich, A. M. |
| Barnaul | 29.49 | 749.1 | 30.03 | 762.8 | 14.0 | —10.3 | 78 | NW | 2 | 1 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.57 | 751.0 | 29.87 | 758.8 | 19.2 | — 7.1 | 65 | N | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Irkutsk | | | | | | | | | | | | | | | | | | | Marks. |
| Peking, (China) | 29.79 | 756.7 | 29.93 | 760.3 | 44.8 | 7.1 | 48 | Calm | 0 | 0 | ..... | ..... | 1c | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | | | | | | | | | | | | | | | | | | | Meteorological Obs. |
| Vladivostock | 30.07 | 763.7 | 30.17 | 766.2 | 31.1 | — 0.6 | 90 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | 29.64 | 752.9 | 29.73 | 755.1 | 7.2 | —13.8 | 68 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount— and generally the kind of cloudiness— without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.92 | 759.9 | 30.02 | 762.6 | 62.2 | 16.8 | 58 | S | 1.6 | 0.72 | ..... | ..... | 1ck | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 29.97 | 761.1 | 30.02 | 762.5 | 64.4 | 18.0 | 73 | NW | 3.0 | 1.32 | ..... | 2 | 6 | W | ..... | 0 | 0 | Almost cov'd | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.68 | 677.7 | ..... | ..... | 63.6 | 12.0 | 76 | S | 12.3 | 5.50 | ..... | 0 | 7 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez |
| Madrid, Royal Osservatory | 27.88 | 708.2 | ..... | ..... | 57.6 | 14.2 | 57 | SW | 12.0 | 5.34 | ..... | 0 | 7 | ..... | ..... | 0 | 0 | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 29.97 | 761.2 | 30.11 | 764.9 | 77.7 | 25.4 | 47 | SE | 2.4 | 1.06 | ..... | 2 | 4 | ..... | ..... | 0 | 0 | Light clouds | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.04 | 737.6 | 29.93 | 760.2 | 55.2 | 12.9 | 91 | SW | 16.8 | 7.5 | ..... | 0 | 10 | ..... | ..... | 1.409 | 35.8 | Rainy | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.89 | 759.2 | 29.96 | 760.9 | 68.9 | 20.5 | 85 | W | 1.3 | 0.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| Manilla, Philippine Islands. | 29.82 | 757.6 | 29.87 | 758.9 | 85.0 | 29.8 | 70 | ESE | 10.1 | 4.5 | ..... | ..... | 2cs | ..... | E | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.06 | 763 5 | 30.16 | 766.2 | 58.8 | 14.9 | 89 | Calm | 0 | 0 | ..... | 4 | 8 | SSW | NW | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I. | 29.84 | 758.0 | 29.93 | 760.3 | 76.6 | 24.8 | 84 | SE? | 0 | 0 | ..... | 1s | 4k | SE | SE | 0.433 | 11.00 | Clear | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer, corrected for instrum'tal error and temperature. | | Barometer, reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | L'w'r | Upper. | Lower. | | | | |
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Inches. | Millimeters. | | |
| Haparanda | 30.19 | 766.8 | 30.23 | 767.8 | 28.8 | — 1.8 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.12 | 765.1 | 30.17 | 766.4 | 30.6 | — 0.4 | 70 | SSW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.11 | 764.8 | 30.16 | 766.1 | 33.4 | 0.8 | 65 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.93 | 760.1 | 30.10 | 764.6 | 33.8 | 1.0 | 81 | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.99 | 761.8 | 30.05 | 763.3 | 34.5 | 1.4 | 62 | S | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.04 | 762.9 | 30.11 | 764.8 | 32.5 | 0.3 | 71 | ESE | 6.3 | 2.8 | ..... | ..... | 9 | ..... | SSE | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.57 | 725.6 | 29.08 | 761.4 | 59.5 | 15.3 | 43 | SW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.157 | 4.0 | Covered | The Observatory. |
| Zurich | 28.39 | 721.0 | 30.03 | 762.8 | 51.8 | 11.0 | 80 | S | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.118 | 3.0 | Cloudy | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +1.3 mm.; Thermometer, +5.7 Cent.; Relative Humidity, —15 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.83 | 757.7 | 43.5 | 6.4 | 88 | N | 19 | 8.5 | ..... | 10 | ..... | N | 0.236 | 6.0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.32 | 770.0 | 77.0 | 25.0 | ..... | SE | ..... | ..... | 1 | 0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Valona | ..... | ..... | 29.94 | 760.6 | 67.7 | 14.3 | ..... | NW | ..... | ..... | 2 | 2 | ..... | ..... | 0.20 | 5. | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.52 | 749.8 | 29.64 | 752.8 | 71.4 | 21.9 | 71 | W | ..... | ..... | 3 | ..... | 2ks | ..... | SW | 0 | 0 | Misty. | Prof. C.V. A. Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.14 | 740.1 | 29.46 | 748.0 | 33 | 0.6 | ..... | N | 5 | 2.2 | ..... | ..... | 10s | ..... | N | 0.59 | 15.0 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 29.56 | 750.8 | 29.62 | 752.3 | 36 | 2.2 | 97 | E | 4 | 1.8 | ..... | ..... | 10n | ..... | E | 0.03 | 0.8 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 29.60 | 751.8 | 29.65 | 753.1 | 35 | 1.7 | 94 | SE | 13 | 5 8 | ..... | ..... | 10n | ..... | ..... | 0.020 | 0.51 | Light rain | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.14 | 740.1 | 29.38 | 746.0 | 33.0 | 0.6 | 93 | N | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.82 | 20.8 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | 30.02 | 762.5 | 30.07 | 763.8 | 44.3 | 6.8 | 100 | Calm | 0 | 0 | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Fine | W. H. Bevis. |
| *Father Point, Quebec | 29.45 | 748.0 | 29.48 | 748.8 | 35 | 1.7 | 96 | E | 15 | 6.7 | ..... | ..... | 10s | ..... | S | 0.49 | 12.4 | Threatening | J. McWilliams |
| Fredericton, N. B | 29.48 | 748.8 | 29.54 | 750.3 | 37.3 | 2.9 | 92 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0.03 | 0.5 | Misty | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.24 | 742.7 | 30.10 | 764.5 | 30 | — 1.1 | 59 | S | 9 | 4.0 | ..... | 0 | 2k | ..... | S | 0 | 0 | Fair | James Stewart. |
| Granton, Ontario | 28.50 | 723.9 | 29.68 | 752.6 | 32 | 0.0 | ..... | N | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | James Grant. |
| *Halifax, N. S | 29.44 | 747.8 | 29.57 | 751.1 | 36 | 2.2 | 98 | E | 10 | 4.6 | ..... | ..... | Fog | ..... | ..... | 0.116 | 2.92 | Light rain | F. Allison, M. A. |
| Hamilton, Ontario | 29.23 | 742.4 | 29.61 | 752.1 | 36.5 | 2.5 | 76 | W | ..... | ..... | 1 | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.11 | 739.4 | 29.45 | 748.0 | 34 | 1.1 | 89 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.18 | 4.6 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.68 | 753.9 | 29.72 | 754.9 | 32.6 | 0.3 | 96 | S | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 0.07 | 1.8 | Foggy | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 29.12 | 739.6 | 29.32 | 744.7 | 33 | 0.6 | 96 | N | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 1.06 | 26.9 | Heavy snow | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 28.92 | 734.6 | 29.64 | 752.8 | 28 | — 2.2 | 88 | N | 16 | 7.2 | ..... | ..... | 10n | ..... | NW | 0.02 | 0.5 | Cloudy | Rev. R. Mosley. |
| Peterboro, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 28.88 | 733.5 | 29.59 | 751.6 | 35 | 1.7 | 80 | NW | 13 | 5.8 | ..... | 10ck | 0 | NW | ..... | 0.01 | 0.3 | Fair | H. Morgan. |
| Port Hastings, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Peter Grant. |
| Port Stanley, Ontario | 28.97 | 735.8 | 29.63 | 752.6 | 35 | 1.7 | 76 | W | 9 | 4.0 | ..... | ..... | 10n | ..... | W | 0 | 0 | Cloudy | M. Payne. |
| *Quebec, Quebec | 29.07 | 738.4 | 29.40 | 746.7 | 33 | 0.6 | 100 | NE | ..... | ..... | 1 | ..... | 10n | ..... | NE | 1.57 | 39.9 | Sleet & rain | Capt. Ashe, R. N |
| *Rockliffe, Ontario | 29.11 | 739.4 | 29.60 | 751.8 | 21 | — 6.1 | 78 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | Inap. | Inap. | Light snow | W. H. McIntyre. |
| St. Andrews, N. B | 29.42 | 747.2 | 29.47 | 748.5 | 36 | 2.2 | 90 | SE | ..... | ..... | 3 | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | Dr. Gove. |
| St. John, N. B | 29.34 | 745.2 | 29.51 | 749.5 | 38 | 3.3 | 90 | NE | 12 | 5.4 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Overcast | G. Murdock, C. E. |
| *Saugeen, Ontario | 28.93 | 734.8 | 29.66 | 753.4 | 32 | 0.0 | 76 | NW | 17 | 7.6 | ..... | ..... | 10ks | ..... | N | Inap. | Inap. | Cloudy | K. Stewart. |
| Stayner, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Inap. | Inap. | ..... | R. J. Cole. |
| Stratford, Ontario | 28.30 | 718.8 | 29.61 | 752.1 | 31.2 | — 0.4 | 89 | NW | 15.0 | 6.7 | ..... | ..... | 10ks,n | ..... | ..... | 0 | 0 | Overcast | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.73 | 755.1 | 29.77 | 756.1 | 34 | 1.1 | 95 | E | 9 | 4.0 | ..... | ..... | 10n | ..... | ..... | 0.02 | 0.5 | Foggy | T. C. Hill. |
| *Toronto, Ontario | 29.19 | 741.4 | 29.58 | 751.3 | 34 | 1.1 | 72 | N | 10 | 4.5 | ..... | ..... | 10ks | ..... | N | 0 | 0 | Cloudy | Magnetic Observatory. |
| Windsor, N. S | 29.48 | 748.8 | 29.68 | 751.3 | 39.0 | 3.9 | 91 | E | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | 0.02 | 0.5 | Overcast | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 32.0 | 0.0 | 100 | E | ..... | ..... | ..... | 2 | 8 | ..... | ..... | 0 | 0 | Overcast | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,152 ft., or 360.3 m.

1879.—March 30.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Cloud. Amount. Up'er 0—10. | Cloud. Amount. Low'r 0—10. | Cloud. Direction. Upper. From— | Cloud. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.15 | 740.4 | 29.38 | 746.2 | 35 | 1.7 | 90 | S | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | 0.58 | 14.7 | Light snow.. | |
| Alpena, Michigan | 29.09 | 738.9 | 29.75 | 755.6 | 31 | — 0.6 | 79 | NW | 14 | 6.3 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy..... | |
| Atlanta, Georgia | 28.47 | 721.6 | 29.52 | 749.8 | 55 | 12.8 | 55 | NW | 32 | 14.3 | ..... | 2k | 0 | W | ..... | 0 | 0 | Fair..... | |
| Atlantic City, New Jersey | 29.50 | 749.3 | 29.51 | 749.5 | 41 | 5.0 | 74 | NW | 6 | 2.7 | ..... | 0 | 8s | ..... | NW | 0.37 | 9.4 | Cloudy..... | |
| Augusta, Georgia | 29.24 | 742.7 | 29.40 | 746.7 | 60 | 15.6 | 55 | W | 4 | 1.8 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy..... | |
| Baltimore, Maryland | 29.45 | 748.0 | 29.50 | 749.3 | 46 | 7.8 | 77 | N | 3 | 1.3 | ..... | 5k | 5s | W | W | 0.08 | 2.0 | Cloudy..... | |
| Barnegat, New Jersey | 29.43 | 747.5 | 29.46 | 748.3 | 41 | 5.0 | 91 | W | 8 | 3.6 | ..... | 8c | 0 | SW | ..... | 0.56 | 14.2 | Fair..... | |
| Bismarck, Dakota | 28.19 | 716.0 | 30.05 | 763.3 | 38 | 3.3 | 80 | E | 6 | 2.7 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy..... | |
| Boerne, Texas | 28.57 | 725.7 | 29.88 | 758.9 | 56 | 13.3 | 94 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Boise City, Idaho | 27.12 | 688.8 | 30.08 | 764.0 | 48 | 8.9 | 70 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Boston, Massachusetts | 29.17 | 740.9 | 29.32 | 744.7 | 36 | 2.2 | 100 | N | 8 | 3.6 | ..... | ..... | 10n | ..... | N | 0.24 | 6.1 | Light rain... | |
| Brackettville, Texas | 28.86 | 733.0 | 29.88 | 758.9 | 65 | 18.3 | 89 | Calm | 0 | 0 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| Breckenridge, Minnesota | 29.10 | 739.1 | 30.15 | 765.8 | 28 | — 2.2 | 88 | W | 5 | 2.2 | ..... | 10ck | 0 | W | ..... | 0 | 0 | Cloudy..... | |
| Brownsville, Texas | 29.94 | 760.5 | 29.99 | 761.7 | 76 | 24.4 | 77 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Buffalo, New York | 28.83 | 732.3 | 29.52 | 749.8 | 34.5 | 1.4 | 85 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | NW | 0.25 | 6.3 | Cloudy..... | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 53 | 11.7 | 19 | SE | ..... | ..... | 1 | 5cs | 0 | SW | ..... | 0 | 0 | Fair..... | |
| Burlington, Vermont | 29.06 | 738.1 | 29.35 | 745.5 | 34 | 1.1 | 90 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.55 | 14.0 | Heavy snow | |
| Cairo, Illinois | 29.50 | 749.3 | 29.89 | 759.2 | 53 | 11.7 | 61 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.25 | 641.3 | 30.05 | 763.3 | 63 | 17.2 | 72 | SW | 4 | 1.8 | ..... | 5k | 0 | S | ..... | 0 | 0 | Fair..... | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 47 | 8.3 | 48 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Camp, California | 27.38 | 695.4 | 29.95 | 760.7 | 48 | 8.9 | 63 | Calm | 0 | 0 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| Cape Hatteras, N. Carolina | 29.50 | 749.3 | 29.51 | 749.5 | 50 | 10.0 | 93 | E | 1 | 0.4 | ..... | 8cs | 0 | SW | ..... | 0.49 | 12.4 | Fair..... | |
| Cape Henry, Virginia | 29.51 | 749.5 | 29.52 | 749.8 | 47 | 8.3 | 85 | SW | 5 | 2.2 | ..... | ..... | 10s | ..... | S | 0.45 | 11.4 | Cloudy..... | |
| Cape Lookout, N. Carolina | 29.47 | 748.5 | 29.49 | 749.0 | 57 | 13.9 | 81 | SE | 8 | 3.6 | ..... | ..... | 8ks | ..... | W | 0.50 | 12.7 | Cloudy..... | |
| Cape May, New Jersey | 29.45 | 748.0 | 29.48 | 748.8 | 44 | 6.7 | 92 | W | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0.26 | 6.6 | Cloudy..... | |
| Castroville, Texas | 29.22 | 742.2 | 29.92 | 760.0 | 63 | 17.2 | 89 | W | 4 | 1.8 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| Charleston, South Carolina | 29.42 | 747.2 | 29.48 | 748.8 | 63 | 17.2 | 57 | SW | 10 | 4.5 | ..... | 4cs | 2s | W | W | 0 | 0 | Fair..... | |
| Cheyenne, Wyoming | 24.16 | 613.6 | 30.10 | 764.5 | 39 | 3.9 | 46 | N | 1 | 0.4 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair..... | |
| Chicago, Illinois | 29.16 | 740.7 | 29.86 | 758.4 | 36 | 2.2 | 71 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 0.02 | 0.5 | Cloudy..... | |
| Cincinnati, Ohio | 29.04 | 737.6 | 29.69 | 754.1 | 45 | 7.2 | 72 | NW | 16 | 7.2 | ..... | 5k | 4ks | N | NW | 0.40 | 10.2 | Cloudy..... | |
| Cleveland, Ohio | 28.91 | 734.3 | 29.64 | 752 8 | 35 | 1.7 | 80 | NW | 11 | 4.9 | ..... | ..... | 10s | ..... | W | 0.09 | 2.3 | Cloudy..... | |
| Coleman City, Texas | 28.23 | 717.0 | 29.86 | 758.4 | 64 | 17.8 | 83 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Columbus, Ohio | 28.79 | 731.3 | 29.62 | 752.3 | 42 | 5.6 | 66 | N | 7 | 3.1 | ..... | ..... | 10ks | ..... | NW | 0.22 | 5.6 | Cloudy..... | |
| Concho, Texas | 28.14 | 714.7 | 29.81 | 757.2 | 55 | 12.8 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Corsicana, Texas | 29.49 | 749.0 | 29.95 | 760.7 | 59 | 15.0 | 65 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Davenport, Iowa | 29.27 | 743.4 | 29.92 | 760.0 | 39 | 3.9 | 82 | NW | 5 | 2.2 | ..... | 0 | 2s | ..... | W | 0.07 | 1.8 | Fair..... | |
| Deadwood, Dakota | 25.42 | 645.7 | ..... | ..... | 33 | 0.6 | 61 | Calm | 0 | 0 | ..... | 2k | 0 | S | ..... | 0 | 0 | Fair..... | |
| Decatur, Texas | 28.82 | 732.0 | 29.96 | 761.0 | 65 | 18.3 | 44 | NE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Denison, Texas | 29.18 | 741.2 | 29.96 | 761.0 | 61 | 16.1 | 44 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Denver, Colorado | 24.91 | 632.7 | 30.13 | 765.3 | 42 | 5.6 | 66 | S | 4 | 1.8 | ..... | 2ck | 0 | NW | ..... | 0 | 0 | Fair..... | |
| Des Moines, Iowa | 29.15 | 740.4 | 30.06 | 763.5 | 37 | 2.8 | 81 | NW | 6 | 2.7 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair..... | |
| Detroit, Michigan | 28.99 | 736.3 | 29.66 | 753.4 | 36 | 2.2 | 80 | N | 9 | 4.0 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy..... | |
| Dodge City, Kansas | 27.61 | 698.7 | 29.83 | 757.7 | 45 | 7.2 | 68 | NE | 5 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Dubuque, Iowa | 29.25 | 742.9 | 29.96 | 761.0 | 40 | 4.4 | 82 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy..... | |
| Duluth, Minnesota | 29.36 | 745.7 | 30.06 | 763.3 | 36 | 2.2 | 90 | NW | 5 | 2.2 | ..... | ..... | 10s | ..... | NW | 0.12 | 3.0 | Cloudy..... | |
| Eagle Pass, Texas | 29.23 | 742.4 | 29.96 | 761.0 | 64 | 17.8 | 94 | Calm | 0 | 0 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| Eastport, Maine | 29.39 | 746.5 | 29.46 | 748.3 | 36 | 2.2 | 100 | E | 21 | 9.4 | ..... | ..... | 10n | ..... | E | 0.08 | 2.0 | Light rain... | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 69 | 20.6 | 90 | NW | ..... | ..... | 1 | 0 | 2s | ..... | Calm | 0 | 0 | Fair..... | |
| El Paso, Texas | 26.31 | 668.3 | ..... | ..... | 49 | 9.4 | 81 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Erie, Pennsylvania | 28.86 | 733.0 | 29.68 | 754.3 | 36 | 2.2 | 90 | NW | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.37 | 9.4 | Sleeting..... | |
| Escanaba, Michigan | 29.25 | 742.9 | 29.93 | 760.2 | 29 | — 1.7 | 56 | N | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Florence, Arizona | 28.50 | 723.9 | 30.10 | 764.5 | 67 | 19.4 | 42 | SE | 4 | 1.8 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| Fort Buford, Dakota | 27.97 | 710.4 | ..... | ..... | 38 | 3.3 | 90 | N | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Fort Craig, New Mexico | 25.64 | 651.2 | 29.71 | 754.6 | 39 | 3.9 | 45 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Davis, Texas | 25.28 | 642.1 | 30.24 | 768.1 | 49 | 9.4 | 64 | W | 1 | 0.4 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair..... | |
| Fort Gibson, Indian Ter | 29.47 | 748.5 | 30.01 | 762.2 | 54 | 12.2 | 61 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Griffin, Texas | 28.72 | 729.5 | 29.98 | 761.5 | 54 | 12.2 | 67 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Keogh, Montana | 27.44 | 697.0 | ..... | ..... | 38 | 3.3 | 90 | NW | 1 | 0.4 | ..... | 8c | 0 | Calm | ..... | Inap. | Inap. | Fair..... | |
| Fort McKavett, Texas | 27.76 | 705.1 | 29.73 | 755.1 | 55 | 12.8 | 68 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.78 | 731.0 | 29.88 | 758.9 | 55 | 12.8 | 56 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Stevenson, Dakota | 28.17 | 715.5 | ..... | ..... | 38 | 3.3 | 71 | Calm | ..... | ..... | 0 | 5ck | 0 | NW | ..... | 0 | 0 | Fair..... | |
| Fredericksburg, Texas | 28.27 | 718.0 | 29.77 | 756.1 | 72 | 22.2 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Galveston, Texas | 29.94 | 760.5 | 29.99 | 761.7 | 70 | 21.1 | 100 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Graham, Texas | 28.91 | 734.3 | 29.97 | 761.2 | 50 | 10.0 | 72 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Grand Haven, Michigan | 29.14 | 740.1 | 29.79 | 756.7 | 36 | 2.2 | 80 | N | 13 | 5.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Indianapolis, Indiana | 28.96 | 735.6 | 29.74 | 755.4 | 41 | 5.0 | 65 | NW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear..... | |
| Indianola, Texas | 29.98 | 761.5 | 30.01 | 762.2 | 70 | 21.1 | 90 | SW | 10 | 4.5 | ..... | 10c | 0 | W | ..... | 0 | 0 | Cloudy..... | |
| Jacksboro, Texas | 28.83 | 732.3 | 29.94 | 760.5 | 63 | 17.2 | 47 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Jacksonville, Florida | 29.65 | 753.1 | 29.67 | 753.6 | 68 | 20.0 | 70 | SW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Keokuk, Iowa | 29.28 | 743.7 | 29.90 | 759.4 | 44 | 6.7 | 76 | N | 9 | 4.0 | ..... | 1k | 0 | NW | ..... | 0 | 0 | Clear..... | |
| Key West, Florida | 29.90 | 759.4 | 29.93 | 760.2 | 73 | 22.8 | 81 | NW | 19 | 8.5 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Fair..... | |
| Kittyhawk, North Carolina | 29.47 | 748.5 | 29.50 | 749.3 | 49 | 9.4 | 93 | S | 6 | 2.7 | ..... | 5cs | 5s | Calm | N | 0.40 | 10.2 | Cloudy..... | |
| Knoxville, Tennessee | 28.60 | 726.4 | 29.58 | 751.3 | 47 | 8.3 | 70 | N | 22 | 9.8 | ..... | ..... | 10n | ..... | N | 0.50 | 12.7 | Light rain... | |
| La Crosse, Wisconsin | 29.25 | 742.9 | 30.00 | 762.0 | 38 | 3.3 | 72 | N | 10 | 4.5 | ..... | 8k | 0 | N | ..... | 0 | 0 | Fair..... | |
| La Mesilla, New Mexico | 26.15 | 664.2 | 30.30 | 769.6 | 45 | 7.2 | 53 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Laredo, Texas | 29.57 | 751.1 | 29.90 | 759.4 | 70 | 21.1 | 90 | Calm | 0 | 0 | ..... | 10ck | 0 | Calm | ..... | 0 | 0 | Cloudy..... | |
| Leavenworth, Kansas | 29.22 | 742.2 | 30.07 | 763.8 | 44 | 6.7 | 60 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Los Angeles, California | 29.66 | 753.4 | 30.00 | 762.0 | 58.0 | 14.4 | 53 | NE | 6 | 2.7 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear..... | |
| Louisville, Kentucky | 29.15 | 740.4 | 29.70 | 754.4 | 47 | 8.3 | 62 | NW | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0.14 | 3.6 | Clear..... | |
| Lynchburg, Virginia | 28.77 | 730.7 | 29.43 | 747.5 | 48 | 8.9 | 70 | W | 1 | 0.4 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Cloudy..... | |
| Madison, Wisconsin | 28.91 | 734.3 | 29.91 | 759.7 | 36 | 2.2 | 80 | NW | 8 | 3.6 | ..... | 10k | 0 | NW | ..... | 0 | 0 | Cloudy..... | |
| Marquette, Michigan | 29.24 | 742.7 | 29.97 | 761.2 | 27 | — 2.8 | 64 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Mason, Texas | 28.39 | 721.1 | 30.12 | 765.0 | 60 | 16.6 | 71 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Memphis, Tennessee | 29.57 | 751.1 | 29.88 | 758.9 | 63 | 17.2 | 52 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear..... | |
| Milwaukee, Wisconsin | 29 12 | 739.6 | 29.87 | 758.7 | 35 | 1.7 | 70 | N | 14 | 6.3 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy..... | |
| Mobile, Alabama | 29.79 | 756.7 | 29.84 | 757.9 | 67 | 19.4 | 57 | NW | 13 | 5.8 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear..... | |
| Montgomery, Alabama | 29.48 | 748.8 | 29.71 | 754.6 | 66 | 18.9 | 40 | W | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Morgantown, West Virginia | 28.48 | 723.4 | 29.52 | 749.8 | 39 | 3.9 | 82 | N | 12 | 5.4 | ..... | ..... | 10ks | ..... | N | 0.65 | 16.5 | Cloudy..... | |
| Mt. Washington, N. H. | 23.04 | 585.2 | 29.40 | 746.7 | 32 | 0.0 | 100 | SE | 78 | 34.9 | ..... | ..... | 10n | ..... | SE | 0.83 | 21.1 | Light snow.. | |
| Nashville, Tennessee | 29.22 | 742.2 | 29.75 | 755.6 | 54 | 12.2 | 55 | NW | 12 | 5.4 | ..... | 0 | 5ks | ..... | NW | 0.13 | 3.3 | Fair..... | |
| New Haven, Connecticut | 29.26 | 743.2 | 29.38 | 746.2 | 43 | 6.1 | 75 | NW | 3 | 1.3 | ..... | 2cs | 0 | Calm | ..... | 0.70 | 17.8 | Clear..... | |
| New London, Connecticut | 29.29 | 744.0 | 29.34 | 745.2 | 40 | 4.4 | 52 | NW | 6 | 2.7 | ..... | 1k | 0 | NW | ..... | 0.57 | 14.5 | Clear..... | |
| New Orleans, Louisiana | 29.82 | 757.4 | 29.87 | 758.7 | 68 | 20.0 | 79 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Newport, Rhode Island | 29.27 | 743.4 | 29.32 | 744.7 | 38.5 | 3.6 | 96 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | NW | 0.44 | 11.2 | Cloudy..... | |
| New York, New York | 29.27 | 743.4 | 29.44 | 747.8 | 41 | 5.0 | 83 | NW | 9 | 4.0 | ..... | ..... | 10ks | ..... | SE | 0.31 | 7.9 | Cloudy..... | |
| Norfolk, Virginia | 29.45 | 748.0 | 29.50 | 749.3 | 49 | 9.4 | 85 | S | 2 | 0.9 | ..... | ..... | 10n | ..... | SE | 0.22 | 5.6 | Light rain... | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.22 | 691.4 | 29.87 | 758.7 | 36 | 2.2 | 76 | NW | 8 | 3.6 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 30.01 | 762.2 | 30.05 | 763.3 | 49.2 | 9.6 | 85 | S | 7 | 3.1 | ..... | ..... | 10s | ..... | ..... | 0.79 | 20.1 | Cloudy | |
| Omaha, Nebraska | 28.95 | 735.3 | 30.07 | 763.8 | 39 | 3.9 | 64 | NW | 6 | 2.7 | ..... | 2k | 2s | NW | Calm | 0 | 0 | Fair | |
| Oswego, New York | 29.16 | 740.7 | 29.47 | 748.5 | 37 | 2.8 | 81 | E | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.79 | 20.1 | Light snow | |
| Pembina, Dakota | 29.23 | 742.4 | 30.09 | 764.3 | 30 | — 1.1 | 100 | S | 6 | 2.7 | ..... | 0 | 5s | ..... | NW | 0 | 0 | Fair | |
| Philadelphia, Pa | 29.43 | 747.5 | 29.48 | 748.8 | 42 | 5.6 | 74 | NW | 8 | 3.6 | ..... | ..... | 10ks | ..... | NW | 0.14 | 3.6 | Cloudy | |
| Phœnix, Arizona | 28.78 | 731.0 | 30.56 | 776.2 | 62 | 16.7 | 41 | NE | 1 | 0.4 | ..... | 0 | 8s | ..... | NE | 0 | 0 | Cloudy | |
| Pike's Peak, Colorado | 18.02 | 457.7 | 30.28 | 767.8 | 28 | — 3.3 | 28 | NW | 16 | 7.2 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Ploche, Nevada | 24.11 | 612.4 | 29.88 | 758.9 | 50 | 10.0 | 20 | S | 6 | 2.7 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 28.75 | 730.2 | 29.55 | 750.6 | 39 | 3.9 | 82 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | NW | 0.41 | 10.4 | Cloudy | |
| Port Huron, Michigan | 28.99 | 736.3 | 29.67 | 753.6 | 38 | 0.6 | 89 | N | 14 | 6.3 | ..... | ..... | 10ks | ..... | N | 0.02 | 0.5 | Cloudy | |
| Portland, Maine | 29.30 | 742.2 | 29.35 | 745.5 | 38 | 3.3 | 100 | E | 8 | 3.6 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Portland, Oregon | 29.89 | 759.2 | 29.99 | 761.7 | 53.5 | 11.9 | 93 | NE | 3 | 1.3 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Prescott, Arizona | 24.80 | 629.9 | 30.16 | 766.1 | 44 | 6.7 | 52 | S | 3 | 1.3 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Pilot Point, Texas | 29.16 | 740.4 | 29.95 | 760.7 | 65 | 18.3 | 73 | SE | 3 | 1.3 | ..... | 2k | 0 | S | ..... | 0 | 0 | Fair | |
| Punta Rassa, Florida | 29.86 | 758.4 | 29.88 | 758.9 | 72 | 22.2 | 85 | W | 18 | 8.0 | ..... | 2k | 5ks | W | W | 0 | 0 | Fair | |
| Red Bluff, California | 29.49 | 749.0 | 29.84 | 757.9 | 57 | 13.9 | 87 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rio Grande City, Texas | 29.83 | 757.7 | 30.05 | 763.3 | 67 | 19.4 | 90 | Calm | 0 | 0 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Rochester, New York | 28.88 | 733.5 | 29.49 | 749.0 | 34 | 1.1 | 90 | NW | 11 | 4.9 | ..... | ..... | 10n | ..... | NW | 0.58 | 14.7 | Light snow | |
| Roseburg, Oregon | 29.38 | 746.2 | 29.94 | 760.5 | 51.5 | 10.8 | 96 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sacramento, California | 29.75 | 755.6 | 29.83 | 757.7 | 60 | 15.6 | 92 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.33 | 745.0 | 29.90 | 759.4 | 48 | 8.9 | 63 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| St. Marks, Florida | 29.70 | 754.4 | 29.71 | 754.6 | 63 | 17.2 | 78 | SW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.18 | 741.2 | 30.02 | 762.5 | 37 | 2.8 | 70 | NW | 9 | 4.0 | ..... | 1c | 0 | NW | ..... | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.64 | 651.2 | 29.97 | 761.2 | 52 | 11.1 | 41 | SE | 4 | 1.8 | ..... | 8k | 0 | NW | ..... | 0 | 0 | Cloudy | |
| San Antonio, Texas | 29.31 | 744.5 | 29.88 | 758.9 | 65 | 18.3 | 84 | Calm | 0 | 0 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.86 | 758.4 | 29.92 | 760.0 | 72 | 22.2 | 88 | NE | 16 | 7.2 | ..... | ..... | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.01 | 736.8 | 29.68 | 753.9 | 38 | 3.3 | 81 | N | 18 | 8.0 | ..... | 5k | 5ks | N | N | 0.05 | 1.3 | Cloudy | |
| Sandy Hook, New Jersey | 29.40 | 746.7 | 29.43 | 747.5 | 41 | 5.0 | 100 | W | 12 | 5.4 | ..... | ..... | 10s | ..... | W | 0.66 | 16.8 | Cloudy | |
| San Francisco, California | 29.80 | 756.9 | 29.87 | 758.7 | 57 | 13.9 | 81 | N | 6 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 23.36 | 593.3 | 29.90 | 759.4 | 47 | 8.3 | 21 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.44 | 747.8 | 29.68 | 760.0 | 65 | 18.3 | 58 | SW | 11 | 4.9 | ..... | 5c | 5ks | W | W | 0 | 0 | Cloudy | |
| Shreveport, Louisiana | 29.71 | 754.6 | 29.93 | 760.2 | 62 | 16.7 | 61 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Silver City, New Mexico | 24.39 | 619.5 | 30.64 | 778.2 | 43 | 6.1 | 58 | NW | 4 | 1.8 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Smithville, North Carolina | 29.44 | 747.8 | 29.48 | 748.8 | 60 | 15.6 | 88 | S | 16 | 7.2 | ..... | 10cs | 0 | NW | ..... | 0.05 | 1.3 | Cloudy | |
| Springfield, Massachusetts | 29.20 | 741.7 | 29.32 | 744.7 | 40 | 4.4 | 82 | S | 1 | 0.4 | ..... | 0 | 5ks | ..... | Calm | 0.45 | 11.4 | Fair | |
| Stockton, Texas | 27.02 | 686.3 | 30.02 | 762.5 | 53 | 11.7 | 73 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass. | 29.26 | 743.2 | 29.32 | 744.7 | 39 | 3.9 | 100 | SW | 6 | 2.7 | ..... | ..... | 10n | ..... | SW | 0.40 | 10.2 | Light rain | |
| Toledo, Ohio, | 29.00 | 736.6 | 29.69 | 754.1 | 40 | 4.4 | 65 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Tucson, Arizona | 27.57 | 700.3 | 30.12 | 765.0 | 67 | 19.4 | 41 | E | 3 | 1.3 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Umatilla, Oregon | 29.62 | 752.3 | 30.11 | 764.8 | 50.0 | 10.0 | 93 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 34 | 1.1 | 100 | SW | ..... | ..... | 2 | ..... | 10s | ..... | SW | 0.11 | 2.8 | Cloudy | |
| Uvalde, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Vicksburg, Mississippi | 29.66 | 753.4 | 29.92 | 760.0 | 64 | 17.8 | 53 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Virginia City, Montana | 24.30 | 617.2 | 29.78 | 756.4 | 46 | 7.8 | 54 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Visalia, California | 29.47 | 748.5 | 29.83 | 757.7 | 62 | 16.7 | 48 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 29.38 | 746.2 | 29.49 | 749.0 | 43 | 6.1 | 92 | Calm | 0 | 0 | ..... | 2k | 5ks | SW | SW | 0.21 | 5.3 | Clearing | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 55 | 12.8 | 62 | NW | ..... | ..... | 1 | 10cs | 0 | S | ..... | 0 | 0 | Cloudy | |
| Wilmington, N. Carolina | 29.37 | 746.0 | 29.45 | 748.0 | 58 | 14.4 | 76 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.12 | 3.0 | Cloudy | |
| Winnemucca, Nevada | 25.61 | 650.5 | 29.97 | 761.2 | 40 | 4.4 | 48 | SW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass | 29.25 | 742.9 | 29.29 | 744.0 | 39 | 3.9 | 91 | W | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0.06 | 1.5 | Cloudy | |
| Yankton, Dakota | 28.87 | 733.3 | 30.20 | 767.1 | 35 | 3.3 | 72 | NW | 2 | 0.9 | ..... | 10ck | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.75 | 755.6 | 29.91 | 759.7 | 68 | 20.0 | 47 | NE | 1 | 0.4 | ..... | 8k | 0 | Calm | ..... | 0 | 0 | Fair | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.46 | 722.9 | 29.86 | 758.4 | 55 | 12.8 | 44 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I. | 29.91 | 759.7 | 29.96 | 761.0 | 74 | 23.3 | 72 | W | 4.8 | 2.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A. | 25.25 | 641.3 | ..... | ..... | 65.0 | 18.3 | 87 | SW | 1 | 0.4 | ..... | ..... | 10n | ..... | ..... | 0.60 | 15.2 | ..... | Thomas Herran. |
| Navassa, W. I. | 29.86 | 758.4 | 29.94 | 760.5 | 79 | 26.1 | ..... | NE | 4 | 1.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Partly clo'dy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.01 | 762.2 | 30.01 | 762.2 | 81 | 27.2 | 83 | NE | ..... | ..... | 2 | ..... | 8ks | ..... | ..... | 0 | 0 | ⅛ Clouded | O. J. Hering. |
| Santiago de Cuba, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A. | 29.90 | 759.4 | 29.95 | 760.7 | 11.0 | —11.7 | 90 | S | 9 | 4.0 | ..... | ..... | 9s | ..... | S | Inap. | Inap. | Snowing | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.6 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,036(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,870 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m., Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,276 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.45 in. The instrumental error of the barometer at Medellin is not known.

## UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | | | | | | | | | | | | | | | | | | | | | |
| Navy Yard, Pensacola, Fla. | 29.94 | 760.5 | 68 | 20.0 | 68 | 20.0 | 98 | W | 7 | 3.1 | | | 0 | | | 0 | 0 | | | Clear | |
| Navy Yard, Portsmouth, N.H | 29.38 | 746.2 | 55 | 12.8 | 36 | 2.2 | 90 | NE | 6 | 2.7 | | | 10 | | | 0.2 | 5. | | | Rainy | |
| Naval Hospital, Yokohama, Japan | 29.91‡ | 759.7‡ | | | 56.5 | 13.6 | 84 | Calm | | | 0 | | 10s | | | 0.25 | 6.3 | | | Covered | |
| Adams, Panama * | 29.96 | 761.0 | 79 | 26.1 | 78 | 25.6 | 95 | NW | | | 1 | | 8 | | N;W | | | | | Fair | |
| Alaska, N. 50° 00′, W. 124° 37′ | 30.14‡ | 765.5‡ | | | 39 | 3.9 | 100 | S | | | 1 | | 0 | | | 0.33 | 8.4 | | | Blue sky | |
| Alliance, Leghorn, Italy | 30.05‡ | 763.3‡ | | | 66 | 18.9 | 64 | Calm | | | 0 | | 3 | | Calm | | | | | Pleasant | |
| Ashuelot, Hong-Kong, China * | 29.89‡ | 759.2‡ | | | 68 | 20.0 | 95 | Calm | | | 0 | | 2 | | ENE | | | | | Misty | |
| Canonicus, New Orleans, La * | 29.85 | 758.2 | 49 | 9.4 | 66 | 18.9 | 94 | W | | | 3 | | 0 | | | | | | | Clear | |
| Colorado, New York, N. Y. | 29.41 | 747.0 | 42 | 5.6 | 42 | 5.6 | 91 | W | 7 | 3.1 | | | 10 | | | 0.23 | 5.8 | | | Light fog | |
| Constitution Lisbon, Portugal | 30.17‡ | 766.3‡ | | | 62 | 16.7 | 56 | SSW | | | 2 | | 6 | | SSW | | | | | Pleasant | |
| Despatch, Genoa, Italy | 30.05‡ | 763.3‡ | | | 64 | 17.8 | 62 | SE | | | 2 | | 5 | | SE | | | Smooth | | Fair | |
| Franklin, Norfolk, Va * | 29.63 | 752.6 | 62 | 16.7 | 49 | 9.4 | 93 | SSE | 2.4 | 1.1 | | | 10 | | WSW | 0.6 | 15. | | | Cloudy | |
| Gettysburg, Genoa, Italy | 29.96‡ | 761.0‡ | | | 60 | 15.6 | 88 | SSE | | | 3 | | 2 | | S;E | 0 | 0 | | | Fair | |
| Hartford, Montevideo, Uruguay * | 30.26 | 768.6 | 69 | 20.6 | 68 | 20.0 | 60 | ENE | | | 4 | | 10 | | ENE | 0 | 0 | Mod'ate | ENE | Cloudy | |
| Lackawana, Callao, Peru * | 29.77‡ | 756.1‡ | | | 68 | 20.0 | 95 | Calm | | | 0 | | 10 | | | 0 | 0 | Smooth | | Foggy | |
| Michigan, Erie, Pa † | 29.79 | 756.7 | | | 35 | 1.7 | 80 | N | | | 2 | | 10 | | | | | | | Overcast | |
| Monocacy, Shanghai, China * | 29.95‡ | 760.7‡ | | | 54 | 12.2 | 93 | SSE | | | 1 | | 2 | | SSE | | | | | Fair | |
| Monongahela Yokohama, Japan * | 29.91‡ | 759.7‡ | | | 60 | 15.6 | 76 | SW | | | 1 | | 6 | | | Light | Light | | | D. clouds | |
| New Hampshire, Port Royal, S. C. * | 29.55 | 750.6 | 64 | 17.8 | 63 | 17.2 | 57 | SSW | 19 | 8.5 | | | 8 | | WNW | 0 | 0 | | | Cloudy | |
| Onward, Callao, Peru † * | 30.04 | 763.0 | | | 66 | 18.9 | 94 | Calm | | | 0 | | 10 | | | | | Long | W | Foggy | |
| Palos, Tientsin, China * | 29.84 | 757.9 | 40 | 4.4 | 41 | 5.0 | 49 | ENE | | | 2 | | 0 | | | | | | | Clear | |
| Passaic, Washington, D. C. | | | | | 45 | 7.2 | 76 | NE | | | 1 | | 8 | | | | | | | Cloudy | |
| Pensacola, Valparaiso, Chili | 30.00‡ | 762.0‡ | | | 62 | 16.7 | 88 | Calm | 0 | 0 | | | 0 | | | 0 | 0 | | | Clear | |
| Plymouth, N. 38° 04′, W. 69° 00′ | 29.45‡ | 748.0‡ | | | 60 | 15.6 | 86 | WNW | | | 4–5 | | 10 | | ESE | | | Long | W | Overcast | |
| Powhatan, Norfolk, Va | 29.53‡ | 750.0‡ | | | 51 | 10.6 | 86 | N | | | 1 | | 10 | | N | 0.75 | 19.1 | Smooth | | Raining | |
| Quinnebaug, Malaga, Spain | 30.14‡ | 765.5‡ | | | 68 | 20.0 | 79 | S | | | 2 | | 2 | | S | | | | | Fair | |
| Ranger. Amoy, China | 29.83‡ | 757.7‡ | | | 73 | 22.8 | 85 | SSE | | | 1 | | 8 | | | | | Smooth | | Cloudy | |
| Richmond. N. 13° 07′, E. 50° 17′ | 29.80‡ | 759.4‡ | | | 81 | 27.2 | 78 | ENE | | | 2 | | 2 | | ENE | 0 | 0 | Smooth | | Fair | |
| Rio Bravo, Brownsville, Texas | 30.01 | 762.2 | 72 | 22.2 | 71 | 21.7 | 95 | SW | | | 1 | | 2 | | SW | | | | | Fair | |
| Santee, Annapolis, Md. | 29.51‡ | 749.5‡ | | | 44 | 6.7 | 84 | W | | | 1 | | 10 | | NW | 0.04 | 1.0 | | | Cloudy | |
| Saratoga, Hampton Roads, Va | 29.52‡ | 749.8‡ | | | 50 | 10.0 | 86 | SSW | | | 3 | | 10 | | | 0 | 0 | | | Overcast | |
| St. Louis, League Island, Pa | 29.42 | 747.2 | 62 | 16.7 | 42 | 5.6 | 100 | W | 6 | 2.7 | | | 10 | | W | 0.23 | 5.8 | | | Cloudy | |
| Supply, New York, N. Y. | 29.45‡ | 748.0‡ | | | 44 | 6.7 | 92 | W | | | 2 | | 10 | | | | | | | Light fog | |
| Trenton Genoa, Italy * | 29.98‡ | 761.5‡ | | | 64 | 17.8 | 73 | SE | | | 3 | | 8 | | SSE | 0 | 0 | Smooth | | Fair | |
| Tuscarora, Chipequa Bay, Mexico. | 29.92‡ | 760.0‡ | | | 84 | 28.9 | 53 | ENE | | | 5 | | 0 | | | 0 | 0 | Smooth | | Clear | |
| Wabash, Boston, Mass | 29.28‡ | 743.7‡ | | | 36 | 2.2 | 90 | W | 6 | 2.7 | | | 10 | | | 0.27 | 6.9 | | | Light rain | |
| Wyoming, Alexandria, Egypt * | 29.72‡ | 754.9‡ | | | 64 | 17.8 | 89 | NW | | | 3–6 | | 2 | | NW | | | Mod'ate | | Fair | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction betweeff the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. Colima, N. 18° 54′, W. 90° 49′..† | | 29.97‡ | 761.2‡ | 72 | 22.2 | | N | | | 2 | | 4 | | Calm | | Heavy ground | SSW | Misty | Capt. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, S. 0° 40′, W. 166° 40′ | | 29.87‡ | 758.7‡ | | | | ENE | | | 2 | | | | E | | Long rough | NW | Fine | R. C. Ghest, 1st Officer |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; and no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic, N. 50° 56′, W. 19° 35′..† | | 29.63 | 752.6 | 46 | 7.8 | | NW | | | 6 | | 2 | | NW | 0 | High | NW | Clear | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, N. 39° 50′, E. 166° 49′ | | 29.82‡ | 757.4‡ | 52 | 11.1 | 79 | S | | | 6 | | n | | S | | Rough | SW | Raining | J. A. Thompson, 2d Off't |
| S. S. Gaelic, N. 22° 17′, E. 114° 10′..† | | 29.97‡ | 761.2‡ | | | | Var. | | | 2 | | s | | Var. | 0 | | | | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, N. 36° 07′, W. 161° 52′ | | 30.36‡ | 771.1‡ | 47 | 8.3 | 85 | W | | | 6 | | 4ks | | WNW | | 5 | W | Raining | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 41° 24,′ W. 63° 41′ | | 29.52‡ | 749.8‡ | | | | E | | | 2 | | | | NW | | Mod'ate | E | Raining | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall of melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 41° 28′, W. 63° 02′ | | 29.55‡ | 750.6‡ | 53 | 11.7 | | E | | | 1 | | 5 | | WSW | Light | Light | E | Foggy | Captain Sargent. Wm. Shackford, Chief Officer. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
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| Furnished by the coöperation of A. Schumacher, & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

| **MARINE SERIES. (Miscellaneous.** | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller, Hyannis Harbor, Mass. | | 29.12‡ | 739.6‡ | 45 | 7.2 | 76 | SE | | | | | Fog | | | | | | Foggy | Capt. James Jorgensen. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; when the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 31, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
8:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:35 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time
1:26 P. M. CHRISTIANIA mean time.
1:38 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGEGIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | ..... | ..... | 30.17 | 766.3 | 62.8 | 17.1 | 80 | SW | ..... | ..... | 3 | ..... | 10? | ..... | ..... | ..... | ..... | Showing?.... | |
| Nemours | ..... | ..... | 30.01 | 762.3 | 72.0 | 22.2 | 67 | E | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Kesxuche. |
| Algiers | ..... | ..... | 29.92 | 760.0 | 77.4 | 25.2 | 39 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Tourillere. |
| La Calle | ..... | ..... | 30.03 | 762.7 | 67.6 | 19.7 | 89 | E | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Foufrede. |
| Tunis | ..... | ..... | 30.11 | 764.9 | 76.1 | 24.5 | 36 | SW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 30.22 | 767.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Saida | ..... | ..... | 30.02 | 762.6 | 75.2 | 24.0 | 21 | SW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Herbin. |
| Tebessa | ..... | ..... | 30.18 | 766.6 | 73.4 | 23.0 | 25 | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Watrin. |
| Geriville | ..... | ..... | 30.03 | 762.8 | 65.1 | 18.4 | 98 | SE | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Brugniaux. |
| Laghouat | ..... | ..... | 30.17 | 766.2 | 69.4 | 20.8 | 23 | SSE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Bertrand. |
| Biskra | ..... | ..... | 30.13 | 765.3 | 79.7 | 26.5 | 29 | SE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.47 | 748.4 | 30.00 | 762.1 | 63.9 | 17.7 | 44 | SW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.29 | 743.9 | 30.07 | 763.7 | 47.5 | 8.6 | 76 | E | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski. |
| Eperies | 29.13 | 739.9 | 30.02 | 762.4 | 49.6 | 9.8 | ..... | N | ..... | ..... | 1 | ..... | 5c;cs | ..... | S | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.74 | 730.1 | 29.98 | 761.5 | 59.4 | 15.2 | 52 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.61 | 726.6 | 30.05 | 763.3 | 50.5 | 10.3 | 67 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. A. Gottschling. |
| Kremsmünster | 28.61 | 726.6 | 29.93 | 760.1 | 59.4 | 15.2 | 50 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner. |
| Lemberg | 29.10 | 739.0 | 30.12 | 765.1 | 37.6 | 3.1 | 58 | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Dr. T. Stanecki. |
| Pola | 29.08 | 761.4 | 30.09 | 764.1 | 61.3 | 16.3 | 84 | SSE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.68 | 752.6 | 30.10 | 764.5 | 52.5 | 11.4 | 63 | W | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Julius Csics, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 30.00 | 762.1 | 30.11 | 764.7 | 67.7 | 14.3 | 65 | NW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | P. Busin. |
| Vienna | 29.27 | 743.4 | 29.98 | 761.4 | 61.2 | 16.2 | 54 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
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| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
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| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 m., or 1,350.4 feet.; Kremsmünster, 383.6 m., or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. O. Houzeau, Director of the Royal Observatory at Brussels

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | 29.56 | 750.8 | 29.76 | 755.9 | 53.1 | 11.7 | 68 | SW | ..... | ..... | 3 | ..... | 10 | ..... | SW | 0.091 | 2.30 | Light rain | Royal Observatory. |
| Furnes | 29.71 | 754.6 | 29.73 | 755.2 | 54.5 | 12.5 | 75 | SW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae. |
| Maeseyck | 29.69 | 754.0 | 29.81 | 757.2 | 54.7 | 12.6 | 68 | SSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.028 | 0.7 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0; instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m., Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.30 | 744.2 | 29.40 | 746.7 | 46.4 | 8.0 | ..... | SSW | 12 | 5.4 | ..... | ..... | 4 | ..... | ..... | 0.010 | 0.26 | Blue sky | W. Boswell. |
| Ardrossan | 29.37 | 746.0 | 29.38 | 746.2 | 45 | 7.2 | ..... | SSW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.38 | 746.2 | 49.2 | 9.6 | ..... | SSW | 22 | 9.8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Squally | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.51 | 749.5 | 43.7 | 6.5 | ..... | SW | 20 | 8.9 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.44 | 747.8 | 46.3 | 7.9 | ..... | SSW | 12 | 5.4 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy | Thomas Mackereth. |
| Bradford, Yorkshire | 29.13 | 739.9 | 29.52 | 749.8 | 50.1 | 10.1 | ..... | W | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0.05 | 1.3 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.92 | 760.0 | 29.95 | 760.7 | 83.0 | 28.3 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.61 | 752.1 | 53.9 | 12.2 | ..... | SW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | D. Todd. [C. |
| Cardington | ..... | ..... | 29.57 | 751.1 | 55.0 | 12.8 | ..... | SW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | John McLaren. |
| Chatham, School M. E. | 29.54 | 750.3 | 29.67 | 753.6 | 53.2 | 11.8 | ..... | SW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Corpl. Daly, R. E. |
| Dartmoor | 28.12 | 714.2 | 29.59 | 751.6 | 45.0 | 7.2 | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Fine | Alexander Watt. |
| Donaghadee | 29.37 | 746.0 | 29.41 | 747.0 | 49 | 9.4 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | J. Mac Gowan. |
| Dover | 29.68 | 753.9 | 29.70 | 754.4 | 48 | 8.9 | ..... | SW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | J. Costello. |
| Falmouth, Observatory | 29.42 | 747.2 | 29.64 | 752.8 | 50.9 | 10.5 | ..... | SW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| Fort Napier, (Natal) | 27.58 | 700.5 | 29.90 | 759.4 | 81.0 | 27.2 | ..... | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.69 | 754.1 | 29.92 | 760.0 | 88 | 31.1 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.38 | 746.2 | 45 | 7.2 | ..... | SW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.87 | 758.7 | 29.92 | 760.0 | 65.5 | 18.6 | ..... | W | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | Sergt. Wm. Allen, A. H. C. |
| Glasgow, Observatory | 29.19 | 741.4 | 29.39 | 746.5 | 43.2 | 6.2 | ..... | S | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Raining | D. G. Maclean. |
| Great Yarmouth | 29.64 | 752.8 | 29.64 | 752.8 | 44 | 6.7 | ..... | SSE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | Rain & hail | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.46 | 748.3 | 29.63 | 752.6 | 56.0 | 13.3 | ..... | SSW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | The Staff, for G. B. Airy. |
| Guernsey | 29.45 | 748.0 | 29.67 | 753.6 | 52 | 11.1 | ..... | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F.R.S. |
| Helston | 29.64 | 752.8 | 29.76 | 755.9 | 57 | 13.9 | ..... | SW | ..... | ..... | 2 | ..... | 2c | ..... | ..... | 0.9 | 23. | Very fine | M. P. Moyle. |
| Holyhead | 29.47 | 748.5 | 29.51 | 749.5 | 49 | 9.4 | ..... | SSW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | John Tilston. |
| Jersey | 29.44 | 747.8 | 29.73 | 755.1 | 48.0 | 8.9 | ..... | SW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | Blank | Blank | Gloomy | J. Fisher. |
| Kew, Observatory | 29.60 | 751.8 | 29.63 | 752.6 | 50.6 | 10.3 | ..... | SSW | 10 | 8.5 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Raining | The Meteorological Of. |
| Leicester, Museum | 29.31 | 744.5 | 29.56 | 750.8 | 50.2 | 10.1 | ..... | SW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 30.10 | 764.5 | 30.18 | 766.6 | 64 | 17.8 | ..... | NW | ..... | ..... | 1 | ..... | 1k | ..... | ..... | ..... | ..... | Blue sky | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.23 | 742.4 | 29.32 | 744.7 | 47 | 8.3 | ..... | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 29.86 | 758.4 | 74.5 | 23.6 | ..... | NW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.39 | 746.5 | 29.58 | 751.3 | 54.7 | 12.6 | ..... | SSW | ..... | ..... | 6 | ..... | 5ck;dn | SW | ..... | 0 | 0 | D. clouds | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.03 | 737.3 | 29.55 | 750.6 | 50.9 | 10.5 | ..... | SW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.60 | 751.8 | 52 | 11.1 | ..... | SW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | Squally | H. E. Bellamy. |
| Plymouth | 29.55 | 750.6 | 29.63 | 752.6 | 52.2 | 11.2 | ..... | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | John Merrifield. |
| Roche's Point | 29.48 | 748.8 | 29.52 | 749.5 | 49 | 9.4 | ..... | WSW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | Blank | Blank | ¾ clouded | W. Kennedy. |
| Saint Ann's Head | 29.41 | 747.0 | 29.57 | 751.1 | 48 | 8.9 | ..... | SSW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 29.33 | 745.0 | 47.5 | 8.6 | ..... | S | 14 | 6.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 30.02 | 762.5 | 42.6 | 5.9 | ..... | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | W. H. Lyne. |
| Sheffield | 29.28 | 743.7 | 29.55 | 750.6 | 43.3 | 6.3 | ..... | SW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | W. F. Cooper. |
| Silloth Rectory | 29.43 | 747.5 | 29.46 | 748.3 | 53.0 | 11.7 | 56 | SW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | 0.011 | 0.28 | D. clouds | Francis Redford, A. M |
| Stonyhurst, Observatory | 29.12 | 739.6 | 29.52 | 749.8 | 49.6 | 9.8 | ..... | S | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Misty | Rev. S. J. Perry. |
| Strathfield Turgiss | 29.42 | 747.2 | 29.63 | 752.6 | 53.4 | 11.9 | ..... | W | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | Squally | C. H. Griffith, F.M.S. |
| Thurso | 29.26 | 743.2 | 29.32 | 744.7 | 51 | 10.6 | ..... | SW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | John Trotter. |
| Truro, Royal Institution | 29.58 | 751.3 | 29.64 | 752.8 | 54 | 12.2 | ..... | W | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | W. Newcombe. |
| Valencia, Observatory | 29.47 | 748.5 | 29.50 | 749.3 | 50.1 | 10.1 | ..... | SW | 22 | 9.8 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.08 | 764.0 | 30.12 | 765.0 | 69.7 | 20.9 | 75 | SSE | 7 | 3.1 | ..... | 9 | 8 | ..... | ..... | 0.282 | 7.16 | Raining | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.84 | 757.9 | 55.0 | 13.0 | 82 | NW | ..... | ..... | 2 | ..... | 9k | ..... | ..... | 0.01 | 0.3 | Cloudy | Francis Abbott, F.R.A.S |
| Leith, Restalrig Park | ..... | ..... | 29.43 | 747.5 | 49.1 | 9.5 | ..... | W | ..... | ..... | 3 | ..... | 7k | ..... | ..... | 0.01 | 0.3 | Cloudy | Andrew Gibb. |
| Mauritius, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. | ..... | ..... | C. Meldrum. |
| Melbourne, Observatory | 29.88 | 758.9 | 30.07 | 763.8 | 55.0 | 12.8 | 75 | Calm | 0 | 0 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | Fine | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 29.28 | 743.7 | 44 | 6.7 | ..... | S | ..... | ..... | 4 | 5 | 5 | W | ..... | 0.3 | 8. | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.39 | 746.5 | 42 | 5.6 | ..... | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Hazy | Robert Burnet. |

Note—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 41° 01′, E. 29° 00′ | ..... | ..... | 30.05‡ | 763.3‡ | 47.8 | 8.8 | ..... | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | Capt. W. J. L. Wharton. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| S. S. Amanda, N. 36° 05′, W. 4° 00′ | ..... | ..... | 29.90‡ | 759.4‡ | 65.5 | 18.6 | ..... | SSE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Capt. B. Boyes. |
| Barque Belle-Isle, N. 41° 31′, W. 30° 24′ | ..... | ..... | 30.15‡ | 765.8‡ | 61 | 16.1 | ..... | SE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 6 | Confused. | Drizzling | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra, N. 42° 10′ W. 35° 02′ | ..... | ..... | 30.29‡ | 769.4‡ | 57.8 | 14.3 | ..... | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 2 | ..... | Overcast | Capt. Thos. Young. |
| Barque Commewyne, N. 50° 36′, W. 11° 20′ | ..... | ..... | 29.56‡ | 750.8‡ | 49 | 9.4 | ..... | WNW | ..... | ..... | 5 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Capt. A. Buchan. |
| Barque Fedalina, N. 19° 10′, W. 42° 20′ | ..... | ..... | 30.15 | 765.8 | 75 | 23.9 | ..... | ENE | ..... | ..... | 4 | ..... | 4 | ..... | SE | 3 | E | D. clouds | Capt. H. L. Fox. |
| Barque Merlole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam, N. 3° 02′, E. 105° 08′ | ..... | ..... | 29.84‡ | 757.9‡ | 80 | 26.7 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Hazy | Capt. Barlow. |
| S. S. Strathleven, N. 36° 24′, W. 4° 42′ | ..... | ..... | 29.85‡ | 758.2‡ | 61 | 16.1 | ..... | Calm | ..... | ..... | 0 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.28 | 667.5 | 30.00 | 762.0 | 67.1 | 19.5 | 81 | SE | ..... | ..... | 4 | 3ck | ..... | ..... | ..... | 0 | 0 | ..... | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.6 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.84 | 757.8 | 29.88 | 759.0 | 42.6 | 5.9 | 84 | SSE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Foggy |
| Fanöe | 29.68 | 753.9 | 29.70 | 754.4 | 42.8 | 6.0 | 96 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining |
| Godthaab, (Greenland) | 30.06 | 763.4 | 30.10 | 764.5 | 14.9 | — 9.5 | 81 | NNE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 29.12 | 739.7 | 29.16 | 740.6 | 49.6 | 8.3 | 81 | SSW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.50 | 749.4 | 29.67 | 753.7 | 34.5 | 1.4 | 96 | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.24 | 742.6 | 29.79 | 756.6 | 54.3 | 12.4 | 86 | SW | ..... | ..... | 1 | ..... | 8 | ..... | SW | 0.138 | 3.5 | Raining | Collignon, Director. |
| Amiens, Normal School | 29.05 | 753.1 | 29.76 | 755.9 | 51.4 | 10.8 | 84 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.098 | 2.5 | Covered | Bonvallet, Director. |
| Avignon, Normal School | 29.91 | 759.7 | 29.99 | 761.7 | 64.4 | 18 | 62 | SE | ..... | ..... | 2 | ..... | 5 | ..... | SE | 0 | 0 | ¼ covered | M. Giraud, Director. |
| Bar-sur-Seine | 29.30 | 744.1 | 29.84 | 758.0 | 59.4 | 15.2 | 60 | S | ..... | ..... | 1 | ..... | 8kn | ..... | SW | 0.063 | 1.6 | Very cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.51 | 749.5 | 29.79 | 756.7 | 55.6 | 13.1 | 68 | SSW | ..... | ..... | 1 | ..... | 5 | ..... | SW | 0.108 | 2.75 | Cloudy | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 29.00 | 736.7 | 29.91 | 759.6 | 61.5 | 16.4 | 56 | SW | ..... | ..... | 2 | ..... | 2 | ..... | SW | 0.16 | 4. | Slightly cl'dy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.09 | 738.8 | 30.00 | 762.0 | 63.5 | 17.5 | 47 | S | ..... | ..... | 3 | ..... | s | S | S | 0 | 0 | ..... | M. Marlot, Director. |
| Bourges, Normal School | 29.25 | 742.9 | 29.80 | 756.8 | 58.6 | 14.8 | 72 | E | ..... | ..... | 2 | ..... | 5 | E | E | 0.24 | 6. | Cloudy | A. Waquet, Director. |
| Brest, Naval Observatory | 29.42 | 747.2 | 29.66 | 753.4 | 55.4 | 13.0 | 74 | SW | ..... | ..... | 1 | ..... | 10 | ..... | SW | 0.256 | 6.50 | ..... | M.de Kermaree, Director |
| Carcassonne, Normal School | 29.43 | 747.6 | 29.85 | 758.1 | 59.7 | 15.4 | 73 | E | ..... | ..... | 3 | ..... | 2 | E | E | 0 | 0 | Slightly cl'dy | September, Director. |
| Caen, Normal School | 29.69 | 754.2 | 29.76 | 756.0 | 55.4 | 13 | 70 | SW | ..... | ..... | 2 | ..... | 8 | ..... | SW | 0.134 | 3.4 | Very cloudy | M. Lair, Director. |
| Chartres, Normal School | 29.19 | 741.4 | 29.75 | 755.6 | 52.2 | 11.2 | 96 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.091 | 2.3 | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.55 | 750.5 | 29.86 | 758.5 | 58.1 | 14.5 | 45 | SW | ..... | ..... | 3 | ..... | 8 | NE | NE | ..... | ..... | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.44 | 722.5 | 29.77 | 756.1 | 63.5 | 17.5 | 41 | SE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.063 | 1.6 | ..... | Alluard, Director. |
| Commercy, Normal School | 29.02 | 737.1 | 29.87 | 758.8 | 52.7 | 11.5 | 83 | S | ..... | ..... | 1 | ..... | 5kn | ..... | S | 0.106 | 2.7 | Cloudy | Dr. Coulet, Director. |
| Commune de Gréasque* | 28.94 | 735.0 | 30.08 | 764.0 | 53.2 | 11.8 | 53 | E | ..... | ..... | 4 | ..... | 8 | ..... | E | 0 | 0 | ¼ covered | M. Kina, Director. |
| Grenoble, Normal School | 29.13 | 739.9 | 29.87 | 758.8 | 69.4 | 20.8 | 37 | SSW | ..... | ..... | 2 | ..... | 5ks | SW | ..... | 0 | 0 | Cloudy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.60 | 751.9 | 29.82 | 757.3 | 56.5 | 13.6 | 82 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.016 | 0.4 | Covered | Mouillot, Director |
| Le Mans, Normal School | 29.48 | 748.8 | 29.79 | 756.6 | 54.5 | 12.5 | 79 | SW | ..... | ..... | 3 | ..... | 8 | ..... | SW | 0.071 | 1.8 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.95 | 735.3 | 29.80 | 756.5 | 62.4 | 16.9 | 53 | SSW | ..... | ..... | 6 | ..... | 5 | ..... | W | 0 | 0 | Cloudy | Baudry, Director. |
| Lorient, Naval Observatory | 29.64 | 752.9 | 29.74 | 755.4 | 54.9 | 12.2 | 93 | SSW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.307 | 7.8 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director. |
| Mirecourt, Normal School | 28.92 | 734.5 | 29.98 | 761.6 | 56.8 | 13.8 | 58 | NE | ..... | ..... | 1 | ..... | kn | ..... | SW | 0 | 0 | ..... | M. Barbier, Director. |
| Nismes, Normal School | 29.78 | 756.3 | 29.98 | 761.4 | 62.2 | 16.8 | 66 | S | ..... | ..... | 4 | ..... | 2 | ..... | S | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 28.92 | 734.6 | 30.02 | 762.5 | 59.4 | 15.2 | 76 | N | ..... | ..... | 1 | ..... | s | N | N | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.99 | 634.7 | ..... | ..... | 44.2 | 6.8 | 83 | SSW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0.209 | 5.3 | Cloudy | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.74 | 755.3 | 29.77 | 756.1 | 62.6 | 17.0 | 65 | SSE | ..... | ..... | 1 | ..... | 10 | S | S | 0.47 | 12. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.03 | 752.7 | 29.72 | 754.9 | 55.4 | 13.0 | 67 | S | ..... | ..... | 1 | ..... | 8 | ..... | S | 0.236 | 6.0 | Very cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.06 | 753.4 | 29.69 | 754.2 | 52.2 | 11.2 | 75 | WSW | ..... | ..... | 1 | ..... | 8 | WSW | WSW | 0.244 | 6.21 | Very cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.03 | 752.7 | 29.80 | 756.9 | 57.7 | 14.3 | 62 | SSW | ..... | ..... | 3 | ..... | ..... | ..... | SSW | 0.091 | 2.3 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.72 | 729.4 | 29.78 | 756.4 | 59.0 | 15 | 48 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | T. Huguet, Director. |
| Versailles Observatory | 29.30 | 744.1 | 29.79 | 756.6 | 54.3 | 12.4 | 68 | SW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.002 | 0.04 | Lightly cov. | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.29 | 743.9 | 29.87 | 758.8 | 63.5 | 17.5 | 75 | SE | ..... | ..... | 4 | ..... | 2 | ..... | S | 0 | 0 | Slightly cl'dy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.80 | 757.0 | 29.83 | 757.7 | 78.8 | 26 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchésai. |
| Lyons Obs'y, (Park Station) | 29.26 | 743.3 | 29.86 | 758.5 | 63.7 | 17.6 | 36 | SSW | ..... | ..... | 4 | ..... | 7 | ..... | SSW | 0.98 | 25. | Cloudy | Mr. Jays. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mont-Louis | 24.70 | 627.4 | 30.02 | 762.4 | 50.0 | 10.0 | 46 | SSE | 40.9 | 18.3 | ..... | ..... | 4 | ..... | SW | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | 30.12 | 765.0 | 61.9 | 16.6 | 72 | SE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Slightly cov | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.52 | 749.7 | ..... | ..... | 56.5 | 13.6 | 66 | S | ..... | ..... | 4 | ..... | 10 | ..... | SW | 0.020 | 0.5 | ..... | Marié Davy, Director. |
| Perpignan | 29.77 | 756.2 | 29.88 | 758.9 | 57.4 | 14.1 | 74 | NE | 3.8 | 1.7 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.28 | 565.9 | ..... | ..... | 31.3 | — 0.4 | ..... | SW | ..... | ..... | 7 | ..... | 9 | ..... | ..... | 0 | 0 | Cloudy | Gen'l de Nansouty. |
| Toulouse, Observatory | 29.12 | 739.5 | 29.84 | 757.8 | 60.8 | 16.0 | 73 | SSE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | M. Mercadier Juller. |
| Tours | 29.61 | 752.2 | 29.81 | 757.2 | 57.4 | 1491 | 72 | SW | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.189 | 4.8 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 29.87 | 758.8 | 29.90 | 759.5 | 55.4 | 13.0 | 90 | ESE | 14.1 | 6.3 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12. | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.11 | 739.3 | 29.95 | 760.7 | 49.8 | 9.9 | 84 | S | | | 6 | | 6 | W | | 0.039 | 1.0 | | Prof. Dr. Hoh. |
| Berlin | 29.74 | 755.5 | 29.91 | 759.8 | 57.2 | 14.0 | 55 | S | | | 1 | | 9 | | | 0.028 | 0.7 | | Prof. Arndt. |
| Breslau | 29.46 | 748.3 | 29.99 | 761.8 | 56.5 | 13.5 | 59 | S | | | 3 | | 7 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.47 | 748.6 | 29.50 | 749.4 | 57.2 | 14.0 | 65 | SSW | | | 1 | | 10 | SW | | 0 | 0 | | Albert Senx. |
| Cassel | 29.23 | 742.5 | 29.84 | 757.8 | 55.4 | 13.0 | 65 | SSE | | | 2 | | 7 | SW | | 0.044 | 1.12 | | Dr. H. Möhl. |
| Crefeld | 29.63 | 752.5 | 29.79 | 756.6 | 56.3 | 13.5 | 67 | S | | | 4 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.54 | 750.3 | 29.91 | 759.7 | 52.5 | 11.4 | | SSW | | | 2 | | 10 | | | 0.102 | 2.6 | | Physical Society. |
| Friedrichshafen | 28.50 | 723.8 | 29.92 | 760.0 | 55.8 | 13.1 | 66 | SW | | | 3 | | 2 | SW | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.73 | 755.2 | 29.80 | 757.0 | 52.5 | 11.4 | 57 | SSE | | | 3 | | 10n | | | 0.004 | 0.1 | Gloomy | Captain F. Hegemann. |
| Kiel | 29.77 | 756.2 | 29.79 | 756.6 | 49.6 | 9.8 | 78 | SW | | | 1 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.04 | 763.1 | 30.13 | 765.3 | 38.5 | 3.6 | 73 | SE | | | 5 | | 8 | | | 0 | 0 | | Prof. E Luther. |
| Köslin | | | 29.94 | 760.4 | 47.3 | 8.5 | | Calm | | | 0 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.50 | 749.4 | 29.93 | 760 1 | 55.0 | 12.8 | 65 | SSW | | | 2 | | 9 | WSW | | 0.043 | 1.1 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 30.09 | 764.3 | 30.14 | 765.5 | 38.8 | 3.8 | 70 | SSE | | | 3 | | 10s | | | | | Squally | Skalweit. |
| Neufahrwasser | 30.04 | 762.9 | 30.05 | 763.3 | 50.4 | 10.2 | 56 | S | | | 5 | | 7 | | | 0.020 | 0.5 | | A. Lothes. |
| Posen | 29.71 | 754.5 | 30.00 | 761.9 | 54.7 | 10.4 | 73 | SW | | | 5 | | 5 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.38 | 746.2 | 29.92 | 760.0 | 59.7 | 15.4 | 70 | Calm | | | 0 | | 9 | W | | 0.031 | 0.77 | Raining | Imp. University Observatory. |
| Stuttgart | 28.96 | 735.5 | 29.89 | 759.1 | 58.1 | 14.5 | 55 | SW | | | 1 | | 9 | W | | 0.024 | 0.6 | | Prof. Schoder. |
| Treves, (Trier) | 29.32 | 744.6 | 29.84 | 757.8 | 55.2 | 12.9 | 61 | SW | | | 6 | | 10 | | | 0 | 0 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.40 | 721.4 | 29.90 | 759.5 | 54.3 | 12.4 | 66 | W | 7 | 3 | | | 10 | | W | 0.110 | 2.8 | | Dr. Van Bebber. |
| Wustrow, Naval School | 29.85 | 758.3 | 29.88 | 758.9 | 49.1 | 9.5 | 89 | ESE | | | 1 | | 10 | | | 0 | 0 | Foggy | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12. | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.69 | 754.2 | 30.09 | 764.2 | 61.0 | 16.1 | | S | | | 1.0 | | | | | | | ⅛ Clear | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12. | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.83 | 757.6 | 29.88 | 758.9 | 80.8 | 27.1 | 58 | W | 14 | 6.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.35 | 745.6 | 29.82 | 757.3 | 94.1 | 34.5 | 17 | W | 6.8 | 3.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.78 | 756.3 | 29.81 | 757.3 | 86.8 | 30.4 | 50 | NNW | 3.6 | 16.1 | | | 4 | | SSW | 0 | 0 | D. clouds | |
| Lahore | 29.12 | 739.7 | 29.86 | 758.6 | 80.5 | 26.9 | 45 | E | 5.3 | 2.4 | | | 2 | | | 0.02 | 0.5 | Blue sky | |
| Belgaum | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.90 | 733.9 | 29.79 | 756.6 | 82.8 | 28.2 | 33 | NW | 2.9 | 1.3 | | | 7 | | | 0 | 0 | | |
| Agra | 29.22 | 742.2 | 29.77 | 756.1 | 94.6 | 34.8 | 22 | W | | | | | | | | 0 | 0 | | |
| Nagpur | 28.77 | 730.8 | | | | | | Calm | 4.3 | 1.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.40 | 746.8 | 29.77 | 756.1 | 94.3 | 34.6 | 38 | WNW | 1.8 | 0.8 | | | 10 | | | 0 | 0 | Overcast | |
| Allahabad | 29.48 | 748.7 | 29.78 | 756.4 | 98.1 | 36.7 | 19 | Calm | 2.3 | 1.0 | | | 4 | W | | 0 | 0 | D. clouds | |
| Patna | 29.56 | 750.9 | 29.74 | 755.4 | 98.2 | 36.8 | 16 | W | 2.2 | 1.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.80 | 706.2 | 29.76 | 756.0 | 91.0 | 32.8 | 20 | NW | 5.8 | 2.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.72 | 755.0 | 29.80 | 757.0 | 90.1 | 32.3 | 48 | S | 3.3 | 1.5 | | | | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.76 | 755.8 | 29.78 | 756.3 | 90.3 | 32.4 | 38 | S | 4.0 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.36 | 745.8 | 29.74 | 755.5 | 89.5 | 31.9 | 33 | Calm | 2.1 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.73 | 755.1 | 29.82 | 757.5 | 82.9 | 28.3 | 91 | SW | 8.7 | 1.6 | | | 6 | | | 0 | 0 | Misty | |
| Sibsagar | 29.46 | 748.2 | 29.79 | 756.7 | 78.7 | 25.9 | 63 | Calm | 1.4 | 0.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.50 | 723.9 | 29.83 | 757.7 | 94.5 | 34.7 | 15 | N | 2.2 | 1.0 | | | 4 | E | | 0 | 0 | D. clouds | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the cooperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected or instrum'tal error and temperature. Inches. | Barometer. Corrected or instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. ..ow'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. nches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.68 | 753.8 | 30.09 | 764.3 | 61.5 | 16.4 | 61 | SW | 1.3 | 0.6 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.56 | 750.7 | 30.08 | 764.0 | 62.6 | 17.0 | 53 | SW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.97 | 761.3 | 30.08 | 764.1 | 61.3 | 16.3 | 56 | ESE | 1.8 | 0.8 | ..... | ..... | 4 | S | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 29.15 | 740.4 | 30.06 | 763.4 | 59.0 | 15.0 | 69 | W | 0.7 | 0.3 | ..... | ..... | 6 | WNW | ..... | 0.039 | 1.0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.93 | 760.3 | 30.13 | 765.2 | 58.8 | 14.9 | 74 | S | 7.4 | 3.3 | ..... | ..... | 10 | SE | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 28.14 | 714.7 | 30.05 | 763.2 | 56.5 | 13.6 | 64 | NNW | ..... | ..... | 2 | ..... | 7 | W | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 30.05 | 763.2 | 30.10 | 764.4 | 59.5 | 15.3 | 58 | NE | 9.4 | 4.2 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.87 | 758.7 | 30.13 | 765.3 | 63.1 | 17.3 | 50 | W | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci |
| Leghorn | 29.99 | 761.8 | 30.08 | 764.0 | 58.3 | 14.6 | 73 | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 29.97 | 761.2 | 30.14 | 765.6 | 64.4 | 18.0 | 61 | S | 9.4 | 4.2 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari |
| Lecce | 29.88 | 758.9 | 30.13 | 765.3 | 61.2 | 16.2 | 58 | NNW | 4.3 | 1.9 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.26 | 743 3 | 30.15 | 765.7 | 64.8 | 18.2 | 78 | NW | 4.9 | 2.2 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.90 | 759.4 | 30.09 | 764.3 | 64.9 | 18.3 | 54 | SE | ..... | ..... | 2 | ..... | 3 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.93 | 760.3 | 30.19 | 766.7 | 62.8 | 17.1 | 46 | E | 2.5 | 1.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 30.09 | 764.2 | 30.16 | 766.0 | 64.8 | 18.2 | 46 | ESE | 4.9 | 2.2 | ..... | ..... | 1 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.63 | 752.7 | 30.19 | 766.8 | 61.3 | 16.3 | 73 | SSW | 1.8 | 0.8 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. ) Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 29.98 | 761.5 | 29.99 | 761.7 | 53.7 | 12.1 | 84 | N | 2.4 | 1.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.82 | 757.4 | 30.02 | 762.5 | 53.7 | 12.1 | 93 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.81 | 757.2 | 29.88 | 758.9 | 55.5 | 13.1 | 91 | SSE | 3.5 | 1.6 | ..... | 3cs | 0 | S | ..... | 0 | 0 | Fair | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.08 | 637.0 | 30.14 | 765.5 | 50.0 | 10.0 | 45 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. L. Perez. |
| Leon | 24.48 | 620.7 | 30.09 | 764.5 | 61.9 | 16.6 | 68 | NW | ..... | ..... | 1 | 1c | 0 | SW | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.08 | 586.2 | 30.14 | 765.5 | 51.1 | 10.6 | 62 | N | 0.7 | 0.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 50.1 | 13.4 | 68 | WNW | ..... | ..... | 1 | 2cs | ..... | SW | ..... | 0 | 0 | Fair | M. V. de Leon, M. E. |
| Tlacotalpam | 29.95 | 760.8 | 29.97 | 761.1 | 73.2 | 22.9 | 90 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. M. Chazaro. |
| San Luis Potosi | 24.21 | 614.1 | 30.27 | 768.8 | 66.0 | 18.8 | 78 | SSE | ..... | ..... | 1 | 0 | 2 | ..... | W | 0 | 0 | Hazy | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.39 | 594.0 | 30.15 | 765.8 | 48.2 | 9.0 | 39 | NE | 0.04 | 0.02 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.38 | 720.8 | 30.02 | 762.6 | 75.2 | 24.0 | 53 | NE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

NOTE.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,593 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201 m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.74 | 755.5 | 29.74 | 755.5 | 50.0 | 10.0 | ..... | SSW | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.039 | 1.0 | ..... | |
| Groningen | 29.69 | 754.1 | 29.74 | 755.5 | 48.4 | 9.1 | ..... | SW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.035 | 0.9 | ..... | |
| Helder | 29.71 | 754.5 | 29.71 | 754.5 | 45.3 | 7.4 | ..... | SSW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.244 | 6.2 | ..... | |
| Hellevoetsluis | 29.72 | 755.0 | 29.72 | 755.0 | 49.8 | 9.9 | 88 | SW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.71 | 754.6 | 29.76 | 755.8 | 53.2 | 11.8 | 78 | SW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.028 | 0.7 | Very cloudy | H. v. d. Brink. |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.58 | 751.3 | 29.63 | 752.7 | 41.7 | 5.4 | 72 | SSE | 17.2 | 7.7 | ..... | ..... | 10 | ..... | ..... | 0.157 | 4.0 | ..... | |
| Brönö | 29.73 | 755.1 | 29.77 | 756.1 | 36.0 | 2.2 | 75 | S | 4 | 2 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.75 | 755.7 | 29.91 | 759.6 | 35.4 | 1.9 | 82 | ENE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | 0.012 | 0.3 | ..... | |
| Tromsö | 29.75 | 755.6 | 29.79 | 756.7 | 28.4 | — 2.0 | 60 | SW | 7 | 3 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.11 | 764.9 | 30.31 | 769.8 | 55.0 | 12.8 | 72 | NW | 4.3 | 1.9 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.84 | 732.6 | 29.88 | 758.9 | 56.1 | 13.4 | 64 | SSW | 15.4 | 6.9 | ..... | ..... | 10 | SSW | ..... | 0 | 0 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 29.99 | 761.8 | 30.08 | 764.0 | 63.1 | 17.3 | 50 | SSE | 11.9 | 5.3 | ..... | ..... | 2 | ..... | ..... | 0.031 | 0.8 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.44 | 747.8 | 29.80 | 757.0 | 52.5 | 11.4 | 94 | NW | 16.1 | 7.2 | ..... | ..... | 10 | ..... | ..... | 0.083 | 2.1 | Raining | The Staff. |
| Ponta Delgada, (Azores) | 30.28 | 769.0 | 30.35 | 770.8 | 60.4 | 15.8 | 55 | N | 3.8 | 1.7 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | A. G. da Silva Costa Com'dt. |
| D. Fernando | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| India | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, N. 0° 21′, E. 6° 46′ | 2 | SE | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa, Porto de S. Jose de Bissao, Senegambia | ..... | ..... | ..... | |
| Sá da Bandeira, S. 7° 13′, E. 13° 00′ | 3 | SW | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | 1 | ..... | Raining | J. M. T. Guimaraes, Com'd't. |
| Duque da Terceira, Santiago, Cape Verd I. | 2 | ..... | Blue sky | C.C.da Fonseca Ferreira, Comd't. |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.69 | 754.2 | 30.13 | 765.3 | 40.3 | 4.6 | 74 | SE | 11 | 5 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.82 | 757.3 | 30.26 | 768.5 | 36.0 | 2.2 | 74 | SE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds | Astronomical Obs. |
| Dorpat | 30.03 | 762.8 | 30.29 | 769.3 | 36.1 | 2.3 | 77 | S | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.32 | 770.0 | 30.33 | 770.4 | 30.4 | — 0.9 | 73 | SSE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.56 | 760.9 | 30.23 | 767.9 | 34.0 | 1.1 | 77 | ENE | 9 | 4 | ..... | ..... | 10k;ks; c | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 30.01 | 762.2 | 30.08 | 764.0 | 41.9 | 5.5 | 59 | NE | 45 | 20 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.81 | 757.1 | 29.83 | 757.6 | 42.1 | 5.6 | 77 | ENE | 16 | 7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 30.05 | 763.3 | 30.65 | 778.5 | 21.2 | — 6.0 | 56 | SSE | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.87 | 758.6 | 30.08 | 763.9 | 37.2 | 2.9 | 54 | ENE | 34 | 15 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Bright S. corona | Meteorological Obs. |
| Archangel | 30.20 | 767.0 | 30.22 | 767.5 | 29.5 | — 1.4 | 82 | SSW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.28 | 718.4 | 29.70 | 754.4 | 49.6 | 9.8 | 84 | NE | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.08 | 764.1 | 30.00 | 762.0 | 35.2 | 1.8 | 70 | ENE | 25 | 11 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Capt. Wisganow. |
| Krotkowo* | 30.13 | 765.2 | 30.64 | 778.2 | 25.5 | — 3.6 | 45 | NE | 4 | 2 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 30.35 | 771.0 | 30.64 | 778.3 | 30.2 | — 1.0 | 37 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.43 | 747.5 | 30.43 | 773.0 | 38.1 | 3.4 | 38 | NNW | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.66 | 753.4 | 29.89 | 759.2 | 62.6 | 17.0 | 35 | NE | 18 | 8 | ..... | ..... | 8cs | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.47 | 723.0 | 30.13 | 765.4 | 66.2 | 19.0 | 47 | Calm | 0 | 0 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.54 | 750.3 | 30.08 | 764.0 | 14.0 | —10.0 | 66 | W | 2 | 1 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.60 | 751.8 | 29.91 | 759.6 | 19.0 | — 7.2 | 80 | SW | 16 | 7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 29.67 | 753.5 | 29.81 | 757.1 | 46.2 | 7.9 | 64 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.90 | 759.4 | 30.00 | 761.9 | 37.6 | 3.1 | 88 | N | 22 | 10 | ..... | ..... | 6c | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | 29.65 | 753.2 | 29.74 | 755.4 | 7.9 | —13.4 | 84 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount— and generally the kind of cloudiness— without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.83 | 757.7 | 29.94 | 760.4 | 60.8 | 15.7 | 67 | SSE | 3.6 | 1.61 | ..... | ..... | 3k | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 29.66 | 753.4 | 29.72 | 754.8 | 62.6 | 17.0 | 72 | SE | 2.5 | 1.13 | ..... | 0 | 10 | ..... | ..... | 0 | 0 | Covered | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.81 | 681.0 | ..... | ..... | 59.4 | 15.2 | 66 | S | 9.9 | 4.43 | ..... | 1 | 3 | N | ..... | 0.020 | 0.5 | Cloudy | Domingo Martin y Perez |
| Madrid, Royal Observatory | 27.62 | 701.4 | ..... | ..... | 61.7 | 16.5 | 58 | S | 17.9 | 8.00 | ..... | 1 | 7 | S | ..... | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.77 | 756.1 | 29.92 | 759.9 | 70.2 | 21.2 | 66 | NE | 2.3 | 1.03 | ..... | 5 | 5 | E | ..... | 0 | 0 | Covered | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.79 | 731.3 | 29.71 | 754.7 | 44.4 | 6.9 | 92 | N | 12.5 | 5.6 | ..... | 0 | 10 | ..... | ..... | 0.220 | 5.6 | Raining | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.91 | 759.6 | 29.97 | 761.3 | 77.2 | 25.1 | 69 | NNW | 9.4 | 4.2 | ..... | 0 | 1k | ..... | NNW | 0 | 0 | Clear | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.79 | 756.8 | 29.84 | 758.1 | 84.9 | 29.5 | 72 | ESE | 5.6 | 2.5 | ..... | ..... | 1cs | ..... | ..... | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.88 | 759.0 | 29.98 | 761.5 | 61.3 | 16.3 | 69 | S | 6.8 | 3.0 | ..... | 4 | 4 | SSW | SW | 0.111 | 2.8 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I | 29.85 | 758.1 | 29.94 | 760.4 | 81.0 | 27.2 | 82 | SE | 2.6 | 1.17 | ..... | 2s | 2k | SE | SE | 0.020 | 0.50 | Clear | Leonardo de Tejeda, Ch'f Eng'r. |

Note.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.08 | 764.0 | 30.12 | 765.0 | 24.8 | — 4.0 | ..... | S | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.06 | 763.5 | 30.11 | 764.8 | 27.7 | — 2.4 | 87 | SW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.97 | 761.3 | 30.02 | 762.6 | 29.8 | — 1.2 | 88 | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.87 | 758.6 | 30.04 | 763.1 | 36.3 | 2.4 | 84 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.93 | 760.2 | 29.99 | 761.7 | 37.4 | 3.0 | 87 | SSE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.016 | 0.4 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.96 | 761.0 | 30.04 | 762.9 | 35.2 | 1.8 | 84 | SE | 8.7 | 3.9 | ..... | ..... | 10 | ..... | ..... | 0.001 | 0.03 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.48 | 723.4 | 29.00 | 759.4 | 56.1 | 13.4 | 67 | NNW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0.075 | 1.9 | Vapory | The Observatory. |
| Zurich | 28.30 | 718.7 | 29.91 | 759.7 | 61.5 | 16.4 | 58 | W | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —0.8 mm.; Thermometer, +3.6 Cent.; Relative Humidity, +9 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.07 | 763.7 | 42.4 | 5.8 | 84 | N | 13 | 6.0 | ..... | ..... | 10 | ..... | N | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.09 | 764.3 | 73.4 | 23.0 | ..... | SE | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 30.17 | 766.3 | 61.3 | 16.3 | ..... | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.67 | 753.6 | 29.78 | 756.5 | 64.9 | 18.3 | 83 | SW | ..... | ..... | 4 | ..... | 9n | ..... | SW | ..... | ..... | Raining | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.42 | 747.2 | 29.49 | 749.0 | 34.1 | 1.2 | 96 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Foggy | Hon. J. Ferguson. |
| Brockville, Ontario | 29.46 | 748.3 | 29.78 | 756.4 | 20 | — 6.7 | ..... | N | 1 | 0.4 | ..... | 2c | 2s | N | W | 0.03 | 0.8 | Clear | W. R. Bigg. |
| *Chatham, N. B | 29.39 | 746.5 | 29.46 | 748.3 | 36 | 2.2 | 93 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | NE | 0.49 | 12.4 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 29.41 | 747.0 | 29.45 | 748.0 | 38 | 3.3 | 96 | E | 3 | 1.3 | ..... | ..... | 10n | ..... | ..... | 0.005 | 0.13 | Threatening | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.47 | 748.5 | 29.68 | 753.9 | 16.5 | — 8.6 | 85 | NW | ..... | ..... | 1 | 0 | 8s? | ..... | ..... | 0.20 | 5.1 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 29.93 | 760.2 | 29.98 | 761.5 | 39.1 | 3.9 | 100 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | Clear | W. H. Revis. |
| *Father Point, Quebec | 29.44 | 747.8 | 29.46 | 748.3 | 34 | 1.1 | 90 | SW | 18 | 8.0 | ..... | 8k | 2s | SW | SW | 0.02 | 0.5 | Cloudy | J. McWilliams. |
| Fredericton, N. B | 29.43 | 747.6 | 29.49 | 749.0 | 37.7 | 3.2 | 85 | NW | 1 | 0.4 | ..... | ..... | 10n | ..... | ..... | 0.80 | 20.3 | Misty | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.21 | 741.9 | 30.07 | 763.8 | 31 | — 0.6 | 95 | N | 20 | 8.9 | ..... | 2c | 5ks | N | N | 0 | 0 | Fair | James Stewart. |
| Granton, Ontario | 28.74 | 730.0 | 29.90 | 759.4 | 25 | — 3.9 | ..... | N | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Inap. | Inap. | Clear | James Grant. |
| *Halifax, N. S | 29.28 | 743.7 | 29.42 | 747.2 | 38 | 3.3 | 99 | E | 4 | 1.8 | ..... | 2 | 0 | 0 | ..... | 0.200 | 5.08 | Foggy | F. Allison, M. A. |
| Hamilton, Ontario | 29.48 | 748.8 | 29.86 | 758.4 | 27.7 | — 2.4 | 74 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.44 | 747.8 | 29.79 | 756.7 | 20 | — 6.7 | 90 | NW | 10 | 4.5 | ..... | 8k | 0 | NW | ..... | 0.01 | 0.3 | Fair | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.51 | 749.5 | 29.72 | 754.9 | 32.6 | 0.3 | 96 | S | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Foggy | C. H. Rigby. |
| Moose Factory, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. R. Nason. |
| *Montreal, Quebec | 29.42 | 747.2 | 29.68 | 752.6 | 19 | — 7.2 | 75 | W | 12 | 5.4 | ..... | 8c | 2s | ..... | ..... | 0.25 | 6.3 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.15 | 740.4 | 29.88 | 758.9 | 18 | — 7.8 | 63 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.18 | 730.9 | 29.85 | 758.2 | 27 | — 2.8 | 88 | NW | 11 | 4.9 | ..... | 8k | 0 | NW | ..... | Inap. | Inap. | Fair | H. Morgan. |
| Port Hastings, N. S | 29.46 | 748.3 | 29.51 | 749.5 | 32.4 | 0.2 | ..... | E | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.50 | 12.7 | Foggy | Peter Grant. |
| Port Stanley, Ontario | 29.20 | 741.7 | 29.87 | 758.7 | 29 | — 1.7 | 76 | W | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | M. Payne. |
| *Quebec, Quebec | 29.22 | 742.2 | 29.55 | 750.6 | 28 | — 2.2 | 94 | NW | ..... | ..... | 1 | ..... | 10n | ..... | NW | 0.35 | 8.9 | Cloudy | Capt. Ashe, R. N |
| *Rockliffe, Ontario | 29.31 | 744.5 | 29.80 | 756.9 | 17 | — 8.3 | 73 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | W. H. McIntyre. |
| St. Andrews, N. B | 29.39 | 746.5 | 29.44 | 747.8 | 37 | 2.8 | 95 | NE | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.02 | 0.5 | Cloudy | Dr. Gove. |
| St. John, N. B | 29.28 | 743.7 | 29.45 | 748.0 | 38 | 3.3 | 100 | N | 5 | 2.2 | ..... | ..... | 10;fog | ..... | ..... | 0.51 | 13.0 | Light fog | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.15 | 740.4 | 29.90 | 759.4 | 23 | — 5.0 | 88 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | K. Stewart. |
| Stayner, Ontario | 29.04 | 737.6 | 29.86 | 758.4 | 23 | — 5.0 | 81 | N | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. J. Cole. |
| Stratford, Ontario | 28.52 | 724.4 | 29.87 | 758.7 | 22.4 | — 5.3 | 86 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | Clear | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.51 | 749.5 | 29.55 | 750.6 | 36 | 2.2 | 94 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.01 | 0.3 | Foggy | T. C. Hill. |
| *Toronto, Ontario | 29.45 | 748.0 | 29.85 | 758.2 | 25 | — 3.9 | 76 | N | 17 | 7.6 | ..... | 0 | *0 | ..... | ..... | 0 | 0 | Clear | Magnetic Observatory |
| Windsor, N. S | 29.33 | 745.0 | 29.42 | 747.2 | 38.0 | 3.3 | 95 | NE | 1 | 0.4 | ..... | ..... | 10n | ..... | ..... | 0.27 | 6.9 | Misty | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 38.0 | 3.3 | 100 | E | ..... | ..... | ..... | Fog | Fog | ..... | ..... | 0.73 | 18.5 | Foggy | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Cloud. Amount. Upper. 0—10. | Cloud. Amount. Lower. 0—10. | Cloud. Direction. Upper. From— | Cloud. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.33 | 745.0 | 29.56 | 750.8 | 28 | — 2.2 | 77 | NW | 24 | 10.7 | | | 10s | | NW | 0.01 | 0.3 | Cloudy. | |
| Alpena, Michigan | 29.27 | 743.4 | 29.95 | 760.7 | 25 | — 3.9 | 75 | NW | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Atlanta, Georgia | 28.76 | 730.5 | 29.93 | 760.2 | 41 | 5.0 | 48 | NW | 19 | 8.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 29.37 | 746.0 | 29.38 | 746.2 | 34 | 1.1 | 79 | NW | 25 | 11.2 | | | 10s | | N | 0 | 0 | Cloudy | |
| Augusta, Georgia | 29.69 | 754.1 | 29.87 | 758.7 | 47 | 8.3 | 48 | NW | 7 | 3.1 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Baltimore, Maryland | 29.50 | 749.3 | 29.55 | 750.6 | 38 | 3.3 | 45 | NW | 20 | 8.9 | | 5k | 0 | NW | | 0 | 0 | Fair | |
| Barnegat, New Jersey | 29.32 | 744.7 | 29.35 | 745.5 | 35 | 1.7 | 61 | N | 38 | 17.0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Bismarck, Dakota | 28.18 | 715.8 | 30.04 | 763.0 | 35 | 1.7 | 90 | NW | 18 | 8.0 | | 2k | 2s | NW | NW | 0 | 0 | Fair | |
| Boerne, Texas | 28.43 | 722.0 | 29.69 | 754.1 | 69 | 20.6 | 65 | SW | 4 | 1.8 | | 2k | 0 | SW | | 0 | 0 | Clear | |
| Boise City, Idaho | 27.00 | 685.8 | 29.96 | 761.0 | 46 | 7.8 | 77 | SE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Boston, Massachusetts | 29.23 | 742.4 | 29.38 | 746.2 | 35 | 1.7 | 70 | N | 18 | 8.0 | | | 10s | | NE | 0.03 | 0.8 | Cloudy | |
| Brackettville, Texas | 28.71 | 729.2 | 29.70 | 754.4 | 70 | 21.1 | 60 | NE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.89 | 733.8 | 29.90 | 759.4 | 38 | 3.3 | 100 | N | 3 | 1.3 | | | 10ks | | NW | 0.09 | 2.3 | Cloudy | |
| Brownsville, Texas | 29.84 | 757.9 | 29.89 | 759.2 | 75 | 23.9 | 81 | SE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Buffalo, New York | 29.08 | 738.6 | 29.80 | 756.9 | 27 | — 2.8 | 70 | NW | 6 | 2.7 | | 2k | 0 | NW | | Inap. | Inap. | Fair | |
| Burkes, Arizona | | | | | 76 | 24 4 | 34 | S | | | 1 | | 10s | | Calm | 0.22 | 5.6 | Cloudy. | |
| Burlington, Vermont | 29.31 | 744.5 | 29.61 | 752.1 | 22 | — 5.6 | 66 | N | 15 | 6.7 | | | 10s | | NW | 0.12 | 3.0 | Cloudy | |
| Cairo, Illinois | 29.68 | 753.9 | 30.07 | 763.8 | 49 | 9.4 | 71 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Camp Apache, Arizona | | | | | | | | | | | | | | | | | | | |
| Camp Grant, Arizona | 25.10 | 637.5 | 29.90 | 759.4 | 55 | 12.8 | 73 | NE | 12 | 5.4 | | | 10s | | NE | 0.17 | 4.3 | Cloudy | |
| Camp Verde, Arizona | | | | | 50 | 10.0 | 65 | NW | | | 2 | | 10ks | | Calm | 0 | 0 | Cloudy. | |
| Campo, California | 27.28 | 692.9 | 29.84 | 757.9 | 47 | 8.3 | 85 | Calm | 0 | 0 | | 10cs | 0 | Calm | | 0 | 0 | Cloudy | |
| Cape Hatteras, N. Carolina | 29.46 | 748.3 | 29.49 | 749.0 | 40 | 4.4 | 56 | N | 35 | 15.6 | | | 10s | | NW | 7.75 | 196.9 | Cloudy | |
| Cape Henry, Virginia | 29.48 | 748.8 | 29.49 | 749.0 | 39 | 3.9 | 64 | NW | 64 | 28.6 | | | 10ks | | NW | 1.10 | 27.9 | Cloudy | |
| Cape Lookout, N. Carolina | 29.57 | 751.1 | 29.55 | 751.3 | 41 | 5.0 | 49 | NW | 48 | 21.5 | | 5k | 0 | NW | | 1.49 | 37.8 | Fair | |
| Cape May, New Jersey | 29.33 | 745.0 | 29.36 | 745.7 | 36 | 2.2 | 70 | NW | 54 | 24.1 | | | 10s | | NW | 0 | 0 | Cloudy | |
| Castroville, Texas | | | | | | | | | | | | | | | | | | | |
| Charleston, South Carolina | 29.74 | 755.4 | 29.80 | 756.9 | 49 | 9.4 | 44 | NW | 14 | 6.3 | | 0 | 0 | | | 0.14 | 3.6 | Clear | |
| Cheyenne, Wyoming | 24.01 | 609.8 | 29.95 | 760.7 | 40 | 4.4 | 73 | N | 18 | 8.0 | | 0 | 8s | | N | 0 | 0 | Cloudy | |
| Chicago, Illinois | 29.30 | 744.2 | 30.01 | 762.2 | 36 | 2.2 | 71 | NE | 2 | 0.9 | | 10cs | 0 | Calm | | 0 | 0 | Cloudy | |
| Cincinnati, Ohio | 29.33 | 745.0 | 30.01 | 762.2 | 33 | 0.6 | 65 | NW | 8 | 3.6 | | 0 | 0 | | | 0.01 | 0.3 | Clear | |
| Cleveland, Ohio | 29.17 | 740.9 | 29.92 | 760.0 | 31 | — 0.6 | 79 | NW | 14 | 6.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Coleman City, Texas | 28.13 | 714.5 | 29.76 | 755.9 | 61 | 16.1 | 66 | Calm | 0 | 0 | | 8ck | 0 | W | | 0 | 0 | Fair | |
| Columbus, Ohio | 29.07 | 738.4 | 29.94 | 760.5 | 32 | 0.0 | 69 | N | 8 | 3.6 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Concho, Texas | 27.90 | 708.6 | 29.52 | 749.8 | 65 | 18.3 | 84 | SW | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Corsicana, Texas | 29.37 | 746.0 | 29.53 | 757.7 | 61 | 16.1 | 77 | E | 2 | 0.9 | | 1c | 0 | N | | 0 | 0 | Clear | |
| Davenport, Iowa | 29.35 | 745.5 | 30.00 | 762.0 | 42 | 5.6 | 74 | NE | 3 | 1.3 | | | 10s | | NE | 0 | 0 | Cloudy | |
| Deadwood, Dakota | 25.45 | 646.4 | | | 34 | 1.1 | 100 | N | 8 | 3.6 | | | 10n | | Calm | 0.15 | 3.8 | Light rain | |
| Decatur, Texas | | | | | | | | | | | | | | | | | | | |
| Denison, Texas | 29.04 | 737.6 | 29.81 | 757.2 | 62 | 16.7 | 32 | SE | 10 | 4.5 | | 5cs | 0 | Calm | | 0 | 0 | Fair | |
| Denver, Colorado | 24.74 | 628.4 | 29.96 | 761.0 | 51 | 10.6 | 46 | NW | 20 | 8.9 | | | 10s | | NW | 0 | 0 | Cloudy | |
| Des Moines, Iowa | 29.01 | 736.8 | 29.89 | 759.2 | 44 | 6.7 | 84 | Calm | 0 | 0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Detroit, Michigan | 29.24 | 742.7 | 29.94 | 760.5 | 27 | — 2.8 | 76 | N | 6 | 2.7 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Dodge City, Kansas | 27.14 | 689.3 | 29.37 | 746.0 | 50 | 10.0 | 32 | S | 8 | 3.6 | | 5ck | 2s | SW | SW | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.28 | 743.7 | 29.99 | 761.7 | 37 | 2.8 | 81 | N | 1 | 0.4 | | | 10s;fg | | Calm | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 29.18 | 741.2 | 29.88 | 758.9 | 36 | 2.2 | 90 | W | 1 | 0.4 | | | 10n | | Calm | 0.01 | 0.3 | Light rain | |
| Eagle Pass, Texas | 29.04 | 737.6 | 29.76 | 755.9 | 66 | 18.9 | 84 | SE | 3 | 1.3 | | 2cs | 0 | Calm | | 0 | 0 | Fair | |
| Eastport, Maine | 29.35 | 745.5 | 29.42 | 747.2 | 36 | 2.2 | 100 | N | 7 | 3.1 | | | Fog | | | 0.06 | 1.5 | Foggy | |
| Edinburg, Texas | | | | | 72 | 22.2 | 90 | S | | | 1 | 0 | 8s | | S | 0 | 0 | Fair | |
| El Paso, Texas | 26.11 | 663.2 | | | 59 | 15.0 | 64 | W | 8 | 3.6 | | 0 | 5ks | | SW | 0 | 0 | Fair | |
| Erie, Pennsylvania | 29.12 | 739.6 | 29.85 | 758.2 | 31 | — 0.6 | 79 | N | 3 | 1.3 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Escanaba, Michigan | 29.31 | 744.5 | 29.99 | 761.7 | 26 | — 3.3 | 63 | Calm | 0 | 0 | | 5c | 0 | NW | | 0 | 0 | Fair | |
| Florence, Arizona | 28.40 | 721.3 | 30.00 | 762.0 | 63 | 17.2 | 78 | SW | 1 | 0.4 | | | 10n | | Calm | 0.13 | 3.3 | Light rain | |
| Fort Buford, Dakota | 28.12 | 714.2 | | | 45 | 7.2 | 84 | NW | 21 | 9.4 | | | 10s | | NW | 0 | 0 | Cloudy | |
| Fort Craig, New Mexico | 25.44 | 646.2 | 29.51 | 749.5 | 45 | 7.2 | 24 | SW | 8 | 3.6 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Fort Davis, Texas | 25.11 | 637.8 | 30.07 | 763.8 | 57 | 13.9 | 57 | SW | 2 | 0.9 | | 2k | 0 | W | | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.31 | 744.5 | 29.84 | 757.9 | 59 | 15.0 | 18 | SE | 12 | 5.4 | | | 10s | | S | 0 | 0 | Cloudy | |
| Fort Griffin, Texas | 28.49 | 723.6 | 29.72 | 754.9 | 61 | 16.1 | 66 | SE | 4 | 1.8 | | 2c | 0 | W | | 0 | 0 | Fair | |
| Fort Keogh, Montana | 27.62 | 701.5 | | | 37 | 2.8 | 90 | Calm | 0 | 0 | | 5c | 0 | Calm | | 0 | 0 | Fair | |
| Fort McKavett, Texas | 27.57 | 700.3 | 29.41 | 747.0 | 67 | 19.4 | 69 | S | 12 | 5.4 | | 2ck | 2s | Calm | Calm | 0 | 0 | Fair | |
| Fort St. Michael, Alaska | | | | | | | | | | | | | | | | | | | |
| Fort Sill, Indian Territory | 28.58 | 725.9 | 29.66 | 753.4 | 57 | 13.9 | 47 | N | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Stevenson, Dakota | 27.32 | 719.3 | | | 33 | 0.6 | 79 | NW | 14 | 6.3 | | 0 | 5s | | NW | 0.01 | 0.3 | Fair | |
| Fredericksburg, Texas | 28.11 | 714.0 | 29.61 | 752.1 | 70 | 21.1 | 66 | S | 2 | 0.9 | | 0 | 2ks | | Calm | 0 | 0 | Fair | |
| Galveston, Texas | 29.88 | 758.9 | 29.92 | 760.0 | 69 | 20.6 | 100 | S | 10 | 4.5 | | | Fog | | S | 0 | 0 | Foggy | |
| Graham, Texas | 28.69 | 728.7 | 29.71 | 754.6 | 60 | 15.6 | 55 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.33 | 745.0 | 30.00 | 762.0 | 31 | — 0.6 | 58 | NE | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.20 | 741.7 | 30.01 | 762.2 | 34 | 1.1 | 52 | NW | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Indianola, Texas | 29.89 | 759.2 | 29.92 | 760.0 | 71 | 21.7 | 90 | SW | 9 | 4.0 | | 1c | 0 | Calm | | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.61 | 726.7 | 29.67 | 753.6 | 75 | 23.9 | 40 | SE | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.88 | 758.9 | 29.91 | 759.7 | 57 | 13.9 | 41 | NW | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.27 | 743.4 | 29.89 | 759.2 | 42 | 5.6 | 74 | E | 4 | 1.8 | | 2k | 8s | NW | NW | 0 | 0 | Cloudy | |
| Key West, Florida | 29.93 | 760.2 | 29.96 | 761.0 | 73 | 22.8 | 63 | NW | 15 | 6.7 | | 0 | Haze | | Calm | 0.15 | 3.8 | Clear | |
| Kittyhawk, North Carolina | 29.44 | 747.8 | 29.46 | 748.3 | 38 | 3.3 | 54 | N | 42 | 18.8 | | | 10s | | N | 3.97 | 100.8 | Cloudy | |
| Knoxville, Tennessee | 28.98 | 736.1 | 30.02 | 762.5 | 36 | 2.2 | 53 | NW | 6 | 2.7 | | 0 | 0 | | | 0.07 | 1.8 | Clear | |
| La Crosse, Wisconsin | 29.20 | 741.7 | 29.94 | 760.5 | 39 | 3.9 | 73 | SW | 1 | 0.4 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 25.95 | 659.1 | 30.10 | 764.5 | 58 | 14.4 | 70 | Calm | 0 | 0 | | | 10ks | | W | 0 | 0 | Cloudy | |
| Laredo, Texas | 29.41 | 747.0 | 29.74 | 755.4 | 72 | 22.2 | 77 | SE | 4 | 1.8 | | 10ck | 0 | W | | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 28.99 | 736.3 | 29.82 | 757.4 | 50 | 10.0 | 45 | S | 3 | 1.3 | | | 10s | | | 0 | 0 | Cloudy | |
| Los Angeles, California | 29.47 | 748.5 | 29.81 | 757.2 | 57.2 | 14.0 | 90 | Calm | 0 | 0 | | | Fog | | Calm | 0 | 0 | Foggy | |
| Louisville, Kentucky | 29.45 | 748.0 | 30.02 | 762.5 | 38 | 3.3 | 45 | NW | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Lynchburg, Virginia | 28.98 | 736.1 | 29.66 | 753.4 | 41 | 5.0 | 41 | NW | 12 | 5.4 | | 0 | 0 | | | 0.11 | 2.8 | Clear | |
| Madison, Wisconsin | 28.96 | 735.6 | 29.97 | 761.2 | 36 | 2.2 | 71 | S | 8 | 3.6 | | | 10s | | NW | 0 | 0 | Cloudy | |
| Marquette, Michigan | 29.22 | 742.2 | 29.94 | 760.5 | 28 | — 2.2 | 66 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Mason, Texas | 28.22 | 716.8 | 29.92 | 760.0 | 68 | 20.0 | 69 | S | 7 | 3.1 | | 1cs | 0 | SW | | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.74 | 755.4 | 30.06 | 763.5 | 51 | 10.6 | 59 | E | 6 | 2.7 | | 2c | Sm'e | Calm | Calm | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.24 | 742.7 | 29.99 | 761.7 | 33 | 0.6 | 79 | N | 3 | 1.3 | | 5ck | 1s | NW | Calm | 0 | 0 | Fair | |
| Mobile, Alabama | 30.01 | 762.2 | 30.06 | 763.5 | 56 | 13.3 | 57 | N | 4 | 1.8 | | 0 | Haze | | | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.81 | 757.2 | 30.05 | 763.3 | 50 | 10.0 | 38 | N | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.75 | 730.2 | 29.83 | 757.7 | 32 | 0.0 | 79 | NW | 16 | 7.2 | | 0 | 5ks | | NW | 0.06 | 1.5 | Fair | |
| Mt. Washington, N. H. | 23.15 | 588.0 | 29.51 | 749.5 | 25 | — 3.9 | 88 | NE | 5 | 2.2 | | | 10ks | | NE | 0.23 | 5.8 | Cloudy | |
| Nashville, Tennessee | 29.52 | 749.8 | 30.06 | 763.5 | 42 | 5.6 | 74 | W | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| New Haven, Connecticut | 29.25 | 742.9 | 29.36 | 745.7 | 33 | 0.6 | 61 | N | 24 | 10.7 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| New London, Connecticut | 29.30 | 744.2 | 29.34 | 745.2 | 36 | 2.2 | 71 | N | 15 | 6.7 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| New Orleans, Louisiana | 29.95 | 760.7 | 30.01 | 762.2 | 62 | 16.7 | 51 | NE | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.21 | 741.9 | 29.26 | 743.2 | 37 | 2.8 | 71 | NW | 21 | 9.4 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| New York, New York | 29.22 | 742.2 | 29.39 | 746.5 | 34 | 1.1 | 61 | NW | 28 | 10.3 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 29.47 | 748.5 | 29.53 | 750.0 | 38 | 3.3 | 63 | NW | 28 | 12.5 | | | 10s | | NW | 1.06 | 26.9 | Cloudy | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r —10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 26.92 | 683.8 | 29.44 | 747.8 | 49 | 9.4 | 51 | NE | 16 | 7.2 | ... ... | 8cs | 2s | NW | Calm | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 29.91 | 759.7 | 29.95 | 760.7 | 40.1 | 4.5 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Omaha, Nebraska | 28.67 | 728.2 | 29.76 | 755.9 | 47 | 8.3 | 55 | SE | 6 | 2.7 | ... ... | 5c | 5s | NW | Calm | 0 | 0 | Cloudy | |
| Oswego, New York | 29.41 | 747.0 | 29.74 | 755.4 | 24 | — 4.4 | 74 | E | 14 | 6.3 | ... ... | ..... | 10s | ..... | N | 0.07 | 1.8 | Cloudy | |
| Pembina, Dakota | 29.10 | 739.1 | 29.96 | 761.0 | 33 | 0.6 | 100 | NW | 20 | 8.9 | ..... | ..... | 10n | ..... | NW | Inap. | Inap. | Light rain | |
| Philadelphia, Pa | 29.38 | 746.2 | 29.44 | 747.8 | 34 | 1.1 | 70 | NW | 36 | 16.1 | ..... | 8cs | 2ks | Calm | NW | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.72 | 729.5 | 30.48 | 774.2 | 63 | 17.2 | 33 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | S | 0.02 | 0.5 | Light rain | |
| Pike's Peak, Colorado | 17.79 | 451.9 | 30.00 | 762.0 | 25 | — 3.9 | 62 | NE | 24 | 10.7 | ..... | 2c | 8s | W | Calm | 0 | 0 | Cloudy | |
| Pioche, Nevada | 23.92 | 607.6 | 29.69 | 754.1 | 49 | 9.4 | 31 | S | 6 | 2.7 | .. ... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 29.00 | 736.6 | 29.82 | 757.4 | 32 | 0.0 | 69 | NW | 12 | 5.4 | ..... | 7k | 0 | NW | ..... | Inap. | Inap. | Fair | |
| Port Huron, Michigan | 29.21 | 741.9 | 29.89 | 759.2 | 31 | — 0.6 | 89 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Portland, Maine | 29.38 | 746.2 | 29.43 | 747.5 | 36 | 2.2 | 71 | N | 16 | 7.2 | ..... | 8k | 0 | Calm | ..... | 0.22 | 5.6 | Cloudy | |
| Portland, Oregon | 29.84 | 757.9 | 29.94 | 760.5 | 49.8 | 9.9 | 91 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Prescott, Arizona | 24.64 | 625.8 | 30.00 | 762.0 | 54 | 12.2 | 55 | W | 5 | 2.2 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Pilot Point, Texas | 29.17 | 740.9 | 29.98 | 761.5 | 64 | 17.8 | 83 | SE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 29.95 | 760.7 | 29.97 | 761.2 | 66 | 18.9 | 41 | N | 12 | 5.4 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Red Bluff, California | 29.38 | 746.2 | 29.78 | 756.1 | 56 | 13.3 | 81 | SW | 2 | 0.9 | ..... | 0 | 1ks | ..... | Calm | Inap. | Inap. | Clear | |
| Rio Grande City, Texas | 29.68 | 753.9 | 29.88 | 758.9 | 70 | 21.1 | 95 | SE | ..... | ..... | 1 | 5ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Rochester, New York | 29.13 | 739.9 | 29.77 | 756.1 | 25 | — 3.9 | 75 | NW | 14 | 6.3 | ..... | 5k | 6s | NW | Calm | 0.12 | 3.0 | Cloudy | |
| Roseburg, Oregon | 29.27 | 743.4 | 29.83 | 757.7 | 52.5 | 11.4 | 96 | NE | 1 | 0.4 | ..... | Haze | 1s | ..... | Calm | 0 | 0 | Fair | |
| Sacramento, California | 29.05 | 763.1 | 29.73 | 755.1 | 55 | 12.8 | 87 | SE | 4 | 1.8 | ..... | 0 | 2s | ..... | S | 0.01 | 0.3 | Fair | |
| St. Louis, Missouri | 29.43 | 747.5 | 30.01 | 762.2 | 46 | 7.8 | 62 | S | 4 | 1.8 | ..... | 2k | 5s | W | W | 0 | 0 | Fair | |
| St. Marks, Florida | 29.98 | 761.5 | 29.99 | 761.7 | 55 | 12.8 | 39 | N | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.03 | 737.3 | 29.87 | 758.7 | 38 | 3.3 | 81 | E | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.03 | 0.8 | Light rain | |
| Salt Lake City, Utah | 25.45 | 646.4 | 29.78 | 756.4 | 62 | 16.7 | 18 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| San Antonio, Texas | 29.18 | 741.2 | 29.75 | 755.6 | 64 | 17.8 | 78 | Calm | 0 | 0 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.77 | 756.1 | 29.84 | 757.9 | 65.5 | 18.1 | 93 | E | 2 | 0.9 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Sandusky, Ohio | 29.26 | 743.2 | 29.96 | 761.0 | 30 | — 1.1 | 68 | N | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandy Hook, New Jersey | 29.33 | 745.0 | 29.36 | 745.7 | 34 | 1.1 | 70 | N | 44 | 19.7 | ..... | 10cs | 0 | N | ..... | 0 | 0 | Cloudy | |
| San Francisco, California | 29.70 | 754.4 | 29.76 | 755.9 | 54 | 12.2 | 85 | N | 1 | 0.4 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| Santa Fé, New Mexico | 23.17 | 588.5 | 29.71 | 754.6 | 47 | 8.3 | 28 | E | 7 | 3.1 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.76 | 755.9 | 29.86 | 758.4 | 51 | 10.6 | 40 | NW | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap | Clear | |
| Shreveport, Louisiana | 29.73 | 755.1 | 29.95 | 760.7 | 62 | 16.7 | 41 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Silver City, New Mexico | 24.22 | 615.2 | 30.33 | 770.4 | 50 | 10.0 | 86 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Threatening | |
| Smithville, North Carolina | 29.66 | 753.4 | 29.70 | 754.4 | 44 | 6.7 | 52 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.88 | 22.4 | Clear | |
| Springfield, Massachusetts | 29.31 | 744.5 | 29.44 | 747.8 | 35 | 1.7 | 61 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 0 | 0 | Threatening | |
| Stockton, Texas | 29.63 | 681.5 | 29.83 | 757.7 | 65 | 18.3 | 63 | S | 5 | 2.2 | ..... | 5k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Thatcher's Island, Mass. | 29.23 | 742.4 | 29.29 | 744.0 | 34 | 1.1 | 61 | NE | 26 | 11.6 | ..... | 0 | 8s | ..... | NE | Inap. | Inap. | Fair | |
| Toledo, Ohio | 29.24 | 742.7 | 29.95 | 760.7 | 32 | 0.0 | 60 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tucson, Arizona | 27.45 | 697.2 | 30.00 | 762.0 | 62 | 16.7 | 27 | W | 14 | 6.3 | ..... | ..... | 10n | ..... | SW | 0.41 | 10.4 | Light rain | |
| Umatilla, Oregon | 29.64 | 752.8 | 30.13 | 765.3 | 55.0 | 12.8 | 39 | N | 28 | 12.5 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Fair | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 33 | 0.6 | 89 | S | ..... | ..... | 1 | ..... | 10s | ..... | S | 0.13 | 3.3 | Cloudy | |
| Uvalde, Texas | 29.90 | 736.6 | 29.80 | 756.9 | 66 | 18.9 | 79 | S | 2 | 0.9 | ..... | 1ck | 0 | Calm | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.80 | 756.9 | 30.06 | 763.5 | 54 | 12.2 | 55 | SE | 5 | 2.2 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Clear | |
| Virginia City, Montana | 24.26 | 616.2 | 29.74 | 755.4 | 40 | 4.4 | 56 | NE | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Visalia, California | 29.39 | 746.5 | 29.75 | 755.6 | 58.7 | 14.8 | 84 | NW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Washington, D. C. | 29.46 | 748.3 | 29.57 | 751.1 | 37 | 2.8 | 45 | NW | 25 | 11.2 | ..... | 2k | 2ks | NW | NW | Inap. | Inap. | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 62 | 16.7 | 33 | S | ..... | ..... | 1 | ..... | 10n | ..... | W | 0.15 | 3.8 | Light rain | |
| Wilmington, N. Carolina | 29.58 | 751.3 | 29.66 | 753.4 | 43 | 6.1 | 43 | NW | 26 | 11.6 | ..... | 0 | 0 | ..... | ..... | 0.89 | 22.6 | Clear | |
| Winnemucca, Nevada | 25.48 | 647.2 | 29.84 | 757.9 | 53 | 11.7 | 36 | NE | 12 | 5.4 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Wood's Holl, Mass. | 29.19 | 741.4 | 29.22 | 742.2 | 38 | 3.3 | 80 | N | 32 | 14.3 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Threatening | |
| Yankton, Dakota | 28.56 | 725.4 | 29.83 | 757.7 | 49 | 9.4 | 64 | NW | 2 | 0.9 | ..... | ..... | 10n | ..... | NW | Inap. | Inap. | Light rain | |
| Yuma, Arizona | 29.62 | 752.3 | 29.78 | 756.4 | 68 | 20.0 | 79 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0.10 | 2.5 | Cloudy | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | J. B. Gordon. |
| Fayetteville, Ark. | 28.32 | 719.3 | 29.71 | 754.6 | 51 | 10.6 | 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Chas. Hasselbrink. |
| Havana, Cuba, W. I. | 29.92 | 760.0 | 29.97 | 761.2 | 77 | 25.0 | 65 | NW | 8.4 | 3.8 | ..... | 0 | 4ks | ..... | NW | 0 | 0 | Cloudy | James Gall. |
| Kingston, Jamaica, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Thomas Herran. |
| Medellin, Colombia, S. A. | 25.26 | 641.6 | ..... | ..... | 65.0 | 18.3 | 82 | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0.18 | 4.6 | ..... | W. H. W. Jones. |
| Navassa, W. I. | 29.89 | 759.2 | 29.97 | 761.2 | 78 | 25.6 | ..... | NW | 5 | 2.2 | ..... | 2cs | 2ks | ..... | ..... | 0 | 0 | Cloudy | O. J. Hering. |
| Paramaribo, D. Guiana, S. A | 30.02 | 762.5 | 30.02 | 762.5 | 80 | 26.7 | 87 | NE | ..... | ..... | 2 | 3c | 5k | NE | ..... | 0.480 | 10.92 | Fair | Robert Mason. |
| Santiago de Cuba, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| St. Thomas, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| York Factory, B. A. | 29.51 | 749.5 | 29.56 | 750.8 | 1.5 | —16.9 | 100 | SW | 15 | 6.7 | ..... | ..... | 10n | ..... | W | 0.10 | 2.5 | Snowing | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,181.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,338 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,623 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,916 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,385.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain or melted snow in the past 24 hours. Inches. | Rain or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.72 | 754.9 | 54 | 12.2 | 54 | 12.2 | 87 | SSW | 8 | 3.6 | .... | ..... | 2s | ..... | S | 0 | 0 | ..... | ..... | Fair | |
| Navy Yard, Pensacola, Fla. | 30.10 | 764.5 | 58 | 14.4 | 58 | 14.4 | 58 | N | 5 | 2.2 | ..... | 0 | ..... | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Navy Yard, Portsmouth, N.H | 29.45 | 748.0 | 52 | 11.1 | 35 | 1.7 | 70 | NNE | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Stormy | |
| Naval Hospital, Yokohama, Japan | *29.88‡ | 758.9‡ | ..... | ..... | 56.2 | 13.4 | 87 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Adams, Panama | *29.98 | 761.5 | 78 | 25.6 | 77 | 25.0 | 91 | NW | ..... | ..... | 2 | ..... | 8 | ..... | N;W | ..... | ..... | ..... | ..... | Fair | |
| Alaska, N. 50° 39′, W. 127° 15′ | 30.06‡ | 763.5‡ | ..... | ..... | 43 | 6.1 | 83 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Misty | |
| Alliance, N. 43° 07′, E. 10° 10′ | 30.11‡ | 764.8‡ | ..... | ..... | 63 | 17.2 | 62 | SSW | ..... | ..... | 0–1 | ..... | 5 | ..... | S | ..... | ..... | ..... | ..... | Pleasant | |
| Ashuelot, Hong-Kong, China | *29.90‡ | 759.4‡ | ..... | ..... | 72 | 22.2 | 90 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Misty | |
| Canonicus, New Orleans, La. | *30.02 | 762.5 | 46 | 7.8 | 60 | 15.6 | 100 | NW | ..... | .... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Colorado, New York, N. Y. | 29.36 | 745.7 | 35 | 1.7 | 34 | 1.1 | 100 | NW | 15 | 6.7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Hazy | |
| Constitution Lisbon, Portugal | 29.79‡ | 756.7‡ | ..... | ..... | 56 | 13.3 | 94 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Rainy | |
| Despatch, Genoa, Italy | 30.11‡ | 764.5‡ | ..... | ..... | 64 | 17.8 | 68 | S | ..... | ..... | 2 | ..... | 8 | ..... | SE | ..... | ..... | Smooth | ..... | Cloudy | |
| Franklin, Norfolk, Va. | *29.63 | 752.6 | 64 | 17.8 | 40 | 4.4 | 65 | NNW | 36 | 16.1 | ..... | ..... | 8 | ..... | N | 0.9 | 23. | ..... | ..... | Cloudy | |
| Gettysburg, Genoa, Italy | 30.04‡ | 763.0‡ | ..... | ..... | 62 | 16.7 | 83 | SE | ..... | ..... | 3 | ..... | 8 | ..... | S;E | 0 | 0 | ..... | ..... | Cloudy | |
| Hartford, Montevideo, Uruguay | *30.28 | 769.1 | 67 | 19.4 | 67 | 19.4 | 69 | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ENE | 0.16 | 4.1 | Smooth | ..... | Cloudy | |
| Lackawana, Callao, Peru | *29.69‡ | 754.1‡ | ..... | ..... | 67 | 19.4 | 95 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | ..... | Foggy | |
| Michigan, Erie, Pa. | †29.70 | 754.4 | ..... | ..... | 29 | — 1.7 | 86 | NNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Monocacy, Shanghai, China | *29.93‡ | 760.2‡ | ..... | ..... | 65 | 18.3 | 51 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Monongahela Yokohama, Japan | *29.83‡ | 757.7‡ | ..... | ..... | 58 | 14.4 | 88 | NW | ..... | ..... | 0–1 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds | |
| New Hampshire, Port Royal, S. C. | *29.85 | 758.2 | 51 | 10.6 | 50 | 10.0 | 52 | NW | 17 | 7.6 | ..... | ..... | 2 | ..... | NW | 0 | 0 | ..... | ..... | Clear | |
| Onward, Callao, Peru | †*30.02 | 762.5 | ..... | ..... | 68 | 20.0 | 90 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Foggy | |
| Palos, Tientsin, China | *29.80 | 756.9 | 42 | 5.6 | 42 | 5.6 | 66 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Passaic, Washington, D. C. | ..... | ..... | ..... | ..... | 36 | 2.2 | 46 | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Fair | |
| Pensacola, Valparaiso, Chili | 29.92‡ | 760.0‡ | ..... | ..... | 63 | 17.2 | 78 | SE | 1 | 0.4 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Misty | |
| Plymouth, N. 40° 14′, W. 70° 16′ | 29.19‡ | 741.4‡ | ..... | ..... | 38 | 3.3 | 90 | NE | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Heavy cross. | SW | Rainy | |
| Powhatan, Norfolk, Va. | 29.50‡ | 749.3‡ | ..... | ..... | 41 | 5.0 | 65 | WNW | ..... | ..... | 8 | ..... | 10 | ..... | NW | 0.75 | 19.1 | Cross. | NW | Raining | |
| Quinnebaug, Malaga, Spain | 29.91‡ | 759.7‡ | ..... | ..... | 69 | 20.6 | 70 | ESE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Ranger. Amoy, China | 29.88‡ | 758.9‡ | ..... | ..... | 68 | 20.0 | 84 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy | |
| Richmond. N. 13° 31′, E. 52° 57′ | 29.95‡ | 760.7‡ | ..... | ..... | 84 | 28.9 | 71 | ENE | ..... | ..... | 2 | ..... | 2 | ..... | ENE | 0 | 0 | Smooth | ..... | Fair | |
| Rio Bravo, Brownsville, Texas | 29.90 | 759.4 | 73 | 22.8 | 70 | 21.1 | 100 | SE | ..... | ..... | 1 | ..... | 2 | ..... | S | ..... | ..... | ..... | ..... | Fair | |
| Santee, Annapolis, Md. | 29.51‡ | 749.5‡ | ..... | ..... | 39 | 3.9 | 55 | NW | ..... | ..... | 6 | ..... | 8 | ..... | NW | 0 | 0 | ..... | ..... | Cloudy | |
| Saratoga, Hampton Roads, Va. | 29.53‡ | 750.0‡ | ..... | ..... | 39 | 3.9 | 73 | NW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | Heavy | Heavy | ..... | ..... | Squally | |
| St. Louis, League Island, Pa. | 29.37 | 746.0 | 59 | 15.0 | 34 | 1.1 | 100 | NW | 24 | 10.7 | ..... | ..... | 10 | ..... | N | 0 | 0 | ..... | ..... | Cloudy | |
| Supply, New York, N. Y. | 29.41‡ | 747.0‡ | ..... | ..... | 39 | 3.9 | 73 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy | |
| Trenton Genoa, Italy | *30.06‡ | 764.0‡ | ..... | ..... | 63 | 17.2 | 62 | S | ..... | ..... | 2 | ..... | 10 | ..... | SE | 0.01 | 0.3 | Smooth | ..... | Cloudy | |
| Tuscarora, Chipequa Bay, Mexico. | 29.94‡ | 760.5‡ | ..... | ..... | 79 | 26.1 | 74 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Long | SE | Clear | |
| Wabash, Boston, Mass. | 29.44‡ | 747.8‡ | ..... | ..... | 36 | 2.2 | 90 | W | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy | |
| Wyoming, Alexandria, Egypt | *29.98‡ | 761.5‡ | ..... | ..... | 64 | 17.8 | 89 | NW | ..... | ..... | 3–6 | ..... | 2 | ..... | NW | ..... | ..... | Mod'ate | ..... | Fair | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | |
| S. S. Colima, N. 18° 26′, W. 89° 47′..† | | 30.02‡ | 762.5‡ | 81 | 27.2 | | E | | | 2 | | 6 | | ESE | 0 | Mod'ate | SE | Misty | Capt. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, S. 5° 10′, W. 168° 00′ | | 29.82‡ | 757.4‡ | | | | NNE | | | 2 | | | | ENE | | Long; slow | NW | Fair | R. C. Ghest, 1st Officer |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic, N. 49° 38′, W. 27° 36′ | | 30.00 | 762.0 | 46 | 7.8 | | NW | | | 6 | | 1 | | NW | | High | NW | Squally | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. *The error of the barometer is not known.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, N. 41° 17′, E. 168° 03′ | | 29.89‡ | 759.2‡ | 39 | 3.9 | 72 | NW | | | 6 | | k | | NW | 0 | Mod'ate | NW | Misty | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, Hong-Kong, China †* | | 29.87‡ | 758.7‡ | 72 | 22.2 | 80 | Var. | | | 2 | | Fog | | | 0 | | | Foggy | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, N. 35° 49′, W. 166° 05′ | | 30.54‡ | 775.7‡ | 54 | 12.2 | 87 | SSW | | | 3 | | 8ks | | SW | | 2 | NW | D. clouds | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andreasen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 40° 59′, W. 69° 40′ | | 29.60‡ | 749.3‡ | | | | SSW | | | 5 | | 5 | | SW | | Long | SW | Cloudy | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 40° 08', W. 70° 27' | | 30.08‡ | 764.0‡ | 38 | 3.3 | | NNE | | | 8 | | 9 | | NNE | Heavy | Heavy | NE | Cloudy | Captain Sargent, Wm. Shackford, Chief Officer. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | |
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
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| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
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| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| **MARINE SERIES. Miscellaneous.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller, Hyannis Harbor, Mass. | | 29.20‡ | 741.7‡ | 38 | 3.3 | 100 | NNE | 32 | 14.3 | | | 10n | | N | | | | Threatening | Capt. James Jorgensen. |
| Brigantine "George," of Halifax, N. 38° 40', W. 70° 00' | | 28.93 | 734.8 | 40 | 4.4 | | N | | | 8 | | d | | | Rough | Rough | | Hailing | Willard N. Pratt. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower.

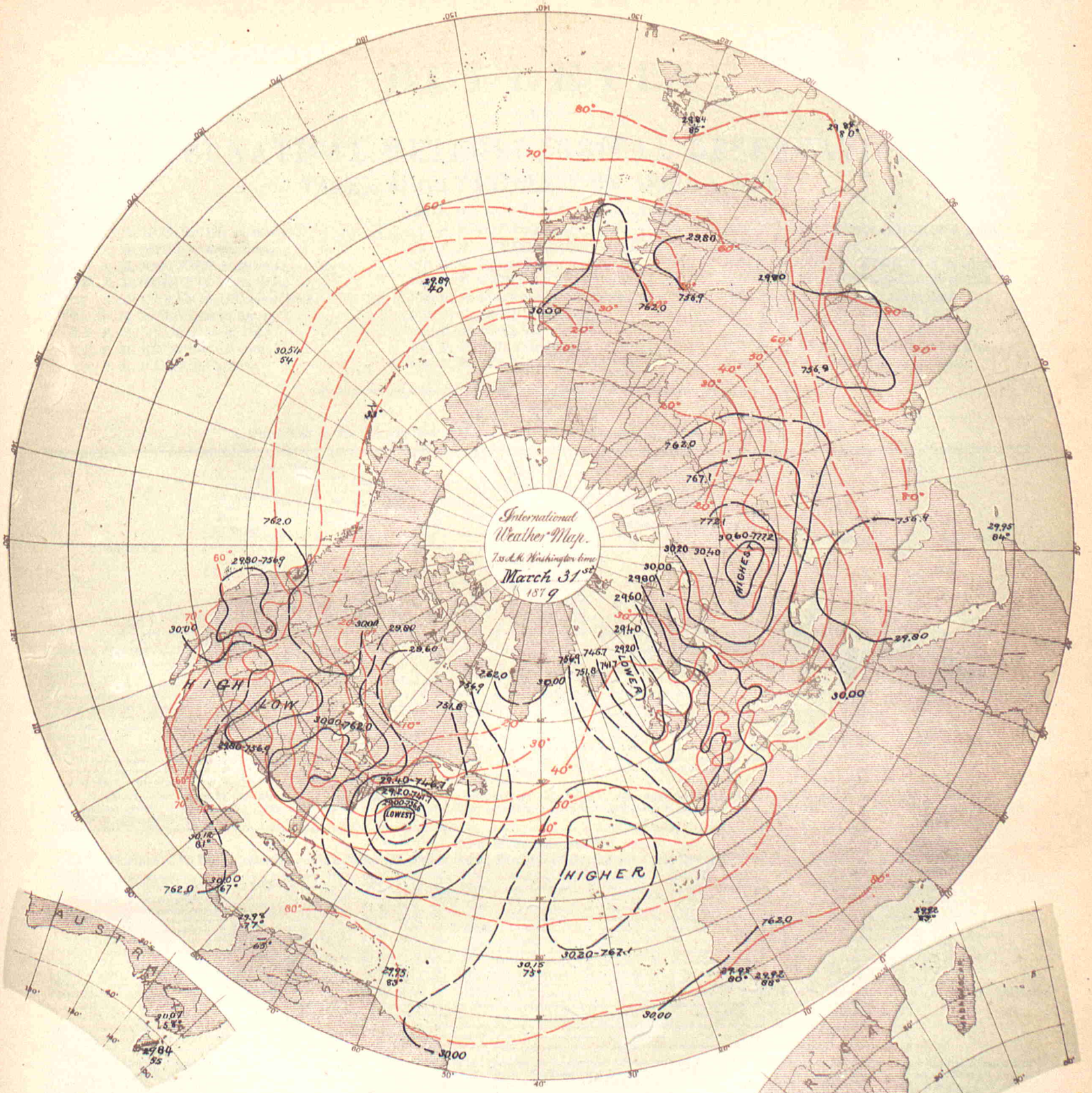
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.), Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIOAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 1, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
8:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time
1:26 P. M. CHRISTIANIA mean time.
1:38 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGEGIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 30.08 | 764.0 | 58.6 | 14.8 | 84 | Calm | | | 0 | | 10 | | | 0.512 | 13.0 | Covered | Kesxuche. |
| Algiers | | | 29.91 | 759.7 | 63.7 | 17.6 | 61 | WSW | | | 5 | | 10 | | | Inap. | Inap. | Covered | Tourillerg. |
| La Calle | | | 29.96 | 761.0 | 82.4 | 28.0 | 43 | NE | | | 1 | | 5 | | | 0 | 0 | Cloudy | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 30.03 | 762.7 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 30.02 | 762.6 | 59.0 | 15.0 | 41 | NNW | | | 1 | | 10 | | | 0.051 | 1.3 | Raining | Herbin. |
| Tebessa | | | 30.06 | 763.6 | 68.9 | 20.5 | 54 | S | | | 6 | | 2 | | | 0 | 0 | Fair | Watrin. |
| Geriville | | | 29.99 | 761.8 | 54.0 | 12.2 | 85 | SE | | | 6 | | 8 | | | 0 | 0 | Very cloudy | Brugnlaux. |
| Laghouat | | | 30.10 | 764.6 | 75.9 | 24.4 | 16 | S | | | 4 | | 2 | | | 0 | 0 | Fair | Bertrand. |
| Biskra | | | 30.01 | 762.3 | 80.8 | 27.1 | 73 | SE | | | 2 | | 5 | | | 0 | 0 | Cloudy | Chanvaux. |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.46 | 748.2 | 29.99 | 761.8 | 66.2 | 19.0 | 39 | W | | | 4 | | 3 | | | 0 | 0 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.21 | 741.9 | 29.96 | 761.1 | 63.0 | 17.2 | 52 | SW | | | 1 | | 1 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 29.16 | 740.7 | 30.03 | 762.8 | 58.3 | 14.6 | 58 | S | | | 3 | | 6cs;s | | N | 0 | 0 | | Julius Mikolik. |
| Gratz | 28.67 | 728.1 | 29.89 | 759.2 | 64.4 | 18.0 | 38 | SW | | | 4 | | 3 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.70 | 728.9 | 30.12 | 765.0 | 59.2 | 15.1 | 47 | SE | | | 2 | | 1 | | | 0 | 0 | | Prof. A. Gottschling. |
| Kremsmünster | 28.50 | 724.0 | 29.81 | 757.1 | 63.9 | 17.7 | 38 | ENE | | | 1 | | 2 | | | 0 | 0 | | Prof. C. Wagner. |
| Lemberg | 29.07 | 738.4 | 30.09 | 764.2 | 42.1 | 5.6 | 81 | S | | | 1 | | 6 | | | 0.012 | 0.3 | | Dr. T. Stanecki. |
| Pola | 29.99 | 761.8 | 30.11 | 764.7 | 62.1 | 16.7 | 70 | SSE | | | 2 | | 0 | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.69 | 754.1 | 30.15 | 765.8 | 60.1 | 15.6 | 53 | SE | | | 2 | | 1 | | | 0 | 0 | | Julius Csics, S. J. |
| Szegedin | 29.78 | 756.5 | 30.06 | 763.5 | 62.6 | 17.0 | 56 | S | | | 3 | | 4 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 30.00 | 761.9 | 30.10 | 764.5 | 60.8 | 16.0 | 53 | W | | | 1 | | 1 | | | 0 | 0 | Almost clear | P. Busin. |
| Vienna | 29.19 | 741.4 | 29.89 | 759.2 | 63.0 | 17.2 | 55 | ESE | | | 1 | | 2 | | | 0 | 0 | | I. R. Central Met. Obs'y |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 m., or 1,350.4 feet.; Kremsmünster, 383.6 m., or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. O. Houzeau, Director of the Royal Observatory at Brussels

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.48 | 748.8 | 29.68 | 753.9 | 54.1 | 12.3 | 79 | SW | | | 2 | | 10 | | SSW | 0.303 | 7.70 | | Royal Observatory. |
| Furnes | 29.71 | 754.5 | 29.78 | 755.1 | 47.3 | 8.5 | 88 | NNW | | | 2 | | 8 | | | 0.366 | 9.3 | | M. E. de Cae. |
| Maeseyck | 29.59 | 751.6 | 29.72 | 754.8 | 58.8 | 14.9 | 79 | S | | | 0 | | 9 | | | 0.087 | 2.2 | | M. Pierrot. |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0; instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m., Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.40 | 746.7 | 29.50 | 749 3 | 46.1 | 7.8 | ..... | NW | 12 | 5.4 | ..... | ..... | 5 | ..... | ..... | 0.050 | 1.27 | Blue sky..... | W. Boswell. |
| Ardrossan | 29.52 | 749.8 | 29.54 | 750.3 | 47 | 8.3 | ..... | WSW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.58 | 751.3 | 51.3 | 10.7 | ..... | SW | 9 | 4.0 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.62 | 752.3 | 48.5 | 9.2 | ..... | WNW | 13 | 5.8 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.60 | 751.8 | 49.9 | 9.9 | ..... | W | 18 | 8.0 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Thomas Mackereth. |
| Bradford, Yorkshire | 29.19 | 741.4 | 29.59 | 751.6 | 49.8 | 9.9 | ..... | W | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0.01 | 0.3 | D. clouds.... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.90 | 759.4 | 29.93 | 760.2 | 84 | 28.9 | ..... | E | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.66 | 753.4 | 52.0 | 11.1 | ..... | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. Todd. [C. |
| Cardington | ..... | ..... | 29.65 | 753.1 | 52.0 | 11.1 | ..... | SW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | John McLaren. |
| Chatham, School M. E. | 29.57 | 751.1 | 29.70 | 754.4 | 54.7 | 12.6 | ..... | SW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.10 | 713.7 | 29.58 | 751.3 | 44.0 | 6.7 | ..... | SW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 29.55 | 750.6 | 29.59 | 751.6 | 49 | 9.4 | ..... | SW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.66 | 753.4 | 29.68 | 753.9 | 46 | 7.8 | ..... | Calm | ..... | ..... | 0 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | J. Costello. |
| Falmouth, Observatory | 29.44 | 747.8 | 29.66 | 753.4 | 52.8 | 11.6 | ..... | SSW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.. | The Staff. |
| Fort Napier, (Natal) | 27.58 | 700.5 | 29.90 | 759.4 | 73.2 | 22.9 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.70 | 754.4 | 29.92 | 760.0 | 87 | 30.6 | ..... | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | 29.57 | 751.1 | 49 | 9.4 | ..... | WSW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.. | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.00 | 762.0 | 30.05 | 763.3 | 58.7 | 14.8 | ..... | W | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.34 | 745.2 | 29.55 | 750.6 | 46.2 | 7.9 | ..... | NW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. |
| Great Yarmouth | 29.66 | 753.4 | 29.67 | 753.6 | 45 | 7.2 | ..... | S | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | Misty..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.51 | 749.5 | 29.68 | 753.9 | 49.1 | 9.5 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast.... | The Staff, for G. B. Airy. |
| Guernsey | 29.52 | 749.8 | 29.74 | 755.4 | 48.5 | 9.2 | ..... | NNW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | 29.65 | 753.1 | 29.77 | 756.1 | 55 | 12.8 | ..... | S | ..... | ..... | 4 | ..... | 2ck | ..... | ..... | 0 | 0 | Very fine..... | M. P. Moyle. |
| Holyhead | 29.57 | 751.1 | 29.63 | 752.6 | 50 | 10.0 | ..... | W | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 29.43 | 747.5 | 29.72 | 754.9 | 47.8 | 8.8 | ..... | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | I. Fisher. |
| Kew, Observatory | 29.64 | 752.8 | 29.68 | 753.9 | 50.0 | 10.0 | ..... | NW | 3 | 1.3 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Threatening | The Meteorological Of. |
| Leicester, Museum | 29.38 | 746.2 | 29.64 | 752.8 | 51.5 | 10.8 | ..... | SW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 30.06 | 763.5 | 30.14 | 765.5 | 66 | 18.3 | ..... | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.39 | 746.5 | 29.49 | 749.0 | 49 | 9.4 | ..... | SW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.01 | 762.2 | 78.0 | 22.8 | ..... | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.44 | 747.8 | 29.63 | 752.6 | 54.5 | 12.5 | ..... | SSW | ..... | ..... | 3 | ..... | 2k;c | ..... | SW | 0 | 0 | D. clouds..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.11 | 739.4 | 29.63 | 752.6 | 51.7 | 10.9 | ..... | SW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Misty..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.67 | 753.6 | 49 | 9.4 | ..... | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast.. ... | H. E. Bellamy. |
| Plymouth | 29.59 | 751.6 | 29.67 | 753.6 | 51.6 | 10.9 | ..... | SSE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | John Merrifield. |
| Roche's Point | 29.60 | 751.8 | 29.68 | 753.9 | 43 | 6.1 | ..... | WNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | W. Kennedy. |
| Saint Ann's Head | 29.48 | 748.8 | 29.64 | 752.8 | 49 | 9.4 | ..... | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | John O. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 44.8 | 7.1 | ..... | W | 15 | 6.7 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery, (Turkey) | 30.16 | 766.1 | 30.23 | 767.8 | 47.8 | 8.8 | ..... | NE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | Blank | Blank | Misty..... | W. H. Lyne. |
| Sheffield | 29.37 | 746.0 | 29.64 | 752.8 | 52.9 | 11.6 | ..... | SW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0.50 | 12.7 | D. clouds..... | W. F. Cooper. |
| Silloth Rectory | 29.56 | 750.8 | 29.59 | 751.6 | 53.2 | 11.8 | 68 | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | D. clouds..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.22 | 742.2 | 29.62 | 752.3 | 49.6 | 9.8 | ..... | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. S. J. Perry. |
| Stratfield Turgiss | 29.47 | 748.5 | 29.69 | 754.1 | 50.5 | 10.3 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | C.H. Griffith, F.M.S. |
| Thurso | 29.42 | 747.2 | 29.48 | 748.8 | 49 | 9.4 | ..... | WSW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | John Trotter. |
| Truro, Royal Institution | 29.60 | 751.8 | 29.66 | 753.4 | 54 | 12.2 | ..... | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | 29.64 | 752.8 | 29.67 | 753.6 | 48.0 | 8.9 | ..... | NW | 9 | 4.0 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | The Meteorological Of. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.10 | 764.5 | 30.14 | 765.5 | 77 | 25.0 | 52 | SSE | 5 | 2.2 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | ..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.92 | 760.0 | 50.0 | 10.0 | 82 | SE | ..... | ..... | 2 | ..... | 7k | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F.R.A.S |
| Leith, Restalrig Park | ..... | ..... | 29.57 | 751.1 | 48.0 | 8.9 | ..... | W | ..... | ..... | 4 | ..... | 8k | ..... | ..... | 0.11 | 2.8 | Cloudy..... | Andrew Gibb. |
| Mauritius, Observatory | 29.83 | 757.7 | 30.02 | 762.5 | 79.4 | 26.3 | 72 | ENE | 14.0 | 6.3 | ..... | 2 | 8 | ..... | ENE | 0.02 | 0.5 | Fine..... | C. Meldrum. |
| Melbourne, Observatory | 29.95 | 760.7 | 30.04 | 763.0 | 58.1 | 14.5 | 75 | SW | 14 | 6.3 | ..... | ..... | 10 | ..... | ..... | 0.04 | 1.0 | Rain-squalls | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | 29.53 | 750.0 | 43 | 6.1 | ..... | NW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.50 | 749.3 | 43 | 6.1 | ..... | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

| British Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 41° 00′, E. 29° 00′ | ..... | ..... | 30.27‡ | 768.8‡ | 52 | 11.1 | ..... | NNE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | Squally..... | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| S. S. Amanda, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Barque Belle-Isle, N. 42° 04′, W. 33° 47′ | ..... | ..... | 30.16‡ | 766.1‡ | 61 | 16.1 | ..... | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 3 | WSW | D. clouds..... | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra, N. 43° 40′ W. 31° 25′ | ..... | ..... | 30.13‡ | 765.3‡ | 58 | 14.4 | ..... | SE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 3 | NE | D. clouds.... | Capt. Thos. Young. |
| Barque Commewyne, N. 50° 53′, W. 8° 41′ | ..... | ..... | 29.66‡ | 753.4‡ | 51.5 | 10.8 | ..... | NW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | Sprinkling.. | Capt. A. Buchan. |
| Barque Fedalina, N. 17° 55′, W. 45° 00′ | ..... | ..... | 30.13 | 765.3 | 78 | 25.6 | ..... | E | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 1 | ESE | Blue sky..... | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam, N. 6° 38′, E. 107° 21′ | ..... | ..... | 29.84‡ | 757.9‡ | 80 | 26.7 | ..... | NE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | Showery..... | Capt. Barlow. |
| S. S. Strathleven, N. 36° 38′, W. 8° 03′ | ..... | ..... | 30.08‡ | 762.8‡ | 54 | 12.2 | ..... | NW | ..... | ..... | 5 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity Miles per hour. | Wind. Velocity Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.24 | 666.5 | 29.96 | 761.0 | 64.8 | 18.2 | ..... | SE | ..... | ..... | 1 | 2c;s | ..... | ..... | ..... | 0 | 0 | ..... | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.6 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.67 | 753.6 | 29.72 | 754.8 | 43.9 | 6.6 | 88 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... |
| Faröe | 29.66 | 753.4 | 29.68 | 753.9 | 41.2 | 5.1 | 95 | Calm | ..... | ..... | 0 | ..... | 9 | ..... | ..... | ..... | ..... | Raining. |
| Godthaab, (Greenland) | 29.83 | 757.6 | 29.87 | 758.7 | 16.5 | — 8.6 | 97 | NNE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing. |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 29.37 | 745.9 | 29.40 | 746.8 | 42.6 | 5.9 | 75 | NW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.61 | 749.6 | 29.68 | 753.9 | 43.5 | 6.4 | 98 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.12 | 739.7 | 29.67 | 753.7 | 45.3 | 7.4 | 99 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.165 | 4.2 | Raining | Collignon, Director. |
| Amiens, Normal School | 29.60 | 751.8 | 29.71 | 754.6 | 50.0 | 10.0 | 74 | S | ..... | ..... | 1 | ..... | 10 | W | ..... | 0.339 | 8.6 | Covered | Bonvallet, Director. |
| Avignon, Normal School | 29.78 | 756.4 | 29.86 | 758.4 | 68.7 | 20.4 | 47 | SE | ..... | ..... | 4 | ..... | ..... | ..... | SW | 0 | 0 | ..... | M. Giraud, Director. |
| Bar-sur-Seine | 29.14 | 740.1 | 29.67 | 753.7 | 64.0 | 17.8 | 50 | S | ..... | ..... | 1 | ..... | 10 | ..... | SW | 0 | 0 | Covered | O. Saillard, Director. |
| Beauvais, Normal School | 29.40 | 746.7 | 29.67 | 753.5 | 50.2 | 10.1 | 94 | NNW | ..... | ..... | 1 | ..... | 10 | ..... | S | 0.069 | 1.75 | Covered | Frere Eugene Marie, Dir |
| Besançon, Normal School | 28.50 | 723.9 | 29.76 | 755.8 | 63.1 | 17.3 | 46 | SSW | ..... | ..... | 2 | ..... | 5 | ..... | SW | 0 | 0 | Cloudy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.08 | 738.6 | 29.85 | 758.1 | 63.5 | 17.5 | 46 | SW | ..... | ..... | 4 | ..... | kn | S | S | 0 | 0 | ..... | M. Marlot, Director. |
| Bourges, Normal School | 29.10 | 739.2 | 29.64 | 752.9 | 61.2 | 16.2 | 73 | NE | ..... | ..... | 1 | ..... | 10n | NE | NE | 0.020 | 0.5 | Raining | A. Waquet, Director. |
| Brest, Naval Observatory | 29.43 | 747.6 | 29.67 | 753.7 | 58.3 | 14.6 | 65 | SW | ..... | ..... | 2 | ..... | 2 | ..... | SW | 0.020 | 0.50 | ..... | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.33 | 745.0 | 29.74 | 755.4 | 58.6 | 14.8 | 84 | E | ..... | ..... | 3 | ..... | 5 | E | E | 0 | 0 | Cloudy | September, Director. |
| Caen, Normal School | 29.59 | 751.6 | 29.62 | 752.4 | 46.0 | 7.8 | 77 | N | ..... | ..... | 1 | ..... | 10 | ..... | N | 0.47 | 12. | Covered | M. Lair, Director. |
| Chartres, Normal School | 29.04 | 737.5 | 29.60 | 751.7 | 54.0 | 12.2 | 95 | N | ..... | ..... | 3 | ..... | 10 | ..... | NE | 0.32 | 8. | Heavy rain | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.37 | 745.9 | 29.68 | 753.8 | 61.5 | 16.4 | 55 | SSW | ..... | ..... | 3 | ..... | 8 | SW | SW | ..... | ..... | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.83 | 719.6 | 29.65 | 753.0 | 64.6 | 18.1 | 43 | SE | ..... | ..... | 2 | ..... | 8 | ..... | SW | 0 | 0 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.90 | 734.0 | 29.74 | 755.4 | 60.8 | 16 | 79 | SE | ..... | ..... | 1 | ..... | 5ck | ..... | SE | 0 | 0 | Cloudy | Dr. Coulet, Director. |
| Commune de Gréasque* | 28.77 | 730.7 | 29.91 | 759.7 | 64.2 | 17.9 | 46 | SE | ..... | ..... | 4 | ..... | 8 | ..... | SE | 0 | 0 | ¾ covered | M. Kina, Director. |
| Grenoble, Normal School | 29.06 | 738.1 | 29.80 | 757.0 | 67.6 | 19.8 | 39 | S | ..... | ..... | 3 | ..... | 10n | S | ..... | 0 | 0 | Covered | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.54 | 750.4 | 29.76 | 756.0 | 45.7 | 7.6 | 91 | NW | ..... | ..... | 1 | ..... | 8 | ..... | SW | 0 | 0 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.34 | 745.3 | 29.65 | 753.2 | 47.7 | 8.7 | 97 | N | ..... | ..... | 1 | ..... | 8 | ..... | NW | 0.091 | 2.3 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.86 | 732.7 | 29.76 | 755.8 | 65.7 | 18.7 | 50 | W | ..... | ..... | 2 | ..... | 10n | ..... | S | 0 | 0 | Covered | Baudry, Director. |
| Lorient, Naval Observatory | 29.03 | 752.5 | 29.72 | 755.0 | 54.0 | 12.2 | 74 | WSW | ..... | ..... | 4 | ..... | ..... | SW | W | 0.244 | 6.2 | ..... | Lt T. Carré, Director. |
| Mâcon. Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galsin, Director |
| Marseilles, Observatory | ..... | ..... | 29.79 | 756.7 | 68.2 | 20.1 | 16 | ESE | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0.008 | 0.20 | Very cloudy | The Staff. |
| Mirecourt, Normal School | 28.72 | 729.4 | 29.74 | 755.4 | 63.6 | 17.5 | 50 | NE | ..... | ..... | 3 | ..... | 10 | ..... | SW | 0 | 0 | Covered | M. Barbier, Director. |
| Nismes, Normal School | 29.63 | 752.6 | 29.83 | 757.6 | 66.6 | 19.2 | 56 | SE | ..... | ..... | 4 | ..... | 5 | ..... | SE | 0 | 0 | Cloudy | Boyer, Director. |
| Privas, Normal School | 28.80 | 731.4 | 29.84 | 757.9 | 62.6 | 17 | 68 | N | ..... | ..... | 1 | ..... | ..... | N | N | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.89 | 632.2 | ..... | ..... | 44.4 | 6.9 | 70 | S | ..... | ..... | 8 | ..... | 10 | ..... | S | 0 | 0 | Covered | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.71 | 754.6 | 29.74 | 755.4 | 49.8 | 9.9 | 92 | WNW | ..... | ..... | 1 | ..... | 10 | W | W | 0.16 | 4. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.57 | 751.0 | 29.65 | 753.2 | 47.1 | 8.4 | 94 | N | ..... | ..... | 2 | ..... | 10 | ..... | NE | 0.472 | 12.0 | Covered | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.66 | 753.4 | 29.69 | 754.2 | 46.9 | 8.3 | 86 | WNW | ..... | ..... | 1 | ..... | 9 | WNW | WNW | 0.293 | 7.46 | Almost cov'd | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.50 | 749.3 | 29.67 | 753.5 | 54.3 | 12.4 | 89 | SSE | ..... | ..... | 2-3 | ..... | 10 | ..... | SSW | 0.169 | 4.3 | Raining | E. Renou, Director. |
| Tarbes, Normal School | 28.71 | 729.3 | 29.78 | 756.3 | 59.0 | 15 | 50 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Huguet, Director. |
| Toulouse, Observatory | 29.10 | 739.0 | 29.81 | 757.2 | 51.4 | 10.8 | 84 | W | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 1.051 | 26.7 | Raining | M. Mercadier Julier. |
| Versailles Observatory | 29.16 | 740.7 | 29.65 | 753.2 | 54.3 | 12.4 | 86 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.319 | 8.09 | ..... | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.17 | 741.0 | 29.88 | 758.9 | 59.0 | 15 | 81 | SE | ..... | ..... | 1 | ..... | 10 | ..... | S | 0 | 0 | Covered | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.87 | 758.8 | 29.90 | 759.5 | 79.5 | 26.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 29.15 | 740.5 | 29.75 | 755.6 | 64.8 | 18.2 | 41 | ESE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | Mr. Jays. |
| Mont-Louis | 24.66 | 626.4 | 29.98 | 761.4 | 44.6 | 7.0 | 72 | SW | 36.9 | 16.5 | ..... | ..... | 10 | ..... | S | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.37 | 746.1 | ..... | ..... | 53.6 | 12.0 | 94 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.181 | 4.6 | Raining | Marié Davy, Director. |
| Perpignan | 29.66 | 753.4 | 29.77 | 756.1 | 58.6 | 14.8 | 86 | SE | 16.8 | 7.5 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.22 | 564.4 | ..... | ..... | 34.5 | 1.4 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.926 | 23.5 | Snowy | Gen'l de Nansouty. |
| Tours | 29.42 | 747.3 | 29.62 | 752.3 | 56.8 | 13.8 | 84 | S | ..... | ..... | 2 | ..... | 10 | ..... | SSW | 0.157 | 4.0 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 29.68 | 753.9 | 29.71 | 754.0 | 64 8 | 18.2 | 88 | SSE | 5.1 | 2.3 | ..... | ..... | 6ck;hz | ..... | ..... | 0 | 0 | Cloudy | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.99 | 736.4 | 29.83 | 757.7 | 53.2 | 11.8 | 75 | S | | | 4 | | .5 | SW | | 0.039 | 1.0 | | Prof. Dr. Hoh. |
| Berlin | 29.61 | 752.0 | 29.78 | 756.3 | 64.2 | 17.9 | 52 | S | | | 1 | | 8 | | | 0.024 | 0.6 | | Prof. Arndt. |
| Breslau | 29.41 | 747.0 | 29.94 | 760.4 | 64.6 | 18.1 | 48 | SSE | | | 3 | | 2 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.38 | 740.9 | 29.74 | 755.3 | 69.1 | 20.6 | 42 | SW | | | 1 | | 10 | SW | | 0 | 0 | | Albert Senx. |
| Cassel | 29.17 | 740.8 | 29.77 | 756.2 | 64.0 | 17.8 | 47 | SW | | | 2 | | 8 | SW | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.53 | 750.1 | 29.69 | 754.2 | 61.7 | 16.5 | 63 | SW | | | 3 | | 8 | | | 0.04 | 1 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.41 | 747.1 | 29.78 | 756.4 | 67.6 | 18.8 | | SSW | | | 2 | | 7 | | | 0.004 | 0.1 | | Physical Society. |
| Freienwalde on the Oder | | | | | | | | | | | | | | | | | | | Assmann., M. D. |
| Friedrichshafen | 28.42 | 721.8 | 29.83 | 757.6 | 59.7 | 15.4 | 49 | S | | | 6 | | 8 | SW | | 0 | 0 | Föhn | M. Wilhelm. |
| Hamburg | 29.64 | 752.8 | 29.71 | 754.6 | 58.3 | 14.6 | 68 | SW | | | 4 | | 10m | | | 0.083 | 2.2 | Gloomy | Captain F. Hegemann. |
| Kiel | 29.74 | 755.4 | 29.76 | 755.8 | 52.7 | 11.5 | 89 | SW | | | 3 | | 10 | | | 0.126 | 3.20 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.93 | 760.1 | 30.01 | 762.2 | 49.1 | 9.5 | 66 | SE | | | 5 | | 2 | | | 0 | 0 | | Prof. E Luther. |
| Köslin | | | 29.81 | 757.1 | 56.8 | 13.8 | | S | | | 4 | | 1 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.39 | 746.4 | 29.80 | 756 8 | 69.3 | 20.7 | 42 | SSW | | | 2 | | 9 | WSW | | 0.043 | 1.1 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 30.00 | 762.1 | 30.05 | 763.3 | 42.4 | 5.8 | 67 | SE | | | 4–5 | | 2cs | | | | | | Skalweit. |
| Neufahrwasser | 29.16 | 740.7 | 29.96 | 761.1 | 55.0 | 12.8 | 57 | SSW | | | 4 | | 7 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.63 | 752.5 | 29.91 | 759.7 | 63.5 | 17.5 | 51 | E | | | 1 | | 3 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.25 | 742.9 | 29.78 | 756.3 | 69.4 | 20.8 | 40 | S | | | 2 | | 10 | WSW | | 0.014 | 0.34 | | Imp. University Observatory. |
| Stuttgart | 28.85 | 732.7 | 29.75 | 755.6 | 69.8 | 21.0 | 35 | S | | | 1 | | 6 | SW | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.19 | 741.4 | 29.71 | 754.5 | 63.5 | 17.5 | 46 | SW | | | 6 | | 10 | | | 0 | 0 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.35 | 720.2 | 29.82 | 757.3 | 64.8 | 18.2 | 38 | S | 7 | 3 | | 3ck | | SW | W | 0 | 0 | Fair | Dr. Van Bebber. |
| Wustrow, Naval School | 29.71 | 754.5 | 29.73 | 755.1 | 53.8 | 12.1 | 78 | SSE | | | 3 | | 10s | SW | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.85 | 758.3 | 30.24 | 768.2 | 61.3 | 16.3 | | SE | | | 0.5 | | | | | | | ⅛ Clear | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.82 | 757.4 | 29.87 | 758.7 | 80.4 | 26.9 | 57 | SW | 14 | 6.3 | | | 1 | | | 0 | 0 | D. clouds | |
| Dessa | 29.34 | 745.1 | 29.80 | 756.8 | 94.8 | 34.9 | 9 | NW | 8.9 | 4.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.77 | 756.1 | 29.80 | 757.0 | 87.0 | 30.6 | 52 | NNW | 15 | 6.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.11 | 739.4 | 29.86 | 758.3 | 81.0 | 27.2 | 32 | Calm | 4 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.92 | 734.4 | 29.81 | 757.1 | 82.8 | 28.2 | 27 | NW | 4.3 | 1.9 | | | 4 | | | 0.14 | 3.6 | D. clouds | |
| Agra | 29.28 | 743.6 | 29.84 | 757.8 | 87.7 | 30.9 | 18 | W | | | | | 3 | | W | 0 | 0 | | |
| Nagpur | 28.73 | 729.7 | | | | | | NW | 3.1 | 1.4 | | | 4 | | | 0 | 0 | D. clouds | |
| Lucknow | 29.40 | 746.7 | 29.77 | 756.1 | 89.9 | 33.2 | 33 | WNW | 5.3 | 2.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.46 | 748.2 | 29.76 | 755.9 | 91.1 | 32.8 | 31 | Calm | 4.3 | 1.9 | | | 3 | W | | 0 | 0 | D. clouds | |
| Patna | 29.53 | 750.0 | 29.71 | 754.5 | 91.5 | 33.1 | 29 | Calm | 1.4 | 0.6 | | | 4 | NW | NW | 0 | 0 | D. clouds | |
| Hazaribagh | 27.75 | 705.0 | 29.72 | 754.8 | 90.8 | 32.7 | 18 | NW | 5.8 | 2.6 | | | 8 | | W | 0 | 0 | D. clouds | |
| Cuttack | 29.65 | 753.2 | 29.74 | 755.3 | 88.1 | 31.2 | 58 | S | | | | | 2 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.70 | 754.3 | 29.72 | 754.8 | 89.8 | 32.1 | 43 | SSW | 7.0 | 3.1 | | | 1 | | | 0 | 0 | D. clouds | |
| Goalpara | 29.28 | 743.6 | 29.66 | 753.2 | 90.9 | 32.7 | 31 | WNW | 4.7 | 2.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.67 | 753.7 | 29.76 | 756.0 | 85.4 | 29.7 | 75 | SSW | | | | | 3 | | | 0 | 0 | Misty | |
| Sibsagar | 29.38 | 746.3 | 29.71 | 754.7 | 85.2 | 29.6 | 61 | E | 1.0 | 0.4 | | | 0 | | | 0 | 0 | D. clouds | |
| Jubbulpore | 28.46 | 722.9 | 29.79 | 756.7 | 92.9 | 33.8 | 19 | N | 3.1 | 1.4 | | | 10 | | | 0 | 0 | Overcast | |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.68 | 753.7 | 30.09 | 764.2 | 63.5 | 17.5 | 64 | S | 3.1 | 1.4 | ..... | ..... | 7 | .. ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.55 | 750.5 | 30.07 | 763.7 | 61.3 | 16.3 | 44 | WNW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.96 | 761.0 | 30.07 | 763.8 | 61.7 | 16.5 | 65 | ESE | 1.8 | 0.8 | ..... | ..... | 4 | NE | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 29.15 | 740.5 | 30.06 | 763.5 | 54.7 | 12.6 | 75 | ESE | 3.1 | 1.4 | ..... | ..... | 10 | ..... | ..... | 0.315 | 8.0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.90 | 759.5 | 30.09 | 764.3 | 61.2 | 16.2 | 64 | SE | 10.5 | 4.7 | ..... | ..... | 8 | SW | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 28.14 | 714.7 | 30.05 | 763.2 | 53.2 | 11.8 | 73 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 30.03 | 762.8 | 30.08 | 764.0 | 59.2 | 15.1 | 80 | E | 15.0 | 6.7 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.84 | 757.9 | 30.10 | 764.4 | 65.5 | 18.6 | 41 | SW | ..... | ..... | 2 | ..... | 6 | S | ..... | 0 | 0 | ..... | Cav. F. Meucci |
| Leghorn | 30.00 | 761.9 | 30.08 | 764.0 | 62.6 | 17.0 | 66 | SW | ..... | ..... | 4 | ..... | 9 | S | ..... | 0.256 | 6.5 | ..... | Prof. P. Monte. |
| Rome | 29.93 | 760.2 | 30.11 | 764.7 | 66.7 | 19.3 | 58 | S | 9.4 | 4.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.94 | 760.6 | 30.20 | 767.0 | 65.7 | 18.7 | 41 | SSW | 2.5 | 1.1 | ..... | ..... | 8 | SSW | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.23 | 742.5 | 30.11 | 764.9 | 68.7 | 20.4 | 74 | NE | 1.3 | 0.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.76 | 755.8 | 29.95 | 760.7 | 66.6 | 19.2 | 64 | S | ..... | ..... | 2 | ..... | 3 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.82 | 757.5 | 30.08 | 763.9 | 75.0 | 23.9 | 22 | WNW | 8.0 | 3.6 | ..... | ..... | 1 | SW | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 30.11 | 764.9 | 30.19 | 766.7 | 66.4 | 19.1 | 63 | S | 11.2 | 5.0 | ..... | ..... | 2 | W | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.59 | 751.6 | 30.15 | 765.7 | 64.0 | 17.8 | 54 | WSW | 0.7 | 0.3 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... ... ... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 29.87 | 758.7 | 29.89 | 759.2 | 61.3 | 16.3 | 74 | SSW | 9.8 | 4.4 | ..... | ..... | 9ck;ks | ..... | SW | 0 | 0 | Cloudy | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.69 | 754.1 | 29.90 | 759.4 | 65.2 | 18.4 | 68 | SE | 8.6 | 1.6 | ..... | ..... | 10s | ..... | ..... | 0.070 | 1.78 | Cloudy | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.92 | 760.9 | 29.98 | 761.5 | 57.8 | 14.3 | 80 | S | 10.7 | 4.8 | ..... | ..... | 10s;ck | ..... | SW | 0 | 0 | Cloudy | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.06 | 636.5 | 30.18 | 766.6 | 48.2 | 9.0 | 48 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Fine | Prof. L. Perez. |
| Leon | 24.41 | 620.2 | 30.07 | 764.0 | 62.2 | 16.8 | 71 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.07 | 586.0 | 30.08 | 764.0 | 53.2 | 11.8 | 63 | Calm | 0 | 0 | .. ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine... | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 54.1 | 12.3 | 51 | NNE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Fine | M. V. de Leon, M. E. |
| Tlacotalpam | 29.76 | 756.0 | 29.78 | 756.3 | 72.7 | 22.6 | 82 | NE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. M. Chazaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.89 | 694.1 | 30.15 | 765.9 | 60.0 | 10.0 | 72 | ENE | 0.2 | 0.1 | ..... | 0 | 0 | ..... .. | ..... | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.39 | 721.2 | 30.04 | 762.9 | 75.9 | 24.4 | 67 | NE | ..... | ..... | 1 | ..... | 0 | .. ..... | ..... | 0 | 0 | Very clear | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.72 | 754.9 | 29.72 | 754.9 | 49.6 | 9.8 | ..... | NE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.260 | 6.6 | ..... | |
| Groningen | 29.67 | 753.5 | 29.72 | 754.9 | 46.8 | 8.2 | ..... | N | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.130 | 3.3 | ..... | |
| Helder | 29.69 | 754.1 | 29.69 | 754.1 | 47.3 | 8.5 | ..... | SW | ..... | ... ... | 1 | ..... | ..... | ..... | ..... | 0.299 | 7.6 | ..... | |
| Hellevoetsluis | 29.71 | 754.5 | 29.71 | 754.5 | 48.9 | 9.4 | 89 | Calm | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.69 | 754.0 | 29.73 | 755.2 | 47.3 | 8.5 | 88 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.224 | 5.7 | Dull | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.59 | 751.5 | 29.64 | 752.9 | 40.6 | 4.8 | 84 | S | 8.5 | 3.8 | ..... | ..... | 10 | ..... | ..... | 0.039 | 1.0 | Raining ..... | |
| Brönö | 29.70 | 754.4 | 29.74 | 755.4 | 38.5 | 3.6 | 63 | ESE | 18 | 8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.61 | 752.1 | 29.76 | 755.9 | 37.0 | 2.8 | 94 | NE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | 0.638 | 16.2 | Foggy ..... | |
| Tromsö | 29.83 | 757.6 | 29.87 | 758.7 | 29.8 | — 1.2 | 73 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory, of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.13 | 765.4 | 30.33 | 770.3 | 68.3 | 14.6 | 82 | SW | 2.5 | 1.1 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.97 | 735.8 | 30.01 | 762.2 | 63.6 | 12.0 | 54 | WNW | 11.9 | 5.3 | ..... | ..... | 5 | WNW | ..... | 0.157 | 4.0 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.23 | 767.9 | 30.32 | 770.1 | 62:8 | 17.1 | 45 | W | 4.9 | 2.2 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.73 | 755.1 | 30.09 | 764.3 | 63.8 | 12.1 | 49 | WNW | 16.1 | 7.2 | ..... | ..... | 6 | ..... | ..... | 0.303 | 7.7 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.31 | 769.8 | 30.38 | 771.6 | 61.2 | 16.2 | 58 | WSW | 9.8 | 4.4 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| Duque da Terceira, Santiago, Cape Verd I. | ..... | ..... | 30.06 | 763.5 | 72.5 | 22.5 | ..... | NE | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 3 | ..... | D. clouds..... | C.C.da Fonseca Ferreira, Comd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, N. 6° 24', E. 6° 38' | ..... | ..... | 29.87 | 758.6 | 83.5 | 28.6 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | SW | 2 | SE | Drizzling..... | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto de S. Jose de Bissao, Senegambia | ..... | ..... | 29.94 | 760.4 | 81.0 | 27.2 | ..... | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | A. Ferreira, 2d Lt. |
| Sá da Bandeira, Ambrizette, S.7° 13', E. 12°52' | ..... | ..... | 29.76 | 756.0 | 86.0 | 30.0 | ..... | SW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 3 | SW | D. clouds..... | F. Teixeira da Silva, Com'd't. L. Ribeiro de Costa, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Tejo, Macao, China | ..... | ..... | 29.96 | 761.0 | 71.8 | 22.1 | ..... | SW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | ..... | D. clouds.... | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.58 | 751.4 | 30.01 | 762.2 | 48.9 | 9.4 | 72 | SE | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.77 | 756.2 | 30.21 | 767.2 | 40.1 | 4.5 | 62 | SSE | 4 | 2 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 30.00 | 761.9 | 30.25 | 768.3 | 38.3 | 3.5 | 75 | ESE | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.28 | 769.1 | 30.30 | 769.5 | 31.5 | — 0.3 | 79 | SSE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light snow. | Central Physical Obs. |
| Kieff | 29.62 | 752.3 | 30.29 | 769.3 | 34.2 | 1.2 | 72 | SE | 9 | 4 | ..... | ..... | 10k;ks; | ck]..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolalev | 30.20 | 767.1 | 30.27 | 768.9 | 46.9 | 8.3 | 49 | NNE | 13 | 6 | ..... | ..... | 4cs | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.21 | 767.2 | 30.23 | 767.7 | 38.8 | 3.8 | 80 | ENE | 9 | 4 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.94 | 760.6 | 30.53 | 775.4 | 29.3 | — 1.5 | 41 | S | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.89 | 759.3 | 30.10 | 764.6 | 37.8 | 3.2 | 47 | NNE | 22 | 10 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.29 | 769.4 | 30.31 | 769.9 | 35.2 | 1.8 | 78 | Calm | 0 | 0 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Capt. Sselliwerstow. |
| Tiflis | 28.39 | 721.1 | 29.80 | 756.9 | 55.2 | 12.9 | 46 | NW | 18 | 8 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 29.85 | 758.2 | 29.77 | 756.1 | 33.1 | 0.6 | 96 | NE | 13 | 6 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Capt. Wisganow. |
| Krotkowo* | 29.48 | 748.8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 30.09 | 764.3 | 30.37 | 771.5 | 34.3 | 1.3 | 54 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.36 | 745.7 | 30.35 | 771.0 | 39.2 | 4.0 | 37 | S | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.46 | 748.2 | 29.69 | 754.0 | 66.0 | 18.9 | 48 | NNW | 4 | 2 | ..... | ..... | 9s;n | ..... | ..... | ..... | ..... | Raining..... | |
| Tashkend | 28.38 | 720 9 | 29.90 | 759.5 | 69.8 | 21.0 | 58 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.81 | 757.1 | 30.34 | 770.7 | 24.6 | — 4.1 | 82 | SW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.84 | 758.0 | 30.17 | 766.2 | 1.9 | —16.7 | 49 | NNW | 22 | 10 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 29.54 | 750.4 | 29.69 | 754.0 | 60.6 | 15.9 | 46 | Calm | 0 | 0 | ..... | ..... | 2c | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.47 | 748.5 | 29.57 | 751.0 | 34.3 | 1.3 | 91 | SE | 22 | 10 | ..... | ..... | 10n | ..... | ..... | Blank | Blank | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount— and generally the kind of cloudiness— without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47', E. 48° 34'.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.69 | 754.1 | 29.80 | 756.8 | 61.3 | 16.3 | 62 | SE | 2.7 | 1.19 | ..... | ..... | 10 | ..... | ..... | 0.015 | 0.38 | Covered..... | Antonio Rave, Directon |
| Bilbao, Met. Obs'y | 29.84 | 757.9 | 29.90 | 759.4 | 53.1 | 11.7 | 79 | W | 2.4 | 1.08 | ..... | ..... | 10 | ..... | ..... | 0.276 | 7.0 | Rainy ..... | Prof. Manuel de Navera |
| Burgos, Met. Obs'y | 26.87 | 682.5 | ..... | ..... | 42.3 | 5.7 | 89 | N | 12.6 | 5.62 | ..... | ..... | 8 | ..... | ..... | 0.059 | 1.5 | Raining ..... | Domingo Martin y Perez |
| Madrid, Royal Osservatory | 27.62 | 701.4 | ..... | ..... | 55.2 | 12.9 | 47 | W | 21.6 | 9.66 | ..... | 1 | 3 | SW | ..... | 0.071 | 1.8 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.71 | 754.6 | 29.86 | 758.5 | 61.2 | 16.2 | 30 | WSW | 2.1 | 0.92 | ..... | 5 | 5 | ENE | ..... | 0.306 | 7.77 | Covered..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.97 | 735.9 | 29.88 | 758.9 | 50.5 | 10.3 | 78 | SW | 4.3 | 1.9 | ..... | ..... | 9 | ..... | ..... | 0.240 | 6.1 | Rainy ..... | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.94 | 760.4 | 30.01 | 762.2 | 64.6 | 18.1 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.79 | 756.7 | 29.84 | 758.0 | 84.2 | 29.0 | 75 | ESE | 7.8 | 3.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.01 | 762.2 | 30.11 | 764.7 | 56.7 | 13.7 | 61 | WNW | 16.2 | 7.2 | ..... | 0 | 6 | ..... | WNW | 0.027 | 0.7 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I | 29.95 | 760.8 | 30.04 | 763.1 | 78.8 | 26.0 | 89 | SW | 0 | 0 | ..... | 5s | 3k | S | S | 0.532 | 13.50 | D. clouds..... | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:18 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.03 | 762.7 | 30.07 | 763.7 | 32.7 | 0.4 | ..... | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.04 | 762.9 | 30.09 | 764.2 | 32.4 | 0.2 | 100 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.260 | 6.6 | ..... | |
| Hernosand | 29.96 | 761.1 | 30.02 | 762.4 | 33.4 | 0.8 | 92 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.008 | 0.2 | ..... | |
| Stockholm | 29.76 | 755.9 | 29.94 | 760.4 | 36.0 | 2.2 | 84 | SSE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.84 | 757.9 | 29.90 | 759.4 | 40.3 | 4.6 | 78 | SSE | ..... | ..... | 7 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.85 | 758.1 | 29.92 | 760.0 | 36.0 | 2.2 | 84 | SE | 11.4 | 5.1 | ..... | ..... | 10 | ..... | SSE | 0.369 | 9.37 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.39 | 721.1 | 29.81 | 757.2 | 56.5 | 13.6 | 51 | N | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | The Observatory. |
| Zurich | 28.20 | 716.3 | 29.80 | 756.9 | 66.4 | 19.1 | 88 | SE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —3.1 mm.; Thermometer, +3.7 Cent.; Relative Humidity, —7 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.28 | 769.1 | 46.8 | 8.2 | 72 | N | 11 | 5.0 | ..... | ..... | 10 | ..... | N | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.12 | 765.0 | 71.6 | 22.0 | ..... | NW | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 30.21 | 767.3 | 66.4 | 19.1 | ..... | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.75 | 755.6 | 29.87 | 758.7 | 66.0 | 18.9 | 84 | SW | ..... | ..... | 1 | ..... | 4ks | ..... | SW | 0.019 | 0.48 | D. clouds | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.75 | 755.6 | 29.82 | 757.4 | 34.0 | 1.1 | 97 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Overcast | Hon. J. Ferguson. |
| Brockville, Ontario | 29.18 | 741.2 | 29.50 | 749.3 | 25 | — 3.9 | ..... | NW | 5 | 2.2 | ..... | ..... | 8s | ..... | NW | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N. B | 28.72 | 729.5 | 28.78 | 731.0 | 35 | 1.7 | 100 | NE | 5 | 2.2 | ..... | ..... | 10n | ..... | NE | 0.83 | 21.1 | Light rain | G. A. Blair. |
| Charlottetown, P. E. Island | 28.77 | 730.7 | 28.81 | 731.8 | 42 | 5.6 | 95 | E | 20 | 8.9 | ..... | ..... | 8s | ..... | SE | 0.273 | 6.94 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.11 | 739.4 | 29.31 | 744.5 | 24.4 | — 4.2 | 84 | NW | ..... | ..... | 3 | ..... | 10s | ..... | ..... | 0 | 0 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | 29.82 | 757.4 | 29.86 | 758.4 | 41.1 | 5.1 | 100 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. Bevis. |
| *Father Point, Quebec | 28.80 | 731.5 | 28.83 | 732.3 | 32 | 0.0 | 100 | E | 20 | 8.9 | ..... | ..... | 10n | ..... | ..... | 0.67 | 17.0 | Heavy rain | J. McWilliams. |
| Fredericton, N. B | 28.66 | 728.0 | 28.72 | 729.5 | 40.1 | 4.5 | 93 | NE | 3 | 1.3 | ..... | ..... | 10n | ..... | ..... | 0.20 | 5.1 | Light rain | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.34 | 745.2 | 30.25 | 768.3 | 10 | —12.2 | 96 | E | 5 | 2.2 | ..... | 5k | 5n | E | E | 0 | 0 | Cloudy | James Stewart. |
| Granton, Ontario | 28.54 | 724.9 | 29.07 | 753.6 | 29 | — 1.7 | ..... | W | ..... | ..... | 1 | 2cs | 0 | ..... | ..... | 0 | 0 | Fine | James Grant. |
| *Halifax, N. S | 28.55 | 725.2 | 28.68 | 728.5 | 48 | 6.1 | 96 | SE | 20 | 8.9 | ..... | ..... | 10n | ..... | SE | 1.090 | 27.69 | Light rain | F. Allison, M. A. |
| Hamilton, Ontario | 29.35 | 745.0 | 29.71 | 754.6 | 32.7 | 0.4 | 94 | SW | ..... | ..... | 3 | 5ck | 0 | SW | ..... | 0 | 0 | Fair | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.16 | 740.7 | 29.51 | 749.5 | 30 | — 1.1 | 93 | W | 14 | 6.3 | ..... | 8c | 0 | W | ..... | 0 | 0 | Fair | S. Woods, M. A. |
| Little Glace Bay, N. S | 28.91 | 734.3 | 28.95 | 735.3 | 35.7 | 4.3 | 97 | S | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.41 | 10.4 | Foggy | C. H. Rigby. |
| Moose Factory, Ontario | 29.00 | 750.4 | 29.94 | 760.4 | 9.0 | —12.8 | 94 | N | ..... | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowy | J. R. Nason. |
| *Montreal, Quebec | 29.02 | 737.1 | 29.22 | 742.2 | 24 | — 4.4 | 90 | W | 18 | 8.0 | ..... | ..... | 10n | ..... | ..... | 0.40 | 10.2 | Heavy snow | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 28.95 | 735.3 | 29.09 | 754.1 | 20 | — 6.7 | 85 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | 28.84 | 732.5 | 29.02 | 762.3 | 25.3 | — 3.7 | 61 | W | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.00 | 736.6 | 29.71 | 754.6 | 31 | — 0.6 | 48 | Calm | 0 | 0 | ..... | 10k | 0 | W | ..... | 0 | 0 | Fair | H. Morgan. |
| Port Hastings, N. S | 28.84 | 732.5 | 28.90 | 734.0 | 35.4 | 1.9 | ..... | S | 7 | 3.1 | ..... | ..... | ..... | ..... | ..... | 0.30 | 7.6 | Foggy | Peter Grant. |
| Port Stanley, Ontario | 29.06 | 738.1 | 29.72 | 754.9 | 33 | 0.6 | 86 | W | 3 | 1.3 | ..... | 8k | 2ks | W | W | 0 | 0 | Cloudy | M. Payne. |
| *Quebec, Quebec | 28.68 | 728.5 | 29.01 | 736.8 | 22 | — 5.6 | 79 | N | ..... | ..... | 5 | ..... | 10n | ..... | N | 0.25 | 6.1 | Light snow | Capt. Ashe, R. N |
| *Rockliffe, Ontario | 29.12 | 739.6 | 29.61 | 752.1 | 10 | — 7.2 | 72 | NW | 6 | 2.7 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 28.61 | 726.7 | 28.66 | 728.0 | 43 | 6.1 | 94 | NE | ..... | ..... | 2 | ..... | Fog | ..... | ..... | 1.40 | 35.6 | Foggy | Dr. Gove. |
| St. John, N. B | 28.40 | 723.6 | 28.65 | 727.7 | 46 | 7.8 | 100 | NE | 10 | 4.5 | ..... | 10k | 0 | ..... | ..... | 0.26 | 6.6 | Overcast | G. Murdock, C. E. |
| *Saugeen, Ontario | 28.95 | 735.3 | 29.08 | 738.9 | 28 | — 2.2 | 89 | SE | 6 | 2.7 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Cloudy | K. Stewart. |
| Stayner, Ontario | 28.82 | 732.0 | 29.02 | 752.3 | 34 | 1.1 | 77 | NW | 9 | 4.0 | ..... | 8ck | 0 | NW | ..... | 0 | 0 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.36 | 720.3 | 29.08 | 738.9 | 27.5 | — 2.5 | 79 | Calm | 0 | 0 | ..... | ..... | 8s | ..... | ..... | 0 | 0 | Cloudy | C. J. MacGregor, M. A. |
| *Sydney, C. B | 28.96 | 735.6 | 29.00 | 736.6 | 43 | 6.1 | 98 | SE | 14 | 6.3 | ..... | ..... | 10n | ..... | ..... | 0.54 | 13.7 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.27 | 743.4 | 29.67 | 753.6 | 29 | — 1.7 | 83 | W | 5 | 2.2 | ..... | 2cs | 2s | W | W | 0 | 0 | Fair | Magnetic Observatory |
| Windsor, N. S | 28.59 | 726.2 | 28.68 | 728.5 | 42.0 | 5.6 | 91 | E | 13 | 5.8 | ..... | ..... | 10k;n | ..... | ..... | 0.70 | 17.8 | Misty | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | 29.55 | 750.6 | ..... | ..... | 33.0 | 0.6 | 100 | SE | ..... | ..... | ..... | Fog | Fog | ..... | ..... | 0.01 | 0.3 | Foggy | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Cloud. Amount. Up'er 0—10. | Cloud. Amount. Low'r 0—10. | Cloud. Direction. Upper. From— | Cloud. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.08 | 738.6 | 29.30 | 744.2 | 30 | — 1.1 | 47 | NW | 35 | 15.6 | ..... | 2c | 5s | Calm | Calm | 0 | 0 | Fair | |
| Alpena, Michigan | 28.98 | 736.1 | 29.64 | 752.8 | 30 | — 1.1 | 89 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.3 | Light snow. | |
| Atlanta, Georgia | 28.61 | 726.7 | 29.73 | 755.1 | 52 | 11.1 | 53 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Atlantic City, New Jersey | 29.51 | 749.5 | 29.52 | 749.8 | 37 | 2.8 | 53 | NW | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Augusta, Georgia | 29.68 | 753.9 | 29.86 | 758.4 | 51 | 10.6 | 52 | S | 4 | 1.8 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Baltimore, Maryland | 29.62 | 752.3 | 29.67 | 753.6 | 42 | 5.6 | 34 | NW | 9 | 4.0 | ..... | Haze | 2s | Calm | NW | 0 | 0 | Fair | |
| Barnegat, New Jersey | 29.43 | 747.5 | 29.45 | 748.0 | 38 | 3.3 | 45 | NW | 31 | 13.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 28.36 | 720.3 | 30.22 | 767.6 | 24 | — 4.4 | 87 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Boerne, Texas | 28.39 | 721.1 | 29.69 | 754.1 | 56 | 13.9 | 51 | N | 12 | 5.4 | ..... | 5k | 5ks | W | W | 0.27 | 6.9 | Cloudy | |
| Boise City, Idaho | 27.07 | 687.6 | 30.03 | 762.8 | 47 | 8.3 | 70 | SE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boston, Massachusetts | 28.84 | 732.5 | 28.99 | 736.3 | 30 | — 1.1 | 68 | NW | 30 | 13.4 | ..... | 2k | 8s | NW | NW | 0.35 | 8.9 | Cloudy | |
| Brackettville, Texas | 28.82 | 732.0 | 29.84 | 757.9 | 59 | 15.0 | 59 | N | 8 | 3.6 | ..... | 0 | 8s | ..... | Calm | 0.26 | 6.6 | Fair | |
| Breckenridge, Minnesota | 29.21 | 741.9 | 30.30 | 769.6 | 13 | —10.6 | 81 | N | 16 | 7.2 | ..... | 0 | 5ks | ..... | N | 0 | 0 | Fair | |
| Brownsville, Texas | 29.68 | 753.9 | 29 72 | 754.9 | 78 | 25.6 | 73 | S | 4 | 1.8 | ..... | 5k | 0 | S | ..... | 0 | 0 | Fair | |
| Buffalo, New York | 28.95 | 735.3 | 29.67 | 753.6 | 27 | — 2.8 | 82 | SW | 6 | 2.7 | ..... | 2cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 54 | 12.2 | 15 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| Burlington, Vermont | 28.98 | 736.1 | 29.27 | 743.4 | 23 | — 5.0 | 86 | NW | 12 | 5.4 | ..... | ..... | 10n | ..... | W | 0.05 | 1.3 | Light snow. | |
| Cairo, Illinois | 29.52 | 749.8 | 29.91 | 759.7 | 47 | 8.3 | 77 | N | 6 | 2.7 | ..... | 0 | 8s | ..... | SW | Inap. | Inap. | Fair | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.21 | 640.3 | 30.01 | 762.2 | 46 | 7.8 | 77 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | Calm | 0.75 | 19.1 | Cloudy | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 54 | 12.2 | 67 | S | ..... | ..... | 2 | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Camp o, California | 27.42 | 696.5 | 29.99 | 761.7 | 48 | 8.9 | 93 | SW | 4 | 1.8 | ..... | ..... | Fog | ..... | SW | 0.03 | 0.8 | Foggy | |
| Cape Hatteras, N. Carolin | 29.82 | 757.4 | 29.82 | 757.4 | 49 | 9.4 | 51 | NW | 10 | 4.5 | ..... | 1cs | 9s | Calm | NW | 0 | 0 | Cloudy | |
| Cape Henry, Virginia | 29.75 | 755.6 | 29.77 | 756.1 | 45 | 7.2 | 76 | W | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Cape Lookout, N. Carolin | 29.83 | 757.7 | 29.84 | 757.9 | 49 | 9.4 | 51 | NW | 12 | 5.4 | ..... | 10cs | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 29.57 | 751.1 | 29.60 | 751.8 | 39 | 3.9 | 47 | W | 38 | 17.0 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Castroville, Texas | 29.09 | 738.9 | 29.78 | 756.4 | 61 | 16.1 | 77 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Charleston, South Carolin | 29.82 | 757.4 | 29.88 | 758.9 | 55 | 12.8 | 45 | SW | 5 | 2.2 | ..... | 8k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Cheyenne, Wyoming | 24.15 | 613.4 | 30.09 | 764.3 | 25 | — 3.9 | 87 | SW | 4 | 1.8 | ..... | 0 | 8s | ..... | SW | Inap. | Inap. | Cloudy | |
| Chicago, Illinois | 29.13 | 739.9 | 29.82 | 757.4 | 39 | 3.9 | 73 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Cincinnati, Ohio | 29.18 | 741.2 | 29.53 | 757.7 | 44 | 6.7 | 68 | SW | 5 | 2.2 | ..... | 9c | 0 | W | ..... | 0 | 0 | Cloudy | |
| Cleveland, Ohio | 29.01 | 736.8 | 29.74 | 755.4 | 34 | 1.1 | 70 | SW | 12 | 5.4 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Coleman City, Texas | 28.17 | 715.5 | 29.84 | 757.9 | 49 | 9.4 | 64 | N | 23 | 10.3 | ..... | 10cs | 0 | N | ..... | 0.53 | 13.5 | Cloudy | |
| Columbus, Ohio | 28.93 | 734.8 | 29.77 | 756.1 | 39 | 3.9 | 55 | Calm | 0 | 0 | ..... | 2c | Haze | Calm | Calm | 0 | 0 | Fair | |
| Concho, Texas | 28.09 | 713.5 | 29.77 | 756.1 | 49 | 9.4 | 85 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.43 | 10.9 | Cloudy | |
| Corsicana, Texas | 29.34 | 745.2 | 29.80 | 756.9 | 57 | 13.9 | 75 | NW | 12 | 5.4 | ..... | 10cs | 0 | NW | ..... | 0.15 | 3.8 | Cloudy | |
| Davenport, Iowa | 29.29 | 744.0 | 29.94 | 760.5 | 34 | 1.1 | 79 | NW | 18 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0.22 | 5.6 | Clear | |
| Deadwood, Dakota | 25.51 | 647.9 | ..... | ..... | 23 | — 5.0 | 73 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Decatur, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Denison, Texas | 29.10 | 739.1 | 29.89 | 759.2 | 53 | 11.7 | 61 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 0.16 | 4.1 | Cloudy | |
| Denver, Colorado | 24.89 | 632.2 | 30.11 | 764.8 | 38 | 3.3 | 81 | NW | 1 | 0.4 | ..... | 5ck | 5s | Calm | Calm | 0.10 | 2.5 | Cloudy | |
| Des Moines, Iowa | 29.18 | 741.2 | 30.11 | 764.8 | 27 | — 2.8 | 76 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.09 | 2.3 | Clear | |
| Detroit, Michigan | 29.02 | 737.1 | 29.70 | 754.4 | 33 | 0.6 | 70 | SW | 5 | 2.2 | ..... | ..... | 10s | ..... | W | 0 | 0 | Threatening | |
| Dodge City, Kansas | 27.60 | 701.0 | 30.00 | 762.0 | 31 | — 0.6 | 79 | N | 8 | 3.6 | ..... | 2cs | 0 | W | ..... | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.26 | 743.2 | 29.98 | 761.5 | 32 | 0.0 | 59 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.19 | 4.8 | Clear | |
| Duluth, Minnesota | 29.41 | 747.0 | 30.13 | 765.3 | 22 | — 5.6 | 72 | Calm | 0 | 0 | ..... | 2k | 0 | W | ..... | 0.42 | 10.7 | Fair | |
| Eagle Pass, Texas | 29.09 | 738.9 | 29.82 | 757.4 | 63 | 17.2 | 67 | NW | 24 | 10.7 | ..... | 5cs | 0 | Calm | ..... | 0.05 | 1.3 | Fair | |
| Eastport, Maine | 28.67 | 728.7 | 28.63 | 727.2 | 43 | 6.1 | 100 | N | 9 | 4.0 | ..... | ..... | Fog | ..... | N | 1.19 | 30.2 | Foggy | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| El Paso, Texas | 26.27 | 667.2 | ..... | ..... | 49 | 9.4 | 93 | W | 4 | 1.8 | ..... | ..... | 10n | ..... | W | 0.12 | 3.0 | Light rain | |
| Erie, Pennsylvania | 28.98 | 736.1 | 29.70 | 754.4 | 36 | 2.2 | 61 | SW | 8 | 3.6 | ..... | 10ck | 0 | W | ..... | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.17 | 740.9 | 29.86 | 758.4 | 21 | — 6.1 | 71 | NW | 29 | 13.0 | ..... | ..... | 10n | ..... | NW | 0.06 | 1.5 | Light snow. | |
| Florence, Arizona | 28.51 | 724.1 | 30.11 | 764.8 | 58 | 14.4 | 64 | S | 3 | 1.3 | ..... | 8k | 0 | S | ..... | 0.83 | 21.6 | Fair | |
| Fort Buford, Dakota | 28.17 | 715.5 | ..... | ..... | 24 | — 4.4 | 87 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.51 | 647.9 | 29.61 | 752.1 | 41 | 5.0 | 48 | N | 9 | 4.0 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Fort Davis, Texas | 25.22 | 640.6 | 30.18 | 766.6 | 42 | 5.6 | 100 | E | 12 | 5.4 | ..... | ..... | 10n | ..... | E | 0.11 | 2.8 | Light rain | |
| Fort Gibson, Indian Ter | 29.41 | 747.0 | 29.96 | 761.0 | 47 | 8.3 | 70 | N | 16 | 7.2 | ..... | ..... | 10s | ..... | N | 0.20 | 5.1 | Cloudy | |
| Fort Griffin, Texas | 28.72 | 729.5 | 29.99 | 761.7 | 50 | 10.0 | 52 | NW | 14 | 6.3 | ..... | 2c | 0 | Calm | ..... | 0.12 | 3.0 | Fair | |
| Fort Keogh, Montana | 27.62 | 701.5 | ..... | ..... | 24 | — 4.4 | 74 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort McKavett, Texas | 27.70 | 703.6 | 29.62 | 752.3 | 49 | 9.4 | 64 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.75 | 730.2 | 29.87 | 758.7 | 49 | 9.4 | 44 | N | 38 | 17.0 | ..... | 5c | 2s | Calm | W | 0 | 0 | Cloudy | |
| Fort Stevenson, Dakota | 28.35 | 720.1 | ..... | ..... | 24 | — 4.4 | 74 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Fredericksburg, Texas | 28.14 | 714.7 | 29.65 | 753.1 | 66 | 18.9 | 84 | N | 6 | 2.7 | ..... | ..... | 10ks | ..... | Calm | 0.50 | 12.7 | Cloudy | |
| Galveston, Texas | 29.78 | 756.4 | 29.82 | 757.4 | 72 | 22.2 | 90 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Graham, Texas | 28.91 | 734.3 | 29.97 | 761.2 | 51 | 10.6 | 53 | N | 16 | 7.2 | ..... | ..... | 10s | ..... | NW | 0.51 | 13.0 | Cloudy | |
| Grand Haven, Michigan | 29.12 | 739.6 | 29.77 | 756.1 | 36 | 2.2 | 71 | NW | 20 | 8.9 | ..... | 2k | 5s | N | Calm | 0.09 | 2.3 | Fair | |
| Indianapolis, Indiana | 29.02 | 737.1 | 29.80 | 756.9 | 43 | 6.1 | 83 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Indianola, Texas | 29.74 | 755.4 | 29.77 | 756.1 | 72 | 22.2 | 95 | SE | 2 | 0.9 | ..... | ..... | 10n | ..... | SE | 0.04 | 1.0 | Light rain | |
| Jacksboro, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.37 | 9.4 | ..... | |
| Jacksonville, Florida | 29.93 | 760.2 | 29.95 | 760.7 | 56 | 13.3 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.32 | 744.7 | 29.95 | 760.7 | 35 | 1.7 | 80 | N | 14 | 6.3 | ..... | 1k | 0 | NW | ..... | 0.38 | 9.7 | Clear | |
| Key West, Florida | 29.97 | 761.2 | 30.01 | 762.2 | 69 | 20.6 | 70 | NE | 3 | 1.3 | ..... | 1k | 0 | NE | ..... | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 29.75 | 755.6 | 29.78 | 756.4 | 47 | 8.3 | 41 | NW | 16 | 7.2 | ..... | 5cs | 5s | W | NW | 0 | 0 | Cloudy | |
| Knoxville, Tennessee | 28.82 | 732.0 | 29.83 | 757.7 | 42.5 | 5.8 | 92 | E | 1 | 0.4 | ..... | ..... | 10n | ..... | W | 0.22 | 5.6 | Light rain | |
| La Crosse, Wisconsin | 29.25 | 742.9 | 30.02 | 762.5 | 27 | — 2.8 | 64 | N | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| La Mesilla, New Mexico | 26.08 | 662.4 | 30.23 | 767.8 | 53 | 11.7 | 93 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.34 | 8.6 | Threatening | |
| Laredo, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Leavenworth, Kansas | 29.24 | 742.7 | 30.13 | 765.3 | 31 | — 0.6 | 69 | N | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.61 | 752.1 | 29.95 | 760.7 | 54.0 | 12.2 | 87 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.13 | 3.3 | Light rain | |
| Louisville, Kentucky | 29.28 | 743.7 | 29.84 | 757.9 | 45 | 7.2 | 76 | SE | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.07 | 1.8 | Cloudy | |
| Lynchburg, Virginia | 29.07 | 738.4 | 29.74 | 755.4 | 46 | 7.8 | 33 | SW | 4 | 1.8 | ..... | 0 | 5ks | ..... | Calm | 0 | 0 | Fair | |
| Madison, Wisconsin | 28.89 | 733.8 | 29.90 | 759.4 | 31 | — 0.6 | 69 | NW | 19 | 8.5 | ..... | 1k | 0 | NW | ..... | 0.04 | 1.0 | Clear | |
| Marquette, Michigan | 29.17 | 740.9 | 29.90 | 759.4 | 20 | — 6.7 | 100 | NW | 17 | 7.6 | ..... | ..... | 10n | ..... | Calm | 0.16 | 4.1 | Light snow. | |
| Mason, Texas | 28.52 | 724.4 | 30.00 | 762.0 | 53 | 11.7 | 67 | N | 11 | 4.9 | ..... | 5cs | 0 | W | ..... | 1.12 | 28.4 | Fair | |
| Memphis, Tennessee | 29.49 | 749.0 | 29.81 | 757.2 | 50 | 10.0 | 100 | N | 5 | 2.2 | ..... | ..... | 10n | ..... | N | 1.02 | 25.9 | Light rain | |
| Milwaukee, Wisconsin | 29.09 | 738.9 | 29.83 | 757.7 | 34 | 1.1 | 61 | NW | 18 | 8.0 | ..... | 0 | 1s | ..... | Calm | Inap. | Inap. | Clear | |
| Mobile, Alabama | 29.85 | 758.2 | 29.90 | 759.4 | 69 | 20.6 | 90 | S | 1 | 0.4 | ..... | 2c | 5s | W | W | 0 | 0 | Fair | |
| Montgomery, Alabama | 29.58 | 751.3 | 29.82 | 757.4 | 58 | 14.4 | 75 | S | 9 | 4.0 | ..... | 5c;cs | 0 | W | ..... | 0 | 0 | Fair | |
| Morgantown, West Virginia | 28.70 | 729.0 | 29.75 | 755.6 | 40 | 4.4 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mt. Washington, N. H. | 22.66 | 575.6 | 29.02 | 737.1 | 3 | —16.1 | 100 | NW | 39 | 17.4 | ..... | ..... | Fog | ..... | NW | 1.21 | 30.7 | Foggy | |
| Nashville, Tennessee | 29.32 | 744.7 | 29.85 | 758.2 | 47 | 8.3 | 85 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.15 | 3.8 | Cloudy | |
| New Haven, Connecticut | 29.11 | 739.4 | 29.22 | 742.2 | 38 | 3.3 | 54 | NW | 10 | 4.5 | ..... | 0 | 5s | ..... | Calm | 0.47 | 11.9 | Fair | |
| New London, Connecticut | 29.09 | 738.9 | 29.14 | 740.1 | 34 | 1.1 | 61 | NW | 22 | 9.8 | ..... | 6ck | 0 | W | ..... | 1.04 | 26.4 | Fair | |
| New Orleans, Louisiana | 29.81 | 757.2 | 29.87 | 758.7 | 70 | 21.1 | 90 | SW | 3 | 1.3 | ..... | 2cs | Fog | Calm | Calm | 0 | 0 | Fair | |
| Newport, Rhode Island | 29.04 | 737.6 | 29.09 | 738.9 | 33 | 0.6 | 61 | W | 23 | 10.3 | ..... | 5k | 5s | W | Calm | 0.67 | 17.0 | Cloudy | |
| New York, New York | 29.24 | 742.7 | 29.42 | 747.2 | 37 | 2.8 | 62 | NW | 22 | 9.8 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Norfolk, Virginia | 29.72 | 754.9 | 29.78 | 756.4 | 45 | 7.2 | 46 | W | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.28 | 692.9 | 30.01 | 762.2 | 24 | — 4.4 | 74 | NW | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.81 | 757.2 | 29.85 | 758.2 | 41.2 | 5.1 | 100 | NE | 1 | 0.4 | | | Fog | | Calm | 0 | 0 | Foggy | |
| Omaha, Nebraska | 28.99 | 736.3 | 30.15 | 765.8 | 30 | — 1.1 | 68 | NW | 11 | 4.9 | | 0 | 0 | | | 14 | 3.6 | Clear | |
| Oswego, New York | 29.25 | 742.9 | 29.57 | 751.1 | 33 | 0.6 | 89 | NE | 20 | 8.9 | | 5c | 0 | Calm | | 0 | 0 | Fair | |
| Pembina, Dakota | 29.41 | 747.0 | 30.31 | 769.9 | 10 | —12.2 | 100 | Calm | 0 | 0 | | 0 | 5s | | NW | Inap. | Inap. | Fair | |
| Philadelphia, Pa | 29.50 | 749.3 | 29.56 | 750.8 | 38 | 3.3 | 45 | NW | 28 | 12.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Phœnix, Arizona | 28.81 | 731.8 | 30.62 | 777.7 | 55 | 12.8 | 87 | E | 2 | 0.9 | | 0 | 5s | | S | 0.31 | 7.9 | Fair | |
| Pike's Peak, Colorado | 17.71 | 449.8 | 29.92 | 760.0 | 12 | —11.1 | 42 | NE | 28 | 12.5 | | 2cs | 0 | Calm | | 0.26 | 6.6 | Fair | |
| Ploche, Nevada | 28.93 | 607.8 | 29.70 | 754.4 | 47 | 8.3 | 77 | S | 10 | 4.5 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Pittsburg, Pennsylvania | 28.94 | 735.1 | 29.76 | 755.9 | 34 | 1.1 | 61 | SW | 5 | 2.2 | | 5ck | 0 | NW | | 0 | 0 | Fair | |
| Port Huron, Michigan | 28.99 | 736.3 | 29.66 | 753.4 | 33 | 0.6 | 70 | SW | 6 | 2.7 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Portland, Maine | 28.83 | 732.3 | 28.87 | 733.3 | 30 | — 1.1 | 68 | N | 28 | 12.5 | | | 10s | | Calm | 0.54 | 13.7 | Cloudy | |
| Portland, Oregon | 29.75 | 755.6 | 29.85 | 758.2 | 52.0 | 11.1 | 73 | NW | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Prescott, Arizona | 24.70 | 627.4 | 30.06 | 763.5 | 46 | 7.8 | 84 | SW | 3 | 1.3 | | | 10s | | W | 0.05 | 1.3 | Cloudy | |
| Pilot Point, Texas | 29.13 | 739.9 | 29.94 | 760.5 | 60 | 15.6 | 70 | SE | 16 | 7.2 | | 0 | 0 | | | 0.02 | 0.5 | Clear | |
| Punta Rassa, Florida | 30.00 | 762.0 | 30.02 | 762.5 | 60 | 15.6 | 65 | E | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Red Bluff, California | 29.49 | 749.0 | 29.85 | 758.2 | 57 | 13.9 | 93 | SE | 2 | 0.9 | | | 10ks | | Calm | 0.01 | 0.3 | Cloudy | |
| Rio Grande City, Texas | | | | | | | | | | | | | | | | | | | |
| Rochester, New York | 28.99 | 736.3 | 29.61 | 752.1 | 33 | 0.6 | 89 | NW | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Roseburg, Oregon | 29.27 | 743.4 | 29.83 | 757.7 | 51.0 | 10.6 | 96 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Sacramento, California | 29.78 | 756.4 | 29.86 | 758.4 | 55 | 12.8 | 93 | SE | 2 | 0.9 | | | 10n | | SE | 0.21 | 10.2 | Light rain | |
| St. Louis, Missouri | 29.33 | 745.0 | 29.90 | 759.4 | 46 | 7.8 | 77 | N | 10 | 4.5 | | | 10s | | N | Inap. | Inap. | Cloudy | |
| St. Marks, Florida | 29.93 | 760.2 | 29.95 | 760.7 | 53 | 11.7 | 93 | SW | 1 | 0.4 | | 3ckics | 0 | Calm | | 0 | 0 | Cloudy | |
| St. Paul, Minnesota | 29.22 | 742.2 | 30.05 | 763.3 | 22 | —5.6 | 72 | NW | 16 | 7.2 | | 0 | 0 | | | 0.15 | 3.8 | Clear | |
| Salt Lake City, Utah | 25.52 | 648.2 | 29.85 | 758.2 | 54 | 12.2 | 26 | NE | 16 | 7.2 | | 1c | 0 | Calm | | 0 | 0 | Clear | |
| San Antonio, Texas | 29.13 | 739.9 | 29.09 | 754.1 | 67 | 19.4 | 84 | N | 2 | 0.9 | | | 10s | | N | 0.01 | 0.3 | Cloudy | |
| San Diego, California | 29.92 | 760.0 | 29.99 | 761.7 | 57 | 13.9 | 94 | SE | 5 | 2.2 | | | 10s | | Calm | 0.02 | 0.5 | Cloudy | |
| Sandusky, Ohio | 29.08 | 738.6 | 29.76 | 755.9 | 37 | 2.8 | 53 | SW | 8 | 3.6 | | 10k | 0 | NW | | 0 | 0 | Cloudy | |
| Sandy Hook, New Jersey | 29.37 | 746.0 | 29.40 | 746.7 | 40 | 4.4 | 89 | NW | 31 | 13.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| San Francisco, California | 29.81 | 757.2 | 29.87 | 758.7 | 56.7 | 13.7 | 87 | SW | 2 | 0.9 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Santa Fé, New Mexico | 23.25 | 590.5 | 29.79 | 756.7 | 36 | 2.2 | 80 | N | 2 | 0.9 | | | 10n | | Calm | 0.02 | 0.5 | Light snow | |
| Savannah, Georgia | 29.80 | 756.9 | 29.90 | 759.4 | 56 | 13.3 | 46 | SW | 4 | 1.8 | | 8k | Haze | SW | Calm | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.51 | 749.5 | 29.72 | 754.9 | 71 | 21.7 | 80 | W | 3 | 1.3 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Silver City, New Mexico | 24.27 | 616.4 | 30.46 | 773.7 | 45 | 7.2 | 76 | Calm | 0 | 0 | | | 10s | | Calm | 0.22 | 5.6 | Cloudy | |
| Smithville, North Carolina | 29.88 | 758.9 | 29.91 | 759.7 | 49 | 9.4 | 85 | W | 4 | 1.8 | | 10cs | 0 | W | | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 29.05 | 737.9 | 29.18 | 741.2 | 32 | 0.0 | 79 | NW | 20 | 8.9 | | | 10s | | NW | 0.11 | 2.8 | Threatening | |
| Stockton, Texas | 27.07 | 687.6 | 30.07 | 763.8 | 50 | 10.0 | 65 | NE | 13 | 5.8 | | | 8ks | | NE | 0 | 0 | Cloudy | |
| Thatcher's Island, Mass | 28.87 | 733.3 | 28.92 | 734.6 | 30 | — 1.1 | 68 | NW | 38 | 17.0 | | 8k | 0 | NW | | 0.67 | 17.1 | Fair | |
| Toledo, Ohio, | 29.04 | 737.6 | 29.73 | 755.1 | 38 | 3.3 | 63 | SW | 8 | 3.6 | | | 10n | | Calm | Inap. | Inap. | Light snow | |
| Tucson, Arizona | 27.55 | 699.8 | 30.10 | 764.5 | 56 | 13.3 | 74 | SE | 3 | 1.3 | | 5k | 2s | S | S | 0.42 | 10.7 | Cloudy | |
| Umatilla, Oregon | 29.60 | 751.8 | 30.09 | 764.3 | 43.0 | 6.1 | 92 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Unalashka, Aleutian Islands | | | | | 33 | 0.6 | 89 | SW | | | 4 | | 10s | | SW | 0 | 0 | Cloudy | |
| Uvalde, Texas | 29.00 | 736.6 | 29.81 | 757.2 | 60 | 15.6 | 71 | NE | 8 | 3.6 | | 2ck | 0 | SW | | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.53 | 750.0 | 29.78 | 756.4 | 68 | 20.0 | 84 | SW | 9 | 4.0 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Virginia City, Montana | 24.31 | 617.5 | 29.79 | 756.7 | 35 | 1.7 | 53 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Visalia, California | 29.50 | 749.3 | 29.87 | 758.7 | 54.5 | 12.5 | 86 | NE | 4 | 1.8 | | | 10s | | Calm | 0.16 | 4.1 | Cloudy | |
| Washington, D. C. | 29.69 | 751.6 | 29.71 | 754.6 | 40 | 4.4 | 81 | NW | 13 | 5.8 | | 2ck | 0 | NW | | 0 | 0 | Fair | |
| Wickenburg, Arizona | | | | | 59 | 15.0 | 82 | SE | | | 2 | | 10ks | | SE | 0.21 | 5.3 | Cloudy | |
| Wilmington, N. Carolina | 29.79 | 756.7 | 29.87 | 758.7 | 47 | 8.3 | 48 | W | 2 | 0.9 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Winnemucca, Nevada | 25.46 | 646.7 | 29.82 | 757.4 | 51 | 10.6 | 34 | E | 9 | 4.0 | | 10k | 0 | S | | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 28.97 | 735.8 | 29.01 | 736.8 | 33 | 0.6 | 79 | NW | 44 | 19.7 | | | 10ks | | NW | 0.18 | 4.6 | Cloudy | |
| Yankton, Dakota | 28.94 | 735.1 | 30.33 | 770.4 | 22 | — 5.6 | 58 | N | 12 | 5.4 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Yuma, Arizona | 29.75 | 755.6 | 29.92 | 760.0 | 60 | 15.6 | 55 | SE | 4 | 1.8 | | | 8s | | S | 0.38 | 9.7 | Cloudy | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.34 | 719.8 | 29.75 | 755.6 | 45 | 7.2 | 76 | | | | | | | | | | | | J. B. Gordon. |
| Havana, Cuba, W. I | 29.95 | 760.7 | 30.00 | 762.0 | 69 | 20.6 | 60 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | | | | | | | | | | | | | | | | | | | James Gall. |
| Medellin, Colombia, S. A | 25.22 | 640.6 | | | 66.5 | 19.2 | 82 | Calm | 0 | 0 | | 4cs | 3ks | | | 0.05 | 1.3 | | Thomas Herran. |
| Navassa, W. I | 29.93 | 760.2 | 30.01 | 762.2 | 78 | 25.6 | | NE | 6.2 | 2.8 | | | | | | 0 | 0 | Partly cl'dy. | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.06 | 763.5 | 30.06 | 763.5 | 80 | 26.7 | 87 | NE | | | 2 | 8ks | 8n | E | | 0 | 0 | Cloudy | C. J. Hering. |
| Santiago de Cuba, W. I | | | | | | | | | | | | | | | | | | | Robert Mason. |
| St. Thomas, W. I | | | | | | | | | | | | | | | | | | | G. O. Gellich. |
| York Factory, B. A | 29.39 | 746.5 | 29.45 | 748.0 | —18.0 | —27.8 | 68 | N | 14 | 6.3 | | 2k | 0 | N | | 0.7 | 17.8 | Fair | J. Fortesone & W. Wood |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,022 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,886 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.855 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.80 | 756.9 | 56 | 13.3 | 54 | 12.2 | 100 | Calm | 0 | 0 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Pensacola, Fla. | 30.00 | 762.0 | 68 | 20.0 | 68 | 20.0 | 90 | WSW | 7 | 3.1 | ..... | ..... | 5 | ..... | WSW | 0.19 | 4.8 | ..... | ..... | Fair..... | |
| Navy Yard, Portsmouth, N.H | 28.99 | 736.3 | 53 | 11.7 | 28 | — 2.2 | 81 | NW | 8 | 3.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Naval Hospital, Yokohama, Japan.....*. | 30.00‡ | 762.0‡ | ..... | ..... | 58.8 | 14.9 | 85 | SW | ..... | ..... | 3 | ..... | 8cs;d | ..... | SSW | 0 | 0 | ..... | ..... | Threatening | |
| Adams, Panama ..... | 29.97 | 761.2 | 79 | 26.1 | 77 | 25.0 | 91 | NW | ..... | ..... | 3 | ..... | 8 | ..... | NW | ..... | ..... | ..... | ..... | Fair..... | |
| Alaska, N. 53° 25′, W. 129° 30′..... | 29.88‡ | 758.9‡ | ..... | ..... | 43 | 6.1 | 83 | WNW | ..... | ..... | 4 | ..... | 2 | ..... | SE | 0 | 0 | Smooth | ..... | D. clouds..... | |
| Alliance, N. 41° 07′, E. 12° 19′..... | 30.12‡ | 765.0‡ | ..... | ..... | 59 | 15.0 | 82 | SE | ..... | ..... | 3-4 | ..... | 3 | ..... | S;E | ..... | ..... | ..... | ..... | Clear..... | |
| Ashuelot, Hong-Kong, China. ...*. | 29.83‡ | 757.7‡ | ..... | ..... | 71 | 21.7 | 90 | ESE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Misty..... | |
| Canonicus, New Orleans, La.....*. | 29.89 | 759.2 | 50 | 10.0 | 69 | 20.6 | 100 | SW | ..... | ..... | 2 | ..... | 5 | ..... | SW | ..... | ..... | ..... | ..... | Foggy ..... | |
| Colorado, New York, N. Y..... | 29.41 | 747.0 | 42 | 5.6 | 39 | 3.9 | ..... | WNW | 22 | 9.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Squally..... | |
| Constitution Lisbon, Portugal..... | 30.06‡ | 763.5‡ | ..... | ..... | 56 | 13.3 | 57 | NNW | ..... | ..... | 5 | ..... | 4 | ..... | Calm | ..... | ..... | ..... | ..... | Pleasant..... | |
| Despatch, Genoa, Italy..... | 30.08‡ | 764.0‡ | ..... | ..... | 62 | 16.7 | 72 | SE | ..... | ..... | 2 | ..... | 5 | ..... | SE | ..... | ..... | Smooth | ..... | Fair..... | |
| Franklin, Norfolk, Va.....*. | 29.89 | 759.2 | 64 | 17.8 | 46 | 7.8 | 100 | WNW | 13 | 5.8 | ..... | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Overcast..... | |
| Gettysburg, Genoa, Italy ..... | 30.00‡ | 762.0‡ | ..... | ..... | 62 | 16.7 | 83 | SE | ..... | ..... | 3 | ..... | 5 | ..... | S;E | 0 | 0 | ..... | ..... | Fair..... | |
| Hartford, Montevideo, Uruguay.*. | 30.28 | 769.1 | 68 | 20.0 | 68 | 20.0 | 65 | ENE | ..... | ..... | 4 | ..... | 10 | ..... | NE | 0.01 | 0.3 | Smooth | ..... | Cloudy..... | |
| Michigan, Erie, Pa.....†. | 29.86‡ | 758.4‡ | ..... | ..... | 34 | 1.1 | 90 | SW | ..... | ..... | 3 | ..... | 8 | ..... | W | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monocacy, Shanghai, China.....*. | 29.71‡ | 754.6‡ | ..... | ..... | 67 | 19.4 | 79 | SSE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monongahela Yokohama, Japan .....*. | 29.95‡ | 760.7‡ | ..... | ..... | 61 | 16.1 | 77 | SSE | ..... | ..... | 2-3 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C.....*. | 30.31 | 769.9 | 59 | 15.0 | 56 | 13.3 | 100 | SW | 5 | 2.2 | ..... | ..... | 2 | ..... | NW | ..... | ..... | ..... | ..... | Clear..... | |
| Onward, Callao, Peru.....†*. | 30.04 | 763.0 | ..... | ..... | 60 | 15.6 | 95 | SSE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Long | W | Fair..... | |
| Palos, Tientsin, China.....*. | 29.62 | 752.3 | 54 | 12.2 | 52 | 11.1 | 86 | N | ..... | ..... | 2 | ..... | 2 | ..... | NE | ..... | ..... | ..... | ..... | Clear. ..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 42 | 5.6 | 75 | WNW | ..... | ..... | 3 | ..... | 5 | ..... | ESE | ..... | ..... | ..... | ..... | Fair..... | |
| Pensacola, Valparaiso, Chili..... | 30.00‡ | 762.0‡ | ..... | ..... | 62 | 16.7 | 83 | E | 1 | 0.4 | ..... | ..... | 8 | ..... | SE | 0 | 0 | Smooth | N | Fair..... | |
| Plymouth, N. 39° 40′, W. 70° 35′..... | 29.34‡ | 745.2‡ | ..... | ..... | 34 | 1.1 | 100 | WNW | ..... | ..... | 6-8 | ..... | 0 | ..... | ..... | ..... | ..... | Heavy | SE | Squally..... | |
| Powhatan, Norfolk, Va..... | 29.77‡ | 756.1‡ | ..... | ..... | 47 | 8.3 | 48 | WSW | ..... | ..... | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Quinnebaug, Malaga, Spain..... | 29.95‡ | 760.7‡ | ..... | ..... | 66 | 18.9 | 68 | WNW | ..... | ..... | 6 | ..... | 8 | ..... | W | ..... | ..... | ..... | ..... | Fair..... | |
| Ranger. Amoy, China..... | 29.78‡ | 756.4‡ | ..... | ..... | 70 | 21.1 | 90 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | NW | Clear. ..... | |
| Richmond, N. 13° 36′, E. 55° 20′..... | 29.90‡ | 759.4‡ | ..... | ..... | 82 | 27.8 | 75 | ENE | ..... | ..... | 1 | ..... | 2 | ..... | E | 0 | 0 | Smooth | SE | Fair..... | |
| Rio Bravo, Brownsville, Texas..... | 29.72 | 754.9 | 75 | 23.9 | 75 | 23.9 | 95 | SW | ..... | ..... | 1 | ..... | 5 | ..... | SW | ..... | ..... | ..... | ..... | Fair .. ..... | |
| Santee, Annapolis, Md... ..... | 29.69‡ | 754.1‡ | ..... | ..... | 43 | 6.1 | 43 | NW | ..... | ..... | 3 | ..... | 2 | ..... | W | 0 | 0 | ..... | ..... | Clear..... | |
| Saratoga, Hampton Roads, Va..... | 29.77‡ | 756.1‡ | ..... | ..... | 46 | 7.8 | 62 | W | ..... | ..... | 3 | ..... | 8 | ..... | SSE | Slight | Slight | ..... | ..... | D. clouds..... | |
| St. Louis, League Island, Pa..... | 29.59‡ | 751.6‡ | ..... | ..... | 40 | 4.4 | 52 | NNW | 35 | 15.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Supply, New York, N. Y..... | 29.40‡ | 746.7‡ | ..... | ..... | 39 | 3.9 | 68 | WNW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Trenton. Genoa, Italy.....*. | 30.09‡ | 764.3‡ | ..... | ..... | 65 | 18.3 | 58 | SE | ..... | ..... | 2 | ..... | 8 | ..... | S;E | 0 | 0 | Mod'ate | S | Cloudy..... | |
| Tuscarora, Chipequa Bay, Mexico. | 29.85‡ | 758.2‡ | ..... | ..... | 74 | 23.3 | 72 | W | ..... | ..... | 1 | ..... | 10 | ..... | Calm | 0 | 0 | Smooth | ..... | Overcast .... | |
| Vandalia, Boston, Mass.....†. | 29.35‡ | 745.5‡ | ..... | ..... | 34 | 1.1 | 66 | NW | ..... | ..... | 3-6 | ..... | 10 | ..... | SE | ..... | ..... | ..... | ..... | Squally..... | |
| Wabash, Boston, Mass..... | 29.01‡ | 736.8‡ | ..... | ..... | 30 | — 1.1 | 90 | NW | 5 | 2.2 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Wyoming, Alexandria, Egypt.....* | 30.12‡ | 765.0‡ | ..... | ..... | 62 | 16.7 | 83 | WNW | ..... | ..... | 3-6 | ..... | 5 | ..... | NW | ..... | ..... | Mod'ate | NW | Fair ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | |
| S. S. Colima, N. 12° 12′, W. 87° 58′...† | | 29.99‡ | 761.7‡ | 80 | 26.7 | | E | | | 4 | | 7 | | W | 0 | Mod'ate | E | Misty | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota, Capt. H. G. Morse, N. 40° 07′, W. 124° 26′..†* | | 29.‡90 | 759.4‡ | | | | NW | | | 2 | | 10 | | | 0 | Mod'ate | NW | Hazy | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, S. 5° 10′, W. 167° 50′ | | 29.82‡ | 757.4‡ | | | | NNE | | | 2 | | 8 | | SE | | Long; slow | SE | Fine | R. C. Ghest, 1st Officer |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic, N. 47° 55′, W. 37° 00′ | | 30.13 | 765.3 | 52 | 11.1 | | SE | | | 4 | | 1 | | SSE | | Confused | E | Fair | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. *The error of the barometer is not known.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, N. 42° 30′, E. 169° 07′ | | 29.96‡ | 761.0‡ | 38 | 3.3 | 83 | E | | | 4 | | k | | NE | 0 | Rough | N | D. clouds | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 23° 52′, E. 117° 48′ | | 29.69‡ | 754.1‡ | 70 | 21.1 | 80 | Var. | | | 2 | | Fog | | | 0 | Smooth | | Foggy | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, N. 35° 40′, W. 170° 50′ | | 30.30‡ | 769.6‡ | 57 | 13.9 | .100 | SSE | | | 5 | | 0 | | | | 2 | SW | Blue sky | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andresen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 24° 22′, W. 88° 41′ | | 30.08‡ | 764.0‡ | 78.0 | 25.6 | 78 | SE | | | 3 | | 1 | | | 0 | Small | SE | Clear | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 40° 25,′ W. 62° 43′ | * | 28.79‡ | 731.3‡ | | | | SW | | | 8 | | 10 | | SW | | Long | SSW | Light rain | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 38° 57′, W. 72° 07′ | | 29.40‡ | 746.7‡ | 38 | 3.3 | | WNW | | | 8 | | 1 | | WNW | Heavy | Heavy | WNW | Clear | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher, & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| Peruvian, N. 51° 40′, W. 34° 00′ | | 30.08‡ | 764.0 | 50 | 10.0 | 86 | SSW | | | 3 | | 2 | | S | | Mod'ate | SW | Clear | J. Powell, 4th Officer. |
| **MARINE SERIES.** (Miscellaneous.) | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller, Hyannis Harbor, Mass. | | 29.00‡ | 736.6‡ | 34 | 1.1 | 74 | WNW | 26 | 11.2 | | | 10s | | NW | 1.44 | 36.6 | | Overcast | Capt. James Jorgensen. |
| Brigantine "George," of Halifax, N. 38° 38′, W. 69° 40′ | | | | 38 | 3.3 | | W | | | 12 | | 0 | | | | Heavy; cross | | Clear | Willard N. Pratt. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. Correction for temperature and elevation applied at this office.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

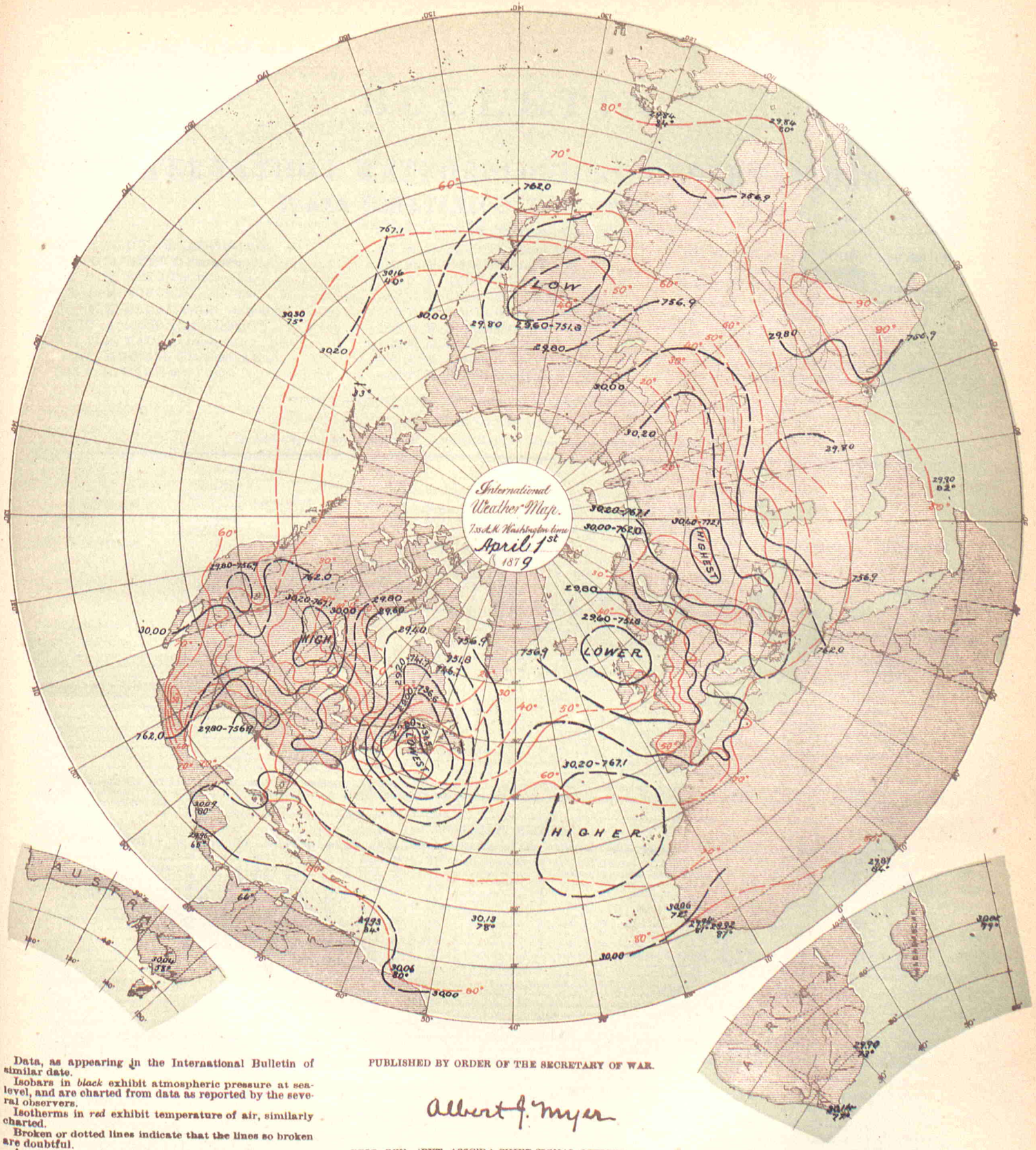
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$,) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 2, 1879.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

**7:35 A. M., WASHINGTON Mean Time.**

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGEGIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer, corrected for instru'm'tal error and temperature. Inches. | Barometer, corrected for instru'm'tal error and temperature. Millimeters. | Barometer, reduced to sea-level. Inches. | Barometer, reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 30.06 | 763.6 | 62.2 | 16.8 | 78 | WNW | | | 1 | | 2 | | | 0 | 0 | Fair | Kesxuche. |
| Algiers | | | 29.86 | 758.4 | 62.2 | 16.8 | 56 | WSW | | | 0 | | 0 | | | 0.256 | 6.5 | Clear | Tourilliere. |
| La Calle | | | 29.89 | 759.2 | 62.6 | 17.0 | 73 | NNW | | | 3 | | 8 | | | 0 | 0 | Very cloudy | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 29.93 | 760.2 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 30.04 | 762.9 | 51.8 | 11.0 | 43 | W | | | 3 | | 10 | | | 0 | 0 | Covered | Herbin. |
| Tebessa | | | 29.93 | 760.3 | 60.4 | 16.8 | 62 | W | | | 3 | | 5 | | | 0 | 0 | Cloudy | Watrin. |
| Geriville | | | 29.97 | 761.3 | 55.8 | 13.2 | 85 | N | | | 5 | | 5 | | | 0 | 0 | Cloudy | Brugniaux. |
| Laghouat | | | 30.00 | 762.1 | 58.6 | 14.8 | 37 | NW | | | 3 | | 0 | | | 0 | 0 | Clear | Bertrand. |
| Biskra | | | 29.91 | 759.8 | 71.8 | 22.1 | 25 | NW | | | 5 | | 0 | | | 0 | 0 | Clear | Chanvaux. |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.24 | 742.7 | 29.77 | 756.2 | 67.8 | 19.9 | 35 | SW | | | 3 | | 4 | | | 0 | 0 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 28.98 | 736.0 | 29.72 | 754.9 | 65.8 | 18.8 | 52 | SE | | | 2 | | 5 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 28.96 | 735.6 | 29.83 | 757.6 | 67.4 | 14.1 | 59 | S | | | 3 | | 3cs | | | 0 | 0 | | Julius Mikolik. |
| Gratz | 28.48 | 723.3 | 29.69 | 754.1 | 64.2 | 17.9 | 40 | SW | | | 4 | | 4 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.45 | 722.5 | 29.84 | 758.0 | 62.6 | 17.0 | 41 | SE | | | 3 | | 0 | | | 0 | 0 | | Prof. A. Gottschling. |
| Kremsmünster | 28.21 | 716.4 | 29.48 | 748.9 | 65.3 | 18.5 | 53 | NE | | | 3 | | 4 | | | 0 | 0 | | Prof. C. Wagner. |
| Lemberg | 28.89 | 733.9 | 29.88 | 759.0 | 51.3 | 10.7 | 69 | SE | | | 1 | | 0 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 29.68 | 753.9 | 29.79 | 756.7 | 58.5 | 14.7 | 75 | SE | | | 6 | | 3 | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.44 | 747.8 | 29.89 | 759.3 | 65.5 | 18.6 | 44 | NE | | | 2 | | 3 | | | 0 | 0 | | Julius Csics, S. J. |
| Szegedin | 29.56 | 750.8 | 29.83 | 757.7 | 64.4 | 18.0 | 73 | S | | | 3 | | 4 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 29.72 | 754.9 | 29.82 | 757.5 | 61.0 | 16.1 | 74 | W | | | 1 | | 3 | | | 1.303 | 33.1 | | P. Busin. |
| Vienna | 28.91 | 734.2 | 29.59 | 751.6 | 70.3 | 21.3 | 40 | S | | | 1 | | 0 | | | 0 | 0 | | I. R. Central Met. Obs'y |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | |
| Brussels | 29.45 | 748.0 | 29.65 | 753.1 | 46.4 | 8.0 | 72 | NW | | | 1 | | 10 | | | | | | Prof. M. Passau. |
| Furnes | 29.62 | 752.4 | 29.65 | 753.0 | 47.3 | 8.5 | 85 | WNW | | | 1 | | 10 | | NW | 0.411 | 10.45 | | Royal Observatory. |
| Maeseyck | 29.53 | 750.0 | 29.65 | 753.2 | 47.1 | 8.4 | 80 | N | | | 2 | | 10 | | | 0 | 0 | | M. E. de Cae. |
| | | | | | | | | | | | | | | | | 0.307 | 7.8 | | M. Pierrot. |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0; instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m., Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Reduced to sea-level. Inches. | Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Upper 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.47 | 748.5 | 29.57 | 751.1 | 41.6 | 5.3 | ..... | SE | 9 | 4.0 | ..... | ..... | 6 | ..... | ..... | 0.020 | 0.51 | Showery..... | W. Boswell. |
| Ardrossan | 29.56 | 750.8 | 29.57 | 751.1 | 46 | 7.8 | ..... | WNW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.61 | 752.1 | 49.0 | 9.4 | ..... | SW | 6 | 2.7 | ..... | ..... | 4 | ..... | ..... | Blank | Blank | D. clouds..... | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.60 | 751.8 | 44.3 | 6.8 | ..... | WNW | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.55 | 750.6 | 46.9 | 8.3 | ..... | NW | 6 | 2.7 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy..... | Thomas Mackereth. |
| Bradford, Yorkshire | 29.16 | 740.7 | 29.56 | 750.8 | 48.1 | 8.9 | ..... | W | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | D. clouds..... | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.99 | 761.7 | 30.02 | 762.5 | 83 | 28.3 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.58 | 751.3 | 55.1 | 12.8 | ..... | S | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded.... | H. Todd. [C. |
| Cardington | ..... | ..... | 29.58 | 751.3 | 53.0 | 11.7 | ..... | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | John McLaren. |
| Chatham, School M. E. | 29.50 | 749.3 | 29.63 | 752.6 | 50.1? | 10.1? | ..... | SW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.09 | 713.5 | 29.56 | 750.8 | 44.0 | 6.7 | ..... | E | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | Gloomy..... | Alexander Watt. |
| Donaghadee | 29.57 | 751.1 | 29.61 | 752.1 | 46 | 7.8 | ..... | SW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.59 | 751.6 | 29.61 | 752.1 | 45 | 7.2 | ..... | W | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | ½ clouded... | J. Costello. |
| Falmouth Observatory | 29 39 | 746.5 | 29.62 | 752.3 | 48.0 | 8.9 | ..... | NNW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| Fort Napier, (Natal) | 27.62 | 701.5 | 29.93 | 760.2 | 75.4 | 24.1 | ..... | E | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.69 | 754.1 | 29.92 | 760.0 | 87 | 30.6 | ..... | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's college | ..... | ..... | 29.61 | 752.1 | 42 | 5.6 | ..... | WNW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Hailing..... | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 30.03 | 762.8 | 30.09 | 764.3 | 56.7 | 13.7 | ..... | W | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Sergt. Wm. Allen, A. H. |
| Glasgow Observatory | 29.35 | 745.5 | 29.55 | 750.6 | 47.9 | 8.8 | ..... | WSW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | D. G. Maclean. [C. |
| Great Yarmouth | 29.61 | 752.1 | 29.61 | 752.1 | 44 | 6.7 | ..... | SSE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Misty..... | G. T. Watson. |
| Greenwich Royal Obs'y | 29.44 | 747.8 | 29.61 | 752.1 | 54.5 | 12.5 | ..... | SW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | The staff, for G.B.Airy. |
| Guernsey | 29.35 | 745.5 | 29.57 | 751.1 | 49 | 9.4 | ..... | SSE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S.E.Hoskins, F.R.S. |
| Helston | 29.69 | 754.1 | 29.71 | 754.6 | 51 | 10.6 | ..... | N | ..... | ..... | 2 | ..... | 2ck | ..... | ..... | 0 | 0 | Very fine..... | M. P. Moyle. |
| Holyhead | 29.57 | 751.1 | 29.63 | 752.6 | 44 | 6.7 | ..... | NNW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | John Tilston. |
| Jersey | 29.32 | 744.7 | 29.61 | 752.1 | 49.5 | 9.7 | ..... | SSE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | J. Fisher. |
| Kew, Observatory | 29.58 | 751.3 | 29.61 | 752.1 | 48.5 | 9.2 | ..... | W | 8 | 3.6 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | The Meteorological Of. |
| Leicester, Museum | 29.33 | 745.0 | 29.58 | 751.3 | 50.0 | 10.0 | ..... | SW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.88 | 758.9 | 29.95 | 760.7 | 65 | 18.3 | ..... | SE | ..... | ..... | 3 | ..... | 2k | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.44 | 747.8 | 29.54 | 750.3 | 46 | 7.8 | ..... | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.00 | 762.0 | 76.8 | 24.9 | ..... | SW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.39 | 746.5 | 29.58 | 751.3 | 53.1 | 11.7 | ..... | Calm | ..... | ..... | 0 | ..... | 10k | ..... | SSE | 0 | 0 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.05 | 737.9 | 29.58 | 751.3 | 46.1 | 7.8 | ..... | N | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.60 | 751.8 | 48 | 8.9 | ..... | NW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | H. E. Bellamy. |
| Plymouth | 29.51 | 749.5 | 29.59 | 751.6 | 48.4 | 9.1 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Merrifield. |
| Roche's Point | 29.62 | 752.3 | 29.69 | 754.1 | 47 | 8.3 | ..... | NNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded... | Wm. Kennedy, |
| Saint Ann's Head | 29.45 | 748.0 | 29.61 | 752.1 | 46 | 8.9 | ..... | NNW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 42 | 5.6 | ..... | SW | 7 | 3.1 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | Showery..... | Rev O.Clouston, L.L.D. |
| Scutari, Cemetery, (Turkey) | 30.03 | 762.8 | 30.10 | 764.5 | 62.6 | 11.4 | ..... | NE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | W. H. Lyne. |
| Sheffield | 29.30 | 744.2 | 29.58 | 751.3 | 54.1 | 12.3 | ..... | W | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.03 | 0.8 | Overcast..... | W. F. Cooper. |
| Silloth Rectory | 29.58 | 751.3 | 29.61 | 752.1 | 46.0 | 7.8 | 80 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.18 | 741.2 | 29.59 | 751.6 | 49.0 | 9.4 | ..... | W | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.39 | 746.5 | 29.61 | 752.1 | 50.1 | 10.1 | ..... | SW | ..... | ..... | 0–1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | C. H. Griffith, F. M. S. |
| Thurso | 29.49 | 749.0 | 29.55 | 750.6 | 42 | 5.6 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | John Trotter. |
| Truro, Royal Institution | 29.61 | 752.1 | 29.66 | 753.4 | 52 | 11.1 | ..... | NW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | 29.67 | 753.6 | 29.70 | 754.4 | 46.6 | 8.1 | ..... | WNW | 11 | 4.9 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | The Meteorological Of. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.03 | 762.8 | 30.07 | 763.8 | 83.8 | 28.8 | 40 | S | 25 | 11.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.72 | 754.9 | 57.0 | 13.9 | 88 | E | ..... | ..... | 2 | ..... | 10k | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.57 | 751.1 | 46.6 | 8.1 | ..... | W | ..... | ..... | 2 | ..... | 10k | ..... | ..... | 0 | 0 | Cloudy..... | Andrew Gibb. |
| Mauritius, Observatory | 29.81 | 757.2 | 30.00 | 761.9 | 79.2 | 26.2 | 70 | ESE | 15.0 | 6.7 | ..... | 0 | 2 | ..... | ESE | 0.01 | 0.2 | Fine..... | C. Meldrum. |
| Melbourne, Observatory | 29.98 | 761.5 | 30.07 | 763.8 | 60.0 | 15.6 | 62 | WSW | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Dull..... | R. L. J. Ellery. |
| Monach Lt-house, (Hebrides) | ..... | ..... | 29.55 | 750.6 | 42 | 5.6 | ..... | SW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.64 | 752.8 | 44 | 6.7 | ..... | S | ..... | ..... | 2 | 5 | 8 | Calm | ..... | ..... | ..... | ..... | Robert Burnet. |

Note—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Reduced to sea-level. Inches. | Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Upper 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 41° 00′, E. 29° 00′ | ..... | ..... | 30.12‡ | 765.0‡ | 61.5 | 16.4 | N | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. W. J. L. Wharton. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| S. S. Amanda, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Barque Belle-Isle, N. 42° 33′, W. 32° 07′ | ..... | ..... | 30.08‡ | 764.0‡ | 59 | 15.0 | SSE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 2 | wsw | Drizzling..... | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra, N. 45° 52′ W. 28° 46′ | ..... | ..... | 30.11‡ | 764.8‡ | 56 | 13.3 | SSE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Capt. Thos. Young. |
| Barque Commewyne, N. 51° 18′, W. 6° 54′ | ..... | ..... | 29.67‡ | 753.6‡ | 45 | 7.2 | N | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. A. Buchan. |
| Barque Fedalina, N. 16° 55′, W. 47° 00′ | ..... | ..... | 30.12 | 765.0 | 78 | 25.6 | ENE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 2 | SE | Showery..... | Capt. H. L. Fox. Capt. E. W. Turner. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| S. S. Nizam, N. 10° 22′, E. 109° 38′ | ..... | ..... | 29.81‡ | 757.2‡ | 80 | 26.7 | Var. | ..... | ..... | 1 | ..... | 3k | ..... | ENE | ..... | ..... | D. clouds..... | Capt. Barlow. |
| S. S. Strathleven, N. 38° 04′, W. 9° 30′ | ..... | ..... | 29.97‡ | 761.2‡ | 54 | 12.2 | WNW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy..... | Capt. C. W. Pearson. Capt. W. R. McMontry. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | Millimeters. | Reduced to sea-level. Inches. | Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | Velocity Miles per hour. | Meters per second. | Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | Low'r 0—10. | Direction. Upper. From— | Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | | | | | | | | | | | | | | | | | | | Mr. Ansart. |
| San José | 26.25 | 666.7 | 29.97 | 761.2 | 68.9 | 20.5 | | SE | | | 1 | 8c;k;ks | | | | 1.9 | 48. | | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.6 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.60 | 749.3 | 29.55 | 750.5 | 52.5 | 11.4 | 78 | S | | | 2 | | 2 | | | | | | |
| Fanöe | 29.51 | 749.5 | 29.53 | 750.0 | 40.5 | 4.7 | 98 | NE | | | 4 | | 10 | | | | | | |
| Godthaab, (Greenland) | 29.80 | 757.0 | 29.85 | 758.1 | 21.6 | — 5.8 | 87 | NNE | | | 6 | | 6 | | | | | | |
| Stykkisholm, (Iceland) | | | | | | | | | | | | | | | | | | | |
| Thorshavn, (Faröe) | 29.67 | 753.7 | 29.71 | 754.6 | 45.7 | 7.6 | 76 | Calm | | | 0 | | 3 | | | | | | |
| Vestervig | 29.41 | 747.1 | 29.58 | 751.4 | 37.4 | 3.0 | 98 | E | | | 2 | | 10 | | | | | Raining | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.09 | 738.9 | 29.64 | 752.9 | 49.6 | 9.8 | 95 | SW | | | 1 | | 5 | | SW | 0.362 | 9.2 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 29.61 | 752.2 | 29.72 | 755.0 | 51.8 | 11.0 | 75 | W | | | 3 | | 8 | | E | 0 | 0 | Very cloudy | Bonvallet, Director. |
| Avignon, Normal School | 29.54 | 750.4 | 29.62 | 752.4 | 45.0 | 7.2 | 83 | NW | | | 2 | | | | NW | 0.59 | 15. | | M. Giraud, Director. |
| Bar-sur-Seine | 29.06 | 738.2 | 29.63 | 752.5 | 45.9 | 7.7 | 77 | N | | | 1 | | 10 | | NE | 0.142 | 3.6 | Covered | C. Saillard, Director. |
| Beauvais, Normal School | 29.39 | 746.4 | 29.65 | 753.1 | 50.7 | 10.4 | 65 | E | | | 1 | | 10 | | | 0.177 | 4.50 | Covered | Frere Eugene Marie, Dir. |
| Besançon, Normal School | 28.68 | 728.4 | 29.57 | 751.0 | 47.8 | 8.8 | 77 | N | | | 2 | | 10 | | N | 0.04 | 1. | Covered | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.79 | 731.3 | 29.69 | 754.1 | 37.6 | 3.1 | 93 | NW | | | 3 | | n | W | NW | 0.51 | 13. | | M. Marlot, Director. |
| Bourges, Normal School | 29.07 | 738.4 | 29.62 | 752.4 | 48.9 | 9.4 | 86 | W | | | 1 | | 10sn | W | W | 1.043 | 26.5 | Raining | A. Waquet, Director. |
| Brest, Naval Observatory | 29.31 | 744.5 | 29.56 | 750.7 | 51.4 | 10.8 | 65 | N | | | 2 | | 8 | | N | 0.118 | 3.00 | Squally | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.28 | 743.6 | 29.69 | 754.1 | 54.0 | 12.2 | 63 | NW | | | 2 | | 5 | NW | NW | 0.51 | 13. | Cloudy | September, Director. |
| Caen, Normal School | 29.50 | 749.2 | 29.53 | 750.0 | 50.4 | 10.2 | 74 | S | | | 1 | | 8 | | S | 0.228 | 5.8 | Very cloudy | M. Lair, Director. |
| Chartres, Normal School | 29.03 | 737.3 | 29.59 | 751.6 | 49.3 | 9.6 | 95 | N | | | 1 | | 10 | | SE | 0.12 | 3. | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.30 | 744.2 | 29.62 | 752.4 | 43.2 | 6.2 | 82 | NW | | | 2 | | 8 | N | N | | | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.88 | 719.6 | 29.72 | 754.8 | 37.2 | 2.9 | 89 | NW | | | 1 | | 10 | | W | 0.370 | 9.4 | Raining | Alluard, Director. |
| Commercy, Normal School | 28.73 | 729.7 | 29.59 | 751.6 | 45.0 | 7.2 | 80 | NW | | | 1 | | 10 | | NW | 0 | 0 | Covered | Dr. Coulet, Director. |
| Commune de Gréasque* | 28.50 | 724.0 | 29.65 | 753.0 | 45.5 | 7.5 | 88 | SW | | | 1 | | 10 | | S | 0.35 | 9. | Covered | M. Kina, Director. |
| Grenoble, Normal School | 28.84 | 732.4 | 29.61 | 752.2 | 40.3 | 4.6 | 98 | NW | | | 4 | | 10n | | SW | 0.047 | 1.20 | Covered | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.42 | 747.2 | 29.63 | 752.6 | 52.2 | 11.2 | 71 | SSW | | | 1 | | 5 | | SW | 0.059 | 1.5 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.34 | 745.1 | 29.65 | 753.0 | 49.5 | 9.7 | 79 | S | | | 1 | | 5 | | SW | 0.230 | 5.85 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 28.64 | 727.5 | 29.55 | 750.6 | 42.6 | 5.9 | 88 | NW | | | 2 | | 10 | | N | 0.43 | 11. | Raining | Baudry, Director. |
| Lorient, Naval Observatory | 29.53 | 750.0 | 29.63 | 752.6 | 53.2 | 11.8 | 76 | WSW | | | 2 | | | | SW | 0 | 0 | | Lt T. Carré, Director. |
| Mâcon, Normal School | | | | | | | | | | | | | | | | | | | M. Galzin, Director |
| Marseilles, Observatory | | | 29.62 | 752.3 | 48.4 | 9.1 | 51 | W | | | 2 | | 10 | | | 0.421 | 10.70 | Very cloudy | The Staff. |
| Mirecourt, Normal School | 28.55 | 725.1 | 29.57 | 751.1 | 45.7 | 7.6 | 83 | NNW | | | 3 | | 10 | | SSE | 0 | 0 | Covered | M. Barbier, Director. |
| Nismes, Normal School | 29.37 | 746.1 | 29.58 | 751.4 | 46.4 | 8 | 75 | N | | | 4 | | 8 | | N | 1.555 | 39.5 | Very cloudy | Boyer, Director. |
| Privas, Normal School | 28.61 | 726.7 | 29.71 | 754.6 | 37.0 | 2.8 | 97 | S | | | 1 | | 10 | S | S | 1.69 | 43. | Rain & snow | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.72 | 627.9 | | | 26.8 | — 2.9 | 100 | NW | | | 2 | | 10 | | | 0.528 | 13.4 | Snow—fog | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.61 | 752.0 | 29.64 | 752.8 | 56.5 | 13.6 | 65 | W | | | 1 | | 5 | W | W | 0.04 | 1. | ⅛ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.56 | 750.8 | 29.65 | 753.0 | 51.8 | 11.0 | 63 | SE | | | 2 | | 5 | | S | 0.295 | 7.5 | Cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.57 | 751.0 | 29.60 | 751.8 | 54.7 | 12.6 | 57 | SE | | | 2 | | 5 | SE | SE | 0.039 | 1.00 | Cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.48 | 748.9 | 29.65 | 753.1 | 48.6 | 9.2 | 69 | NE | | | 1 | | | | NNE; NE | 0 | 0 | | E. Renou, Director. |
| Tarbes, Normal School | 28.64 | 727.4 | 29.71 | 754.5 | 57.2 | 14 | 47 | W | | | 2 | | 10 | | | 0 | 0 | Covered | T. Huguet, Director. |
| Toulouse, Observatory | 29.01 | 736.9 | 29.73 | 755.1 | 60.7 | 10.4 | 74 | NW | | | 2 | | 9 | | | 0.126 | 3.2 | Showery | M. Mercadier Julier. |
| Versailles Observatory | 29.15 | 740.4 | 29.64 | 752.9 | 47.1 | 8.4 | 83 | SE | | | 1 | | | | | 0 | 0 | | Dr. A. Bérnny, Director |
| Villefranche-sur-Saone, N.S. | 29.00 | 736.6 | 29.73 | 755.1 | 42.8 | 6 | 93 | S | | | 2 | | 10 | | S | 0 | 0 | Covered | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.91 | 759.8 | 29.94 | 760.5 | 79.2 | 26.2 | | | | | | | | | | 0.08 | 2. | | L'Abbé Marc ésl. |
| Lyons Obs'y, (Park Station) | 29.04 | 737.5 | 29.67 | 753.5 | 36.3 | 2.4 | 93 | WNW | | | 1 | | 10 | | NW | 1.028 | 26.1 | Rain & snow | Mr. Jays. |
| Mont-Louis | 24.67 | 626.5 | 29.98 | 761.5 | 34.2 | 1.2 | 76 | SW | 18.6 | 8.3 | | | 8 | | S | 0.336 | 8.5 | | M. Cave. |
| Nice | | | 29.66 | 753.3 | 56.8 | 13.8 | 89 | S | | | 1 | | 10 | | | 0.071 | 1.8 | | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.37 | 745.9 | | | 48.4 | 9.1 | 69 | SSE | | | 1 | | 10 | | | 0.075 | 1.9 | | Marié Davy, Director. |
| Perpignan | 29.58 | 751.2 | 29.68 | 753.9 | 51.4 | 10.8 | 63 | NE | 15.0 | 6.7 | | | 9 | | | 0.024 | 0.6 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.32 | 560.7 | | | 27.0 | — 2.8 | | NW | | | 3 | | 10 | | | 0.583 | 14.8 | Snowy | Gen'l de Nansouty. |
| Tours | 29.43 | 747.5 | 29.63 | 752.5 | 53.1 | 11.7 | 63 | SSE | | | 1 | | 10 | | SW | 0.122 | 3.1 | | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 29.60 | 751.7 | 29.61 | 752.3 | 54.7 | 12.6 | 96 | NNE | 16.8 | 7.5 | | | 10 | | | 0 | 0 | Covered | Marc Dechevrens. |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,686.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the cooperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–1. | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.72 | 729.5 | 29.55 | 750.6 | 61.0 | 16.1 | 56 | SW | | | 4 | | 3 | SW | | 0 | 0 | | Prof. Dr Hoh. |
| Berlin | 29.41 | 747.1 | 29.58 | 751.3 | 67.8 | 19.9 | 38 | S | | | 1 | | 4 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.14 | 740.1 | 29.66 | 753.4 | 65.1 | 18.4 | 47 | SE | | | 4 | | 1 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.08 | 738.7 | 29.50 | 749.2 | 57.6 | 14.2 | 63 | NE | | | 2 | | 10 | NE | | 0 | 0 | | Albert Senz. |
| Cassel | 28.86 | 735.6 | 29.56 | 750.8 | 59.4 | 15.2 | 67 | NNE | | | 5 | | 7 | W | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.46 | 748.3 | 29.62 | 752.4 | 46.6 | 8.1 | 74 | N | | | 4 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.20 | 741.8 | 29.57 | 751.0 | 61.6 | 16.4 | | NNE | | | 2 | | 6 | | | 0 | 0 | | Physical Society. |
| Freienwalde on the Oder | | | | | | | | | | | | | | | | | | | Assmann., M. D. |
| Friedrichshafen | 28.03 | 712.0 | 29.41 | 746.9 | 63.9 | 17.7 | 46 | SE | | | 5 | | 9 | SW | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.50 | 749.4 | 29.58 | 751.2 | 59.9 | 15.5 | 61 | SW | | | 3 | | 8ks | | | 0.008 | 0.2 | Fine | Captain F. Hegemann. |
| Kiel | 29.53 | 750.0 | 29.54 | 750.4 | 56.1 | 13.4 | 78 | SW | | | 2 | | 7 | | | 0.030 | 0.74 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.70 | 754.4 | 29.78 | 756.5 | 59.2 | 15.1 | 64 | SE | | | 5 | | 2 | | | 0 | 0 | | Prof. E Luther. |
| Köslin | | | 29.60 | 751.9 | 64.9 | 18.3 | | SE | | | 6 | | 0 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.14 | 740.2 | 29.55 | 750.5 | 68.2 | 20.1 | 41 | SSE | | | 3 | | 7 | | | 0 | 0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.78 | 756.5 | 29.83 | 757.7 | 51.4 | 10.8 | 72 | SE | | | 4 | | 9cs | | | | | | Skalweit. |
| Neufahrwasser | 29.72 | 754.9 | 29.74 | 755.3 | 65.5 | 18.6 | 46 | SSW | | | 4 | | 4 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.69? | 754.0? | 29.977 | 761.2? | 64.0 | 17.8 | 50 | SE | | | 5 | | 10 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.00 | 736.5 | 29.54 | 750.3 | 53.6 | 12.0 | 68 | N | | | 4 | | 10 | NE | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 28.57 | 725.7 | 29.48 | 748.7 | 63.1 | 17.3 | 55 | N | | | 3 | | 8 | N | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.04 | 737.7 | 29.56 | 750.8 | 51.8 | 11.0 | 63 | NW | | | 4 | | 10 | | | 0.174 | 4.42 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.02 | 711.8 | 29.46 | 748.3 | 66.7 | 19.3 | 33 | SE | 9 | 4 | | 5c | 0 | | | 0 | 0 | Fair | Dr. Van Bebber |
| Wustrow, Naval School | 29.52 | 749.8 | 29.54 | 750.4 | 59.5 | 15.3 | 65 | S | | | 1 | | 10ks | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.70 | 754.4 | 30.09 | 764.8 | 63.9 | 17.7 | | SW | | | 1.5 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the cooperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.80 | 757.0 | 29.85 | 758.3 | 81.3 | 27.4 | 48 | WSW | 12 | 5.4 | | | 3 | SW | | 0 | 0 | | D. clouds. |
| Deesa | 29.30 | 744.2 | 29.76 | 755.9 | 85.8 | 35.4 | 10 | NNW | 9 | 4.0 | | | 0 | | | 0 | 0 | | Blue sky. |
| Bombay | 29.73 | 755.1 | 29.77 | 756.1 | 84.1 | 28.9 | 64 | NW | 21 | 9.4 | | | 0 | | | 0 | 0 | | Blue sky. |
| Poona | | | | | | | | | | | | | | | | | | | |
| Lahore | 29.03 | 737.4 | 29.76 | 755.9 | 88.8 | 31.6 | 19 | W | 1.7 | 0.8 | | | 0 | | | 0 | 0 | | Blue sky. |
| Belgaum | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.83 | 732.2 | 29.71 | 754.6 | 87.8 | 31.0 | 21 | NW | 3.0 | 1.3 | | | 3 | | | 0 | 0 | | D. clouds. |
| Agra | 29.20 | 741.6 | 29.75 | 755.7 | 89.7 | 32.1 | 20 | W | | | | | | | | 0 | 0 | | |
| Nagpur | 28.70 | 729.0 | | | | | | N | 4.2 | 1.9 | | | | | | 0 | 0 | | Blue sky |
| Lucknow | 29.35 | 745.6 | 29.72 | 755.0 | 88.9 | 31.6 | 36 | WNW | 3.7 | 1.6 | | | 0 | | | 0 | 0 | | Blue sky. |
| Allahabad | 29.41 | 747.0 | 29.72 | 754.8 | 88.6 | 31.4 | 31 | NW | 3.8 | 1.7 | | | 0 | | | 0 | 0 | | Blue sky. |
| Patna | 29.50 | 749.2 | 29.68 | 753.7 | 89.2 | 31.8 | 26 | NW | 3.3 | 1.5 | | | 0 | | | 0 | 0 | | Blue sky. |
| Hazaribagh | 27.71 | 703.7 | 29.67 | 753.7 | 86.0 | 31.1 | 25 | WNW | 9.0 | 4.0 | | | 0 | | | 0 | 0 | | Blue sky. |
| Cuttack | 29.61 | 752.0 | 29.69 | 754.0 | 89.0 | 31.7 | 45 | S | 4.0 | 1.8 | | | 0 | | | 0 | 0 | | Blue sky. |
| Calcutta (Alipore) | 29.65 | 753.1 | 29.67 | 753.6 | 89.0 | 31.7 | 51 | SW | 3.0 | 1.3 | | | 1 | | | 0 | 0 | | Blue sky. |
| Goalpara | 29.21 | 741.8 | 29.68 | 753.4 | 92.0 | 33.3 | 16 | W | 2.7 | 1.2 | | | 0 | | | 0 | 0 | | Blue sky. |
| Chittagong | 29.72 | 754.9 | 29.81 | 757.2 | 84.4 | 29.1 | 81 | SSW | 5.2 | 2.3 | | | 0 | | | 0 | 0 | | Misty |
| Sibsagar | 29.26 | 743.3 | 29.69 | 754.6 | 87.0 | 30.6 | 58 | NE | 0.8 | 0.4 | | | 0 | | | 0 | 0 | | Blue sky |
| Jubbulpore | 28.40 | 721.3 | 29.73 | 755.2 | 91.0 | 32.8 | 11 | Calm | 4.3 | 1.9 | | | 0 | | | 0 | 0 | | Blue sky |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.50 | 749.2 | 29.91 | 759.7 | 59.4 | 15.2 | 62 | SE | 0.7 | 0.3 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.12 | 739.5 | 29.63 | 752.5 | 57.9 | 14.4 | 67 | ESE | ..... | ..... | 6 | ..... | 10 | SSE | ..... | 0.874 | 22.2 | ..... | Prof. Schiaparelli. |
| Padua | 29.09 | 754.1 | 29.80 | 756.9 | 57.0 | 13.9 | 83 | ENE | 15.4 | 6.9 | ..... | ..... | 10 | E | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.67 | 728.3 | 29.58 | 751.2 | 47.1 | 8.4 | 97 | NW | 6.3 | 2.8 | ..... | ..... | 10 | N | ..... | 1.969 | 50.0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.47 | 748.5 | 29.66 | 753.4 | 54.3 | 12.4 | 89 | SW | 16.1 | 7.2 | ..... | ..... | 10 | SE | ..... | 0.220 | 5.6 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.71 | 703.9 | 29.63 | 752.5 | 44.4 | 6.9 | 85 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 1.189 | 30.2 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.70 | 754 4 | 29.75 | 755.6 | 57.4 | 14.1 | 84 | E | 15.4 | 6.9 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.47 | 748.4 | 29.72 | 754.9 | 61.7 | 16.5 | 62 | S | ..... | ..... | 4 | ..... | 10 | SE | ..... | 0 | 0 | ..... | Cav. F. Meucci |
| Leghorn | 29.57 | 751.1 | 29.65 | 753.2 | 58.3 | 14.6 | 89 | ESE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.378 | 9.6 | ..... | Prof. P. Monte. |
| Rome | 29.60 | 751.8 | 29.78 | 756.3 | 64.9 | 18.3 | 55 | S | 23.0 | 10.3 | ..... | ..... | 10 | ..... | ..... | 0.362 | 9.2 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.74 | 755.3 | 29.99 | 761.8 | 61.7 | 16.5 | 55 | WSW | 26.2 | 11.7 | ..... | ..... | 7 | SW | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.60 | 750.6 | 29.88 | 759.0 | 67.8 | 19.9 | 78 | SE | 9.4 | 4.2 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.60 | 751.7 | 29.79 | 756.6 | 62.1 | 16.7 | 45 | W | ..... | ..... | 4 | ..... | 5 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.58 | 751.4 | 29.84 | 757.8 | 67.8 | 19.9 | 37 | N | 14.3 | 6.4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.85 | 758.1 | 29.92 | 760.0 | 63.9 | 17.7 | 91 | SSE | 8.7 | 3.9 | ..... | ..... | 10 | SE | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.34 | 745.1 | 29.89 | 759.2 | 62.6 | 17.0 | 68 | SE | 4.3 | 1.9 | ..... | ..... | 4 | ..... | ..... | 0.020 | 0.5 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 29.77 | 756.1 | 29.78 | 756.4 | 59.7 | 15.4 | 95 | N | 4.1 | 1.8 | ..... | ..... | 10n | ..... | ..... | 2.360 | 59.94 | Rainy | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.41 | 747.0 | 29.61 | 752.1 | 69.7 | 20.9 | 90 | S | 28.4 | 12.7 | ..... | ..... | 10s | ..... | S | 3.030 | 76.96 | Raining | S. Takahayashi. |
| Tokei (Yeddo) Observatory | 29.64 | 752.8 | 29.70 | 754.4 | 61.5 | 16.4 | 79 | S | 5.4 | 2.4 | ..... | ..... | 10s | ..... | ..... | 0.430 | 10.92 | Cloudy | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.04 | 636.1 | 30.21 | 767.2 | 44.6 | 7.0 | 46 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Fine | Prof. L. Perez. |
| Leon | 24.44 | 620.9 | 30.14 | 765.6 | 58.3 | 14.6 | 63 | SE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.13 | 587.5 | 30.21 | 767.4 | 50.0 | 10.0 | 78 | N | 2.2 | 1.0 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Very fine | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 47.5 | 8.6 | 51 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | M. V. de Leon, M. E. |
| Tlacotalpam | 29.95 | 760.7 | 29.96 | 761.0 | 78.1 | 25.6 | 78 | N | ..... | ..... | 8 | 8 | 0 | N | ..... | 0 | 0 | Cloudy | M. M. Chazaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.41 | 594.5 | 30.17 | 766.3 | 48.6 | 9.2 | 76 | N | 2.2 | 1.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.35 | 720.2 | 30.01 | 762.2 | 74.3 | 23.5 | 62 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.66 | 753.3 | 29.66 | 753.3 | 47.5 | 8.6 | ..... | W | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.256 | 6.5 | ..... | |
| Groningen | 29.51 | 749.6 | 29.57 | 751.0 | 43.7 | 6.5 | ..... | S | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.126 | 3.2 | ..... | |
| Helder | 29.61 | 752.1 | 29.61 | 752.1 | 39.7 | 4.3 | ..... | WNW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.012 | 0.3 | ..... | |
| Hellevoetsluis | 29.64 | 752.9 | 29.64 | 752.9 | 49.3 | 9.6 | 81 | W | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.60 | 751.7 | 29.64 | 752.9 | 49.1 | 9.5 | 73 | NW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.264 | 6.7 | Very cloudy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.57 | 751.1 | 29.63 | 752.5 | 42.4 | 5.8 | 79 | NW | 0.4 | 0.2 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.59 | 751.5 | 29.63 | 752.5 | 41.0 | 5.0 | 69 | SE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.50 | 749.4 | 29.65 | 753.2 | 38.8 | 3.8 | 77 | E | 7 | 3 | ..... | ..... | 10 | ..... | ..... | 0.035 | 0.9 | Foggy | |
| Tromsö | 29.63 | 752.5 | 29.67 | 753.6 | 31.3 | — 0.4 | 81 | Calm | 0 | 0 | ..... | ..... | 9 | ..... | ..... | 0.035 | 0.9 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.03 | 762.8 | 30.23 | 767.7 | 60.4 | 15.8 | 87 | W | 5.6 | 2.5 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.96 | 735.5 | 30.00 | 761.9 | 53.2 | 11.8 | 71 | SW | 15.4 | 6.9 | ..... | ..... | 6 | WNW | ..... | 0.130 | 3.3 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.19 | 766.8 | 30.28 | 769.0 | 62.6 | 17.0 | 56 | SW | 2.5 | 1.1 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.70 | 754.3 | 30.06 | 763.5 | 54.3 | 12.4 | 73 | WNW | 19.9 | 8.9 | ..... | ..... | 7 | W | ..... | 0.138 | 3.5 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.13 | 765.4 | 30.21 | 767.2 | 65.1 | 18.4 | 75 | E | 1.3 | 0.6 | ..... | ..... | 4 | ..... | ..... | 0.374 | 9.5 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from — | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| Duque da Terceira, Santiago, Cape Verd I. | ..... | ..... | 30.05 | 763.2 | 72.5 | 22.5 | ..... | NE | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 3 | ..... | D. clouds | C.C.da Fonseca Ferreira, Comd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pêdroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, St. Thomas, Gulf of Guinea. | ..... | ..... | 29.86 | 758.5 | 83.3 | 28.5 | ..... | N | ..... | ..... | 3 | ..... | 4 | ..... | N | 2 | SE | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto de S. Jose de Bissao, Senegambia | ..... | ..... | 29.91 | 759.7 | 80.6 | 27.0 | ..... | S | ..... | ..... | 3 | ..... | 9 | ..... | S | ..... | ..... | Overcast | A. Ferreira, 2d Lt. |
| Sá da Bandeira. Ambrizette, S.7° 13′, E. 12°52′ | ..... | ..... | 29.78 | 756.4 | 85.1 | 29.5 | ..... | SW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 2 | SW | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 29.97 | 761.2 | 73.6 | 23.1 | ..... | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | ..... | Blue sky | J. M T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.38 | 746.2 | 29.80 | 756.8 | 58.8 | 14.9 | 60 | SE | 13 | 6 | ..... | ..... | 2c | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.57 | 751.1 | 30.00 | 762.0 | 43.3 | 6.3 | 68 | S | 7 | 3 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Heavy clouds | Astronomical Obs. |
| Dorpat | 29.71 | 754.6 | 29.96 | 761.0 | 36.0 | 2.2 | 85 | SE | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light rain | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.03 | 762.7 | 30.04 | 763.1 | 33.1 | 0.6 | 68 | SSE | 22 | 10 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.60 | 749.3 | 30.16 | 766.1 | 37.6 | 3.1 | 59 | SE | 9 | 4 | ..... | ..... | 1k;ks;c | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Nikolaiev | 30.13 | 765.3 | 30.20 | 767.1 | 47.7 | 8.7 | 35 | ESE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.18 | 766.5 | 30.20 | 767.0 | 38.5 | 3.6 | 58 | NNE | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.74 | 755.5 | 30.32 | 770.2 | 33.4 | 0.8 | 41 | N | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.83 | 757.7 | 30.04 | 763.0 | 37.4 | 3.0 | 44 | NW | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.17 | 766.4 | 30.19 | 766.9 | 41.7 | 5.4 | 60 | SE | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.50 | 723 8 | 29.93 | 760.3 | 49.8 | 9.9 | 39 | NW | 31 | 14 | ..... | ..... | 7k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 29.95 | 760.7 | 29.87 | 758.6 | 29.8 | — 1.2 | 80 | NW | 16 | 7 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Capt. Wisganow. |
| Krotkowo* | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.78 | 756.4 | 30.06 | 763.5 | 37.0 | 2.8 | 46 | N | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Ekaterinburg | 29.18 | 741.1 | 30.18 | 766.5 | 35.6 | 2.0 | 45 | ESE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.48 | 748.8 | 29.72 | 754.8 | 48.2 | 9.0 | 87 | WNW | 13 | 6 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.24 | 717.2 | 29.76 | 755.8 | 68.0 | 20.0 | 73 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Teich, A. M. |
| Barnaul | 29.74 | 755.4 | 30.26 | 768.7 | 29.1 | — 1.6 | 69 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.12 | 765.1 | 30.46 | 773.4 | 2.3 | —16.5 | 46 | E | 2 | 1 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking, (China) | 29.98 | 761.6 | 30.13 | 765.2 | 41.0 | 5.0 | 60 | S | 9 | 4 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. Meteorological Obs. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Vladivostock | 29.85 | 758.3 | 29.95 | 760.8 | 30.9 | — 0.6 | 70 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.6 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.60 | 751.7 | 29.70 | 754.3 | 60.8 | 16 | 36 | WSW | 9.1 | 4.08 | ..... | ..... | 2k | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Directon |
| Bilbao, Met. Obs'y | 29.67 | 753.7 | 29.73 | 755.2 | 55.4 | 13.0 | 74 | W | 2.2 | 0.99 | ..... | ..... | 10 | ..... | ..... | 0.016 | 0.4 | Rainy | Prof. Manuel de Navera |
| Burgos, Met. Obs'y | 26.75 | 679.5 | ..... | ..... | 39.2 | 4.0 | 85 | NW | 9.8 | 4.39 | ..... | ..... | 9 | ..... | ..... | 0.138 | 3.5 | Raining | Domingo Martin y Perez |
| Madrid, Royal Oservatory | 27.59 | 700.7 | ..... | ..... | 36.3 | 2.4 | 66 | SW | 21.6 | 9.66 | ..... | 0 | 9 | ..... | ..... | 0 | 0 | Almost cov'd | The Staff. |
| Murcia, Met. Obs'y | 29.74 | 755.4 | 29.89 | 759.2 | 64.4 | 18.0 | 56 | SW | 4.9 | 2.17 | ..... | 4 | 3 | SE | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.91 | 734.2 | 29.82 | 757.3 | 46.6 | 8.1 | 87 | NW | 8.1 | 3.6 | ..... | ..... | 10 | ..... | ..... | 0.374 | 9.5 | Rainy | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.93 | 760.2 | 30.00 | 761.9 | 71.7 | 22.1 | 82 | SSE | 2.5 | 1.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.75 | 755.7 | 29.80 | 757.1 | 85.7 | 29.8 | 71 | ESE | 6.3 | 2.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.02 | 762 6 | 30.13 | 765.2 | 58.5 | 14.7 | 75 | W | 12.4 | 5.6 | ..... | 4 | 4 | W | W | 0.072 | 1.8 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I | 29.99 | 761.7 | 30.08 | 764.0 | 80.2 | 26.8 | 89 | E | 6.5 | 2.91 | ..... | 2c | 2k | E | E | 0.276 | 7.00 | Clear | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.75 | 755.7 | 29.79 | 756.7 | 33.1 | 0.6 | ..... | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.61 | 752.2 | 29.67 | 753.5 | 34.2 | 1.2 | 92 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.161 | 4.1 | ..... | |
| Hernosand | 29.57 | 751.0 | 29.62 | 752.3 | 39.9 | 4.4 | 77 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.606 | 15.4 | ..... | |
| Stockholm | 29.50 | 740.4 | 29.74 | 755.5 | 39.2 | 4.0 | 93 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.146 | 3.7 | ..... | |
| Wisby | 29.63 | 752.7 | 29.69 | 754.2 | 40.6 | 4 6 | 90 | SSW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.61 | 752.1 | 29.69 | 754.0 | 37.0 | 2.8 | 96 | SSE | 2.7 | 1.2 | ..... | ..... | 10 | ..... | ..... | 1.069 | 1.75 | Foggy ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.09 | 713.5 | 29.54 | 750.2 | 47.5 | 8.6 | 80 | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.008 | 0.2 | Raining..... | The Observatory. |
| Zurich | 27.84 | 707.2 | 29.46 | 748.2 | 60.8 | 16.0 | 53 | N | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0.008 | 0.2 | Bright..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —10.7 mm.; Thermometer,—1.5 Cent.; Relative Humidity, +22 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.14 | 765.5 | 49.3 | 9.6 | 62 | NE | 3 | 1.5 | ..... | ..... | 3 | ..... | WSW | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.20 | 767.0 | 70.3 | 21.0 | ..... | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 30.02 | 762.5 | 69.3 | 20.7 | ..... | S | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.86 | 758.4 | 29.97 | 761.3 | 67.8 | 19.9 | 58 | WSW | ..... | ..... | 2 | ..... | 2ks | ..... | SW | 0 | 0 | D. clouds.... | Prof. C. V. A. Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.88 | 758.9 | 29.95 | 760.7 | 27.9 | — 2.3 | 94 | W | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 1.42 | 36.1 | Overcast..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.26 | 743.2 | 29.57 | 751.1 | 25 | — 3.9 | ..... | W | 1 | 0.4 | ..... | ..... | 8s | ..... | W | 0 | 0 | Cloudy..... | W. R. Bigg. |
| *Chatham, N B | 28.91 | 734.3 | 28.97 | 736.8 | 25 | — 3.9 | 80 | SW | 15 | 6.7 | ..... | ..... | 10s | ..... | SW | 0.37 | 9.4 | Cloudy..... | G. A. Blair. |
| Charlottetown, P. E. Island | 28.99 | 736.3 | 29.03 | 737.3 | 28 | — 2.2 | 84 | SW | 24 | 10.7 | ..... | ..... | 10s | ..... | ..... | 0.070 | 1.78 | Cloudy ..... | H. J. Cundall, C. E |
| Cornwall, Ontario | 29.26 | 743.2 | 29.46 | 748.3 | 20.0 | — 6.7 | 64 | NW | ..... | ..... | 5 | ..... | 10s | ..... | ..... | Inap. | Inap. | Overcast..... | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 29.83 | 757.7 | 29.88 | 758.9 | 42.1 | 5.6 | 100 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | W. H. Bevis. |
| *Father Point, Quebec | 28.90 | 734.0 | 28.92 | 734.6 | 21 | — 6.1 | 93 | W | 50 | 22.4 | ..... | ..... | 10s | ..... | SW | 0.31 | 7.9 | Cloudy..... | J. McWilliams. |
| Fredericton, N. B | 29.10 | 739.1 | 29.16 | 740.7 | 23.0 | — 5.0 | 60 | NW | 17 | 7.6 | ..... | 0 | 8ks | ..... | ..... | 0 | 0 | Cloudy..... | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.59 | 751.6 | 30.54 | 775.7 | 6 | —14.4 | 100 | N | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0.260 | 6.60 | Clear ..... | James Stewart. |
| Granton, Ontario | 28.63 | 727.2 | 29.80 | 756.9 | 19 | — 7.2 | ..... | W | ..... | ..... | 2 | ..... | 10n | ..... | ..... | Inap. | Inap. | Snowing..... | James Grant. |
| *Halifax, N. S | 29.01 | 736.8 | 29.15 | 740.4 | 34 | 1.1 | 92 | W | 20 | 8.9 | ..... | 0 | 2ks | ..... | W | 0.113 | 2.88 | Fair ..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.35 | 745.5 | 29.74 | 755.4 | 26.7 | — 2.9 | 77 | SW | ..... | ..... | 1 | 10cs | 0 | SW | ..... | 0 | 0 | Cloudy..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.20 | 741.7 | 29.55 | 750.6 | 26 | — 3.3 | 88 | SW | 15 | 6.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.01 | 736.8 | 29.05 | 737.9 | 33.4 | 0.8 | 87 | W | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowy..... | C. H. Rigby. |
| Moose Factory, Ontario | 29.68 | 753.9 | 29.72 | 754.9 | — 2.0 | —18.9 | 97 | NW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | C. H. McLeod, C. E. |
| *Montreal, Quebec | 29.19 | 741.4 | 29.40 | 746.7 | 21 | — 6.1 | 71 | W | 28 | 10.3 | ..... | 8k | 2ks | ..... | ..... | 0.15 | 3.8 | Cloudy..... | Rev. R. Mosley. |
| *Parry Sound, Ontario | 28.97 | 735.8 | 29.71 | 754.6 | 16 | — 8.9 | 74 | NW | 12 | 5.4 | ..... | 2cs | 2ks | W | W | 0 | 0 | Fair ..... | J. F. Jeffers, B. A. |
| Peterboro, Ontario | 28.83 | 732.3 | 29.61 | 752.1 | 25.3 | — 3.7 | 59 | NW | ..... | ..... | 2 | 0 | 5ks | ..... | ..... | 0 | 0 | Fair ..... | H. Morgan. |
| Port Dover, Ontario | 29.04 | 737.6 | 29.76 | 755.9 | 23 | — 5.0 | 86 | W | 16 | 7.2 | ..... | 5k | 5n | W | ..... | Inap. | Inap. | Light snow.. | Peter Grant. |
| Port Hastings, N. S | 29.04 | 737.6 | 29.09 | 738.9 | 30.7 | — 0.7 | ..... | NW | 7 | 3.1 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine..... | Capt. Ashe, R. N |
| Port Stanley, Ontario | 29.13 | 739.9 | 29.81 | 757.2 | 29 | — 5.0 | 84 | W | 20 | 8.9 | ..... | ..... | 10n | ..... | W | Inap. | Inap. | Cloudy ..... | M. Payne. |
| *Quebec, Quebec | 28.87 | 733.3 | 29.21 | 741.9 | 13 | —10.6 | 81 | NW | ..... | ..... | 7 | 2c | 2s | NW | NW | 0.13 | 3.3 | Fair..... | Capt. Ashe, R. N |
| *Rockliffe, Ontario | 29.11 | 739.4 | 29.60 | 751.8 | 14 | —10.0 | 78 | NW | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Threatening | W. H. McIntyre. |
| St. Andrews, N. B | 29.15 | 740.4 | 29.20 | 741.7 | 29 | — 1.7 | 84 | NW | ..... | ..... | 4 | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear..... | Dr. Gove. |
| St. John, N. B | 29.01 | 736.8 | 29.18 | 741.2 | 26 | — 3.3 | 63 | SW | 24 | 10.7 | ..... | 1k | 0 | ..... | ..... | 0 | 0 | Fine..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.00 | 736.6 | 29.75 | 755.6 | 21 | — 6.1 | 82 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | ..... | 0.27 | 6.9 | Light snow. | K. Stewart. |
| Stayner, Ontario | 28.85 | 732.8 | 29.67 | 753.6 | 20 | — 6.7 | 84 | NW | 19 | 8.5 | ..... | ..... | 10n | ..... | NW | 0.06 | 1.5 | Light snow.. | R. J. Cole. |
| Stratford, Ontario | 28.38 | 720.8 | 26.74 | 755.4 | 19.4 | — 7.0 | 92 | NW | 17.5 | 7.8 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.00 | 736.6 | 29.04 | 737.6 | 33 | 0.6 | 84 | SW | 18 | 8.0 | ..... | ..... | 10n | ..... | W | 0.01 | 0.3 | Light snow. | T. C. Hill. |
| *Toronto, Ontario | 29.27 | 743.4 | 29.67 | 753.6 | 25 | — 3.9 | 91 | W | 17 | 7.6 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.3 | Light snow.. | Magnetic Observatory |
| Windsor, N. S | 29.06 | 738.1 | 29.15 | 740.4 | 30.0 | — 1.1 | 73 | W | 29 | 13.0 | ..... | 9k | 0 | ..... | ..... | 0 | 0 | Cloudy..... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | 28.93 | 734.8 | ..... | ..... | 43.0 | 6.1 | 100 | S | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 1.22 | 31.0 | Light rain... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.29 | 744.0 | 29.52 | 749.8 | 35 | 1.7 | 65 | NW | 17 | 7.6 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Alpena, Michigan | 29.17 | 740.9 | 29.87 | 758.7 | 10 | —12.2 | 79 | NW | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Atlanta, Georgia | 28.75 | 730.2 | 29.90 | 759.4 | 43 | 6.1 | 75 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | NW | 1.14 | 29.0 | Cloudy | |
| Atlantic City, New Jersey | 29.66 | 753.4 | 29.68 | 753.9 | 42 | 5.6 | 58 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Augusta, Georgia | 29.74 | 755.4 | 29.92 | 760.0 | 49 | 9.4 | 85 | NW | 2 | 0.9 | ..... | ..... | 10s | ..... | NW | 0.74 | 18.8 | Cloudy | |
| Baltimore, Maryland | 29.69 | 754.1 | 29.74 | 755.4 | 44 | 6.7 | 52 | W | 9 | 4.0 | ..... | 8k | 0 | NW | ..... | 0 | 0 | Fair | |
| Barnegat, New Jersey | 29.61 | 752 1 | 29.63 | 752.6 | 43 | 6.1 | 43 | NW | 19 | 8.5 | ..... | 1k | 0 | Calm | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 28.43 | 722.1 | 30.28 | 769.1 | 14 | —10.0 | 81 | NE | 16 | 7.2 | ..... | 0 | 5ks | ..... | NE | Inap. | Inap. | Fair | |
| Boerne, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Boise City, Idaho | 27.04 | 686.8 | 30.00 | 762.0 | 47 | 8.3 | 70 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boston, Massachusetts | 29.28 | 743.7 | 29.44 | 747.8 | 39 | 3.9 | 51 | W | 20 | 8.9 | ..... | 1k | 0 | W | ..... | 0 | 0 | Clear | |
| Brackettville, Texas | 29.06 | 738.1 | 30.12 | 765.0 | 46 | 7.8 | 69 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 29.12 | 739.6 | 30.19 | 766.8 | 14 | —10.0 | 82 | N | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Brownsville, Texas | 30.11 | 764.8 | 30.16 | 766.1 | 55 | 12.8 | 56 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 28.98 | 736.1 | 29.70 | 754.4 | 24 | — 4.4 | 80 | SW | 23 | 10.3 | ..... | ..... | 10s | ..... | SW | 0.03 | 0.8 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 60 | 15.6 | 10 | SE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.14 | 740.1 | 29.44 | 747.8 | 26 | — 3.3 | 75 | NW | 12 | 5.4 | ..... | 0 | 8s | ..... | W | 0.02 | 0.5 | Fair | |
| Cairo, Illinois | 29.69 | 754.1 | 30.09 | 764.3 | 43 | 6.1 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.22 | 640.6 | 30.02 | 762.5 | 56 | 13.3 | 63 | N | 4 | 1.8 | ..... | 2k | 0 | SW | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 51 | 10.9 | 65 | S | ..... | ..... | 1 | 8k | 0 | S | ..... | 0 | 0 | Fair | |
| Campo, California | 27.45 | 697.2 | 30.02 | 762.5 | 48 | 8.9 | 93 | SW | 4 | 1.8 | ..... | ..... | Fog | ..... | SW | 0.16 | 4.1 | Foggy | |
| Cape Hatteras, N. Carolina | 29.72 | 754.9 | 29.72 | 754.9 | 48 | 8.9 | 85 | NW | 11 | 4.9 | ..... | ..... | 10s | ..... | W | 0.51 | 13.0 | Cloudy | |
| Cape Henry, Virginia | 29.70 | 754.4 | 29.72 | 754.9 | 45 | 7.2 | 84 | W | 14 | 6.3 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Cape Lookout, N. Carolina | 29.74 | 755.4 | 29.76 | 755.9 | 48 | 8.9 | 93 | NW | 23 | 10.3 | ..... | ..... | 10s | ..... | W | 0.30 | 7.6 | Cloudy | |
| Cape May, New Jersey | 29.65 | 753.1 | 29.68 | 753.9 | 43 | 6.1 | 75 | NW | 12 | 5.4 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Castroville, Texas | 29.41 | 747.0 | 30.14 | 765.5 | 48 | 8.9 | 56 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 29.79 | 756.7 | 29.85 | 758.2 | 51 | 10.6 | 86 | N | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.54 | 13.7 | Light rain | |
| Cheyenne, Wyoming | 24.06 | 611.1 | 30.00 | 762.0 | 30 | — 1.1 | 57 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.19 | 741.4 | 29.90 | 759.4 | 34 | 1.1 | 79 | S | 2 | 0.9 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Cincinnati, Ohio | 29.35 | 745.5 | 30.03 | 762.8 | 32 | 0.0 | 64 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Cleveland, Ohio | 29.12 | 739.6 | 29.87 | 758.7 | 26 | — 3.3 | 75 | SW | 21 | 9.4 | ..... | ..... | 10ks | ..... | W | 0.03 | 0.8 | Cloudy | |
| Coleman City, Texas | 28.37 | 720.6 | 30.09 | 764.3 | 43 | 6.1 | 92 | N | 4 | 1.8 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Columbus, Ohio | 29.10 | 739.1 | 29.96 | 761.0 | 29 | — 1.7 | 67 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Concho, Texas | 26.25 | 717.5 | 29.86 | 758.4 | 40 | 4.4 | 91 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.68 | 753.9 | 30.17 | 766.3 | 39 | 3.9 | 64 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.25 | 742.9 | 29.91 | 759.7 | 33 | 0.6 | 70 | SW | 16 | 7.2 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Deadwood, Dakota | 25.44 | 646.2 | ..... | ..... | 25 | — 3.9 | 62 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Decatur, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Denison, Texas | 29.34 | 745.2 | 30.16 | 766.1 | 41 | 5.0 | 57 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.83 | 630.7 | 30.05 | 763.3 | 35 | 1.7 | 80 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Des Moines, Iowa | 28.96 | 735.6 | 29.86 | 758.4 | 33 | 0.6 | 70 | NW | 9 | 4.0 | ..... | 0 | 8s | ..... | W | 0 | 0 | Cloudy | |
| Detroit, Michigan | 29.18 | 741.2 | 29.87 | 758.7 | 23 | — 5.0 | 86 | NW | 5 | 2.2 | ..... | 5k | 2s | NW | Calm | Inap. | Inap. | Fair | |
| Dodge City, Kansas | 27.39 | 695.7 | 29.73 | 755.1 | 37 | 2.8 | 71 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.13 | 739.9 | 29.85 | 758.2 | 30 | — 1.1 | 78 | SW | 5 | 2.2 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Threatening | |
| Duluth, Minnesota | 29.39 | 746.5 | 30.12 | 765.0 | 18 | — 7.8 | 84 | N | 15 | 6.7 | ..... | ..... | 10s | ..... | N | 0.08 | 2.0 | Cloudy | |
| Eagle Pass, Texas | 29.45 | 748.0 | 30.22 | 767.6 | 46 | 7.8 | 77 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.14 | 740.1 | 29.21 | 741.9 | 30 | — 1.1 | 57 | W | 17 | 7.6 | ..... | 2k | 0 | W | ..... | 0.15 | 3.8 | Clear | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 55 | 12.8 | 56 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| El Paso, Texas | 26.32 | 668.5 | ..... | ..... | 41 | 5.0 | 73 | E | 2 | 0.9 | ..... | 5cs | 5s | W | W | Inap. | Inap. | Cloudy | |
| Erie, Pennsylvania | 29.06 | 738.1 | 29.81 | 757.2 | 25 | — 3.9 | 87 | NW | 18 | 8.0 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light snow | |
| Escanaba, Michigan | 29.30 | 744.2 | 30.00 | 762.0 | 15 | — 9.4 | 65 | N | 21 | 9.4 | ..... | ..... | 10s | ..... | N | Inap. | Inap. | Cloudy | |
| Florence, Arizona | 28.48 | 723.4 | 30.08 | 764.0 | 58 | 14.4 | 76 | S | 2 | 0.9 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Fort Buford, Dakota | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Craig, New Mexico | 25.61 | 650.5 | 29.68 | 753.9 | 39 | 3.9 | 63 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.40 | 645.2 | 30.36 | 771.1 | 47 | 8.3 | 62 | SW | 2 | 0.9 | ..... | 5cs | 0 | Calm | ..... | 0.02 | 0.5 | Fair | |
| Fort Gibson, Indian Ter | 29.56 | 750.8 | 30.12 | 765.0 | 34 | 1.1 | 61 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.86 | 733.0 | 30.20 | 767.1 | 35 | 1.7 | 70 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.62 | 701.5 | ..... | ..... | 27 | — 2.8 | 88 | NW | 19 | 8.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort McKavett, Texas | 27.88 | 708.1 | 29.87 | 758.7 | 40 | 4.4 | 56 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.90 | 734.0 | 30.06 | 763.5 | 38 | 3.3 | 81 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Stevenson, Dakota | 28.47 | 723.1 | ..... | ..... | 14 | —10.0 | 81 | NE | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light snow | |
| Fredericksburg, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Galveston, Texas | 30.08 | 764.0 | 30.12 | 765.0 | 57 | 13.9 | 69 | N | 18 | 8.0 | ..... | 0 | Haze | ..... | Calm | 0.75 | 19.1 | Clear | |
| Graham, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Grand Haven, Michigan | 29.25 | 742.9 | 29.93 | 760.2 | 26 | — 3.3 | 75 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Indianapolis, Indiana | 29.16 | 740.7 | 29.97 | 761.2 | 32 | 0.0 | 69 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Indianola, Texas | 30.13 | 765.3 | 30.16 | 766.1 | 53 | 11.7 | 48 | N | 24 | 10.7 | ..... | Haze | 0 | Calm | ..... | 0.01 | 0.3 | Clear | |
| Jacksboro, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Jacksonville, Florida | 29.84 | 757.9 | 29.86 | 758.4 | 66 | 18.9 | 84 | NW | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Keokuk, Iowa | 29.30 | 744 2 | 29.93 | 760.2 | 33 | 0.6 | 79 | SW | 9 | 4.0 | ..... | 1c | 0 | NW | ..... | 0 | 0 | Clear | |
| Key West, Florida | 29.96 | 761.0 | 29.99 | 761.7 | 75 | 23.9 | 86 | SW | 8 | 3.6 | ..... | 5k | 0 | SW | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 29.66 | 753.4 | 29.69 | 754.1 | 48 | 7.5 | 84 | NW | 11 | 4.9 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Fair | |
| Knoxville, Tennessee | 28.98 | 736.1 | 30.00 | 762.0 | 40 | 4.4 | 56 | N | 6 | 2.7 | ..... | 0 | 1ks | ..... | N | 0.03 | 0.8 | Clear | |
| La Crosse, Wisconsin | 29.08 | 738.6 | 29.84 | 757.9 | 30 | — 1.1 | 78 | NE | 3 | 1.3 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Heavy snow | |
| La Mesilla, New Mexico | 26.16 | 664.4 | 30.31 | 769.9 | 41 | 5.0 | 91 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Laredo, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Leavenworth, Kansas | 29.14 | 740.1 | 30.02 | 762.5 | 32 | 0.0 | 60 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.72 | 754.9 | 30.06 | 763.5 | 53.0 | 11.7 | 86 | E | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.26 | 6.6 | Cloudy | |
| Louisville, Kentucky | 29.45 | 748.0 | 30.03 | 762.8 | 36 | 2.2 | 45 | N | 3 | 1.3 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Lynchburg, Virginia | 29.07 | 738.4 | 29.75 | 755.6 | 47 | 8.3 | 27 | NW | 10 | 4.5 | ..... | 5ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Madison, Wisconsin | 28.86 | 733.0 | 29.87 | 758.7 | 32 | 0.0 | 60 | SE | 7 | 3.1 | ..... | ..... | 10n | ..... | Calm | 0.06 | 1.5 | Light snow | |
| Marquette, Michigan | 29.27 | 743.4 | 30.02 | 762.5 | 15 | — 9.4 | 82 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.06 | 1.5 | Cloudy | |
| Mason, Texas | 28.52 | 724.4 | 30.33 | 770.4 | 46 | 7.8 | 62 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.74 | 755.4 | 30.06 | 763.5 | 45 | 7.2 | 64 | N | 4 | 1.8 | ..... | 0 | Sm'e | ..... | Calm | 0.01 | 0.3 | Clear | |
| Milwaukee, Wisconsin | 29.17 | 740 9 | 29.93 | 760.2 | 25 | — 3.9 | 87 | NE | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light snow | |
| Mobile, Alabama | 29.98 | 761.5 | 30.03 | 762.8 | 52 | 11.1 | 79 | N | 12 | 5.4 | ..... | 2k | 5s | NW | N | 0.28 | 7.1 | Clearing | |
| Montgomery, Alabama | 29 80 | 756.9 | 30.04 | 763.0 | 49 | 9.4 | 71 | N | 4 | 1.8 | ..... | 2k | 5s | SW | SW | 0.44 | 11.2 | Fair | |
| Morgantown, West Virginia | 28.78 | 731.0 | 29.86 | 758.4 | 36 | 2.2 | 61 | SW | 20 | 8.9 | ..... | 0 | 8ks | ..... | SW | 0 | 0 | Cloudy | |
| Mt. Washington, N. H. | 22.71 | 576.8 | 29.07 | 738.4 | 8 | —13.3 | 100 | NW | 114 | 50.9 | ..... | ..... | Fog | ..... | NW | 0 | 0 | Foggy | |
| Nashville, Tennessee | 29.50 | 749.3 | 30.05 | 763.3 | 41 | 5.0 | 57 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 29.40 | 746.7 | 29.51 | 749.5 | 45 | 7.2 | 46 | W | 16 | 7.2 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| New London, Connecticut | 29.47 | 748.5 | 30.52 | 775.2 | 41 | 5.0 | 49 | W | 12 | 5.4 | ..... | 1k | 0 | W | ..... | 0 | 0 | Clear | |
| New Orleans, Louisiana | 29.93 | 761.5 | 30.04 | 763.0 | 56 | 13.3 | 60 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.60 | 15.2 | Clear | |
| Newport, Rhode Island | 29.48 | 748.8 | 29.53 | 750.0 | 40 | 4.4 | 56 | SW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New York, New York | 29.43 | 747.5 | 29.61 | 752.1 | 39 | 3.9 | 46 | W | 12 | 5.4 | ..... | 1k | 0 | W | ..... | 0 | 0 | Clear | |
| Norfolk, Virginia | 29.67 | 753.6 | 29.73 | 755.1 | 45 | 7.2 | 76 | W | 7 | 3.1 | ..... | 0 | 2s | ..... | W | 0 | 0 | Clear | |

## UNITED STATES SERIES.—Continued.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r —10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.00 | 687.3 | 29.73 | 755.1 | 27 | — 2.8 | 70 | W | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Olympia, Washington Ter. | 29.89 | 759.2 | 29.93 | 760.2 | 42.2 | 5.7 | 91 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Omaha, Nebraska | 28.74 | 730.0 | 29.86 | 758.4 | 36 | 2.2 | 63 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Oswego, New York | 29.27 | 743.4 | 29.90 | 759.4 | 31 | — 0.6 | 79 | N | 22 | 9.8 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Light snow. | |
| Pembina, Dakota | 29.50 | 749.3 | 29.44 | 747.8 | — 3 | —19.4 | 100 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.22 | 5.6 | Clear..... | |
| Philadelphia, Pa | 29.62 | 752.3 | 29.68 | 753.9 | 41 | 5.0 | 49 | W | 18 | 8.0 | ..... | 0 | 2ks | ..... | W | 0 | 0 | Fair..... | |
| Phœnix, Arizona | 28.80 | 731.5 | 30.59 | 777.0 | 58 | 14.4 | 76 | Calm | 0 | 0 | ..... | 0 | 8ks | ..... | S | 0 | 0 | Cloudy..... | |
| Pike's Peak, Colorado | 17.77 | 451.4 | 29.98 | 761.5 | 14 | —10.0 | 28 | N | 22 | 9.8 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear..... | |
| Pioche, Nevada | 23.98 | 609.1 | 29.75 | 755.6 | 32 | 0.0 | 100 | S | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | 0.87 | 22.1 | Light snow. | |
| Pittsburg, Pennsylvania | 29.02 | 737.1 | 29.85 | 758.2 | 29 | — 1.7 | 67 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | NW | 0.03 | 0.8 | Cloudy..... | |
| Port Huron, Michigan | 29.13 | 739.9 | 29.83 | 757.7 | 21 | — 6.1 | 86 | NW | 13 | 5.8 | ..... | ..... | 10ks | ..... | NW | 0.03 | 0.8 | Cloudy..... | |
| Portland, Maine | 29.27 | 743.4 | 29.32 | 744.7 | 37 | 2.8 | 45 | W | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Portland, Oregon | 29.80 | 756.9 | 29.99 | 761.7 | 53.3 | 11.8 | 80 | SE | 3 | 1.3 | ..... | 0 | 5s | ..... | S | 0 | 0 | Fair..... | |
| Prescott, Arizona | 24.71 | 627.6 | 30.07 | 763.8 | 49 | 9.4 | 71 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | Inap. | Inap. | Cloudy..... | |
| Pilot Point, Texas | 29.12 | 739.6 | 29.93 | 760.2 | 58 | 14.4 | 63 | SE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Punta Rassa, Florida | 29.97 | 761.2 | 29.98 | 761.5 | 73 | 22.8 | 81 | SW | 9 | 4.0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear..... | |
| Red Bluff, California | 29.60 | 751.8 | 29.96 | 761.0 | 57 | 13.9 | 87 | S | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy..... | |
| Rio Grande City, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Rochester, New York | 29.02 | 737.1 | 29.65 | 753.1 | 25 | — 3.9 | 75 | W | 22 | 9.8 | ..... | ..... | 10s | ..... | W | 0.02 | 0.5 | Cloudy..... | |
| Roseburg, Oregon | 29.42 | 747.2 | 29.98 | 761.5 | 54 | 12.2 | 87 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy..... | |
| Sacramento, California | 29.92 | 760.0 | 30.00 | 762.0 | 56.5 | 13.6 | 77 | S | 3 | 1.3 | ..... | ..... | 10ks | ..... | S | Inap. | Inap. | Cloudy..... | |
| St. Louis, Missouri | 29.45 | 748 0 | 30.05 | 763.3 | 32 | 0.0 | 69 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| St. Marks, Florida | 29.94 | 760.5 | 29.96 | 761.0 | 52 | 11.1 | 100 | NW | 12 | 5.4 | ..... | ..... | 10n | ..... | N | 0.22 | 5.6 | Light rain... | |
| St. Paul, Minnesota | 29.04 | 737.6 | 29.90 | 759.4 | 27 | — 2.8 | 82 | N | 18 | 8.0 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | Heavy snow | |
| Salt Lake City, Utah | 25.55 | 649.0 | 29.88 | 758.9 | 52 | 11.1 | 35 | Calm | 0 | 0 | ..... | 9k | 0 | W | ..... | 0 | 0 | Cloudy..... | |
| San Antonio, Texas | 29.49 | 749.0 | 30.00 | 764.3 | 46 | 7.8 | 62 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear..... | |
| San Diego, California | 29.99 | 761.7 | 30.07 | 763.8 | 55 | 12.8 | 93 | E | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0.17 | 4.3 | Fair..... | |
| Sandusky, Ohio | 29.21 | 741.9 | 29.92 | 760.0 | 25 | — 3.9 | 62 | W | 25 | 11.2 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear..... | |
| Sandy Hook, New Jersey | 29.67 | 751.1 | 29.60 | 751.8 | 42 | 5.6 | 50 | W | 32 | 14.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| San Francisco, California | 29.95 | 760.7 | 30.01 | 762.2 | 54 | 12.2 | 83 | S | 2 | 0.9 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair..... | |
| Santa Fé, New Mexico | 23.99 | 691.6 | 29.88 | 767.7 | 34 | 1.1 | 90 | N | 6 | 2.7 | ..... | 1ck | 0 | NW | ..... | 0.01 | 0.3 | Clear..... | |
| Savannah, Georgia | 29.80 | 756.9 | 29.89 | 759.2 | 51 | 10.6 | 93 | NW | 10 | 4.5 | ..... | ..... | 10n | ..... | NW | 0.68 | 17.3 | Light rain... | |
| Shreveport, Louisiana | 29.91 | 759.7 | 30.13 | 765.3 | 49 | 9.4 | 94 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear..... | |
| Silver City, New Mexico | 24.30 | 617.2 | 30.53 | 775.4 | 43 | 6.1 | 75 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Smithville, North Carolina | 29.79 | 756.7 | 29.83 | 757.7 | 48 | 8.9 | 93 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.26 | 6.6 | Cloudy..... | |
| Springfield, Massachusetts | 29.36 | 745.7 | 29.49 | 749.0 | 41 | 5.0 | 57 | W | 10 | 4.5 | ..... | 0 | 8ks | ..... | W | 0 | 0 | Cloudy..... | |
| Stockton, Texas | 27.08 | 687.8 | 30.08 | 764.0 | 74 | 23.3 | 72 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.20 | 5.1 | Clear..... | |
| Thatcher's Island, Mass | 29.35 | 745.5 | 29.40 | 746.7 | 35 | 3.3 | 54 | W | 28 | 12.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Toledo, Ohio | 29.18 | 741.2 | 29.89 | 759.2 | 30 | — 1.1 | 68 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear..... | |
| Tucson, Arizona | 27.54 | 699.5 | 30.09 | 764.3 | 55 | 12.8 | 38 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Umatilla, Oregon | 29.54 | 750.3 | 30.02 | 762.5 | 45.0 | 7.2 | 92 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 32 | 0.0 | 89 | SW | ..... | 4 | ..... | ..... | 10s | ..... | W | 0.09 | 2.3 | Cloudy..... | |
| Uvalde, Texas | 29.31 | 744.5 | 30.14 | 765.5 | 48 | 8.9 | 56 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Vicksburg, Mississippi | 29.86 | 758.4 | 30.13 | 765.3 | 49 | 9.4 | 85 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | ..... | 0 34 | 8.6 | Clear..... | |
| Virginia City, Montana | 24.24 | 615.7 | 29.72 | 754.9 | 42 | 5.6 | 58 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Visalia, California | 29.65 | 753.1 | 30.02 | 762.5 | 51 | 10.6 | 89 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear..... | |
| Washington, D. C. | 29.62 | 752.3 | 29.78 | 755.1 | 42 | 5.6 | 42 | NW | 21 | 9.4 | ..... | 1cs | 1s | W | W | 0 | 0 | Fair..... | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 58 | 14.4 | 70 | NW | ..... | ..... | 1 | 0 | 5ks | ..... | SW | 0 | 0 | Fair..... | |
| Wilmington, N. Carolina | 29.72 | 754.9 | 29.80 | 756.9 | 48 | 8.9 | 78 | NW | 11 | 4.9 | ..... | ..... | 10s | ..... | Calm | 0.15 | 3.8 | Cloudy..... | |
| Winnemucca, Nevada | 25.56 | 649.2 | 29.92 | 760.0 | 40 | 4.4 | 100 | SW | 6 | 2.7 | ..... | 0 | 8s;fg | ..... | SW | 0.03 | 0.8 | Cloudy..... | |
| Wood's Holl, Mass | 29.44 | 747.8 | 29.47 | 748.5 | 40 | 4.4 | 73 | W | 22 | 9.8 | ..... | 0 | 5ks | ..... | SW | 0 | 0 | Fair..... | |
| Yankton, Dakota | 28.69 | 728.7 | 30.03 | 762.8 | 31 | — 0.6 | 68 | N | 27 | 12.1 | ..... | 5ck | 2s | NW | N | 0 | 0 | Cloudy..... | |
| Yuma, Arizona | 29.86 | 758.4 | 30.03 | 762.8 | 59 | 15.0 | 48 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.48 | 723.4 | 29.94 | 760.5 | 33 | 0.6 | 43 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 29.94 | 760.5 | 29.99 | 761.7 | 73 | 22.8 | 76 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 26.22 | 640.6 | ..... | ..... | 65.0 | 18.3 | 80 | Calm | 0 | 0 | ..... | 5k | 1s | ..... | ..... | 0.01 | 0.3 | ..... | Thomas Herran. |
| Navassa, W. I | 29.96 | 761.0 | 30.04 | 763.0 | 81 | 27.2 | ..... | E | 7.5 | 3.4 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Partly clo'dy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.01 | 762.2 | 30.01 | 762.2 | 81 | 27.2 | 87 | NE | ..... | ..... | 2 | ..... | 8ks | E | ..... | 0.200 | 5.08 | Cloudy..... | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | 29.73 | 755.1 | 29.78 | 756.4 | —16.0 | —26.7 | 70 | N | 10 | 4.5 | ..... | 0 | 1s | ..... | N | 0 | 0 | Fair..... | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.8 feet, or 519.5 m.; Boerne, 1,338 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.8 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,861 (?) ft., or 2,088.1 (?) m.; Silver City, 6,396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,835.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.86 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.64 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.00 | 762.0 | 55 | 12.8 | 51 | 10.6 | 93 | ENE | 2 | 0.9 | .... | ..... | 8? | ..... | ..... | 0 | 0 | ..... | ..... | Clear? | |
| Navy Yard, Pensacola, Fla. | 30.05 | 763.3 | 54 | 12.2 | 54 | 12.2 | 87 | W | 5 | 2.2 | ..... | ..... | 5 | ..... | W | 0.10 | 2.5 | ..... | ..... | Fair | |
| Navy Yard, Portsmouth, N.H | 29.42 | 747.2 | 57 | 13.9 | 37 | 2.8 | 90 | W | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy | |
| Naval Hospital, Yokohama, Japan | *29.75‡ | 755.6‡ | ..... | ..... | 62.5 | 16.9 | 77 | SSW | ..... | ..... | 3 | ..... | 10s | ..... | SW | 0 | 0 | ..... | ..... | Overcast | |
| Adams, Panama | *29.97 | 761.2 | 79 | 26.1 | 78 | 25.6 | 91 | NW | ..... | ..... | 3 | ..... | 8 | ..... | NW | ..... | ..... | ..... | ..... | Fair | |
| Alaska, N. 54° 35′, W. 133° 49′ | 29.75‡ | 755.6‡ | ..... | ..... | 41 | 5.0 | 100 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Mod'ate | SW | Drizzling | |
| Alliance, Naples, Italy | 29.87‡ | 758.7‡ | ..... | ..... | 63 | 17.2 | 62 | SSW | ..... | ..... | 4–5 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Squally | |
| Ashuelot, Hong-Kong, China | *29.77‡ | 756.1‡ | ..... | ..... | 75 | 23.9 | 90 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Misty | |
| Canonicus, New Orleans, La | *30.06 | 763.5 | 44 | 6.7 | 55 | 12.8 | 79 | N | ..... | .... | 4 | ..... | 2 | ..... | N | ..... | ..... | ..... | ..... | Fair | |
| Colorado, New York, N. Y. | 29.58 | 751.3 | 44 | 6.7 | 41 | 5.0 | 47 | WNW | 21 | 9.4 | ..... | ..... | 5 | ..... | WNW | ..... | ..... | ..... | ..... | Pleasant | |
| Constitution Lisbon, Portugal | 30.04‡ | 763.0‡ | ..... | ..... | 54 | 12.2 | 87 | NW | ..... | ..... | 4 | ..... | 6 | ..... | NW | ..... | ..... | ..... | ..... | Fair | |
| Despatch, Genoa, Italy | 29.65‡ | 753.1‡ | ..... | ..... | 57 | 13.9 | 87 | SW | ..... | ..... | 3 | ..... | 10 | ..... | SW | ..... | ..... | Smooth | ..... | Rainy | |
| Franklin, Norfolk, Va. | *29.83 | 757.7 | 62 | 16.7 | 46 | 7.8 | 84 | NW | 10.8 | 4.8 | ..... | ..... | 2 | ..... | NW | 0 | 0 | ..... | ..... | Fair | |
| Gettysburg, Genoa, Italy | 29.72‡ | 754.9‡ | ..... | ..... | 55 | 12.8 | 7 | SSW | ..... | ..... | 5–6 | ..... | 10 | ..... | ..... | 0.9 | 23. | ..... | S | Rainy | |
| Hartford, Montevideo, Uruguay | *30.20 | 767.1 | 70 | 21.1 | 69 | 20.6 | 72 | ENE | ..... | ..... | 4 | ..... | 8 | ..... | ENE | 0 | 0 | Smooth | ..... | Fair | |
| Michigan, Erie, Pa. | †29.88‡ | 758.9‡ | ..... | ..... | 26 | — 3.3 | 89 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Raining | |
| Monocacy, Shanghai, China | *29.64‡ | 752.8‡ | ..... | ..... | 55 | 12.8 | 80 | NE | ..... | ..... | 4–6 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Squally | |
| Monongahela Yokohama, Japan | *29.66‡ | 753.9‡ | ..... | ..... | 65 | 18.3 | 78 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Overcast | |
| New Hampshire, Port Royal, S. C. | *29.98 | 761.5 | 54 | 12.2 | 52 | 11.1 | 93 | NNW | 12 | 5.4 | ..... | ..... | 10 | ..... | NNW | 0.5 | 13. | ..... | ..... | Raining | |
| Onward, Callao, Peru | †*30.04 | 763.0 | ..... | ..... | 67 | 19.4 | 89 | SE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Long | W | Fair | |
| Palos, Tientsin, China | *30.06 | 763.5 | 36 | 2.2 | 36 | 2.2 | 66 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast | |
| Passaic, Washington, D. C. | ..... | ..... | ..... | ..... | 45 | 7.2 | 76 | NW | ..... | ..... | 3 | ..... | 2 | ..... | ESE | ..... | ..... | ..... | ..... | Clear | |
| Pensacola, S. 30° 21′, W. 72° 01′ | 30.00‡ | 762.0‡ | ..... | ..... | 62 | 16.7 | 94 | ESE | 4 | 1.8 | ..... | ..... | 7 | ..... | SE | 0 | 0 | Smooth | N | Cloudy | |
| Plymouth, N. 40° 03′, W. 70° 51′ | 29.60‡ | 751.8‡ | ..... | ..... | 43 | 6.1 | 68 | WNW | ..... | ..... | 3–4 | ..... | 0 | ..... | ..... | ..... | ..... | Long | WSW | Clear | |
| Powhatan, Norfolk, Va. | 29.74‡ | 755.4‡ | ..... | ..... | 50 | 10.0 | 79 | WNW | ..... | ..... | 2–3 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Quinnebaug, Malaga, Spain | 30.04‡ | 763.0‡ | ..... | ..... | 62 | 16.7 | 56 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | WNW | ..... | ..... | ..... | ..... | Cloudy | |
| Ranger, Amoy, China | *29.74‡ | 755.4‡ | ..... | ..... | 75 | 23.9 | 86 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | NW | Clear | |
| Richmond, N. 13° 20′, E. 57° 35′ | 29.87‡ | 758.7‡ | ..... | ..... | 83 | 28.3 | 79 | E | ..... | ..... | 0–1 | ..... | 2 | ..... | E | 0.1 | 2. | Smooth | ..... | Fair | |
| Rio Bravo, Brownsville, Texas | 30.09 | 764.3 | 58 | 14.4 | 56 | 13.3 | 94 | NW | ..... | ..... | 3–5 | ..... | 8 | ..... | SW | ..... | ..... | ..... | ..... | Cloudy | |
| Santee, Annapolis, Md. | 29.71‡ | 754.6‡ | ..... | ..... | 46 | 7.8 | 100 | N | ..... | ..... | 3 | ..... | 2 | ..... | W | 0 | 0 | ..... | ..... | Clear | |
| Saratoga, Hampton Roads, Va. | 29.73‡ | 755.4‡ | ..... | ..... | 48 | 8.9 | 85 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | NE | 0 | 0 | ..... | ..... | D. clouds | |
| St. Louis, League Island, Pa | 29.70‡ | 754.4 | ..... | ..... | 43 | 6.1 | 61 | WNW | 8 | 3.6 | ..... | ..... | 5 | ..... | WNW | 0 | 0 | ..... | ..... | Fair | |
| Supply, New York, N. Y. | 29.58‡ | 751.3‡ | ..... | ..... | 41 | 5.0 | 48 | WNW | ..... | ..... | 4 | ..... | 5 | ..... | WNW | ..... | ..... | ..... | ..... | Fair | |
| Trenton Genoa, Italy | *29.67‡ | 753.6‡ | ..... | ..... | 55 | 12.8 | 100 | SSE | ..... | ..... | 3–6 | ..... | 10 | ..... | S;E | 0.04 | 1.0 | Heavy | S | Rainy | |
| Tuscarora, Chilpequa Bay, Mexico | *29.90‡ | 759.4‡ | ..... | ..... | 77 | 25.0 | 77 | NW | ..... | ..... | 0–1 | ..... | 1 | ..... | N | 0 | 0 | Smooth | ..... | Clear | |
| Vandalia Boston, Mass. | †29.62‡ | 752.3‡ | ..... | ..... | 40 | 4.4 | 66 | WNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Wabash, Boston, Mass. | 29.43‡ | 747.6‡ | ..... | ..... | 40 | 4.4 | 82 | W | 11 | 4.9 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Wyoming, Alexandria, Egypt | *30.09‡ | 764.3‡ | ..... | ..... | 64 | 17.8 | 89 | WNW | ..... | ..... | 1–2 | ..... | 2 | ..... | NW | ..... | ..... | Smooth | NW | Fair | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. R. Searle. |
| S. S. Colima, N. 9° 34', W. 85° 04'....†* | | 29.90‡ | 761.0‡ | 80 | 26.7 | | NE | | | 0-1 | | 5 | | NE | 0 | | | D. clouds | Capt. Whitebury |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | B. Lawless. |
| S. S. Dakota, Capt. H. G. Morse, N. 44° 26', W. 124° 47'..†* | | 30.00‡ | 762.0‡ | | | | N | | | 2 | | 10 | | | Light | Light | SW | Fine | Capt. Connolly. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |
| S. S. Zealandia, S. 9° 40', W. 169° 10' | | 29.89‡ | 759.2‡ | | | | NW | | | 1 | | 4 | | S | | Long; slow | SE | Fine | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic, N. 45° 38', W. 43° 47'....†* | | 30.00‡ | 762.0‡ | 53 | 11.7 | | SW | | | 6 | | 3 | | SSW | | Con-fused | WSW | Squally | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Correction for elevation applied at this office.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, N. 43° 29', E. 176° 08'.....* | | 29.69‡ | 754.1‡ | 38 | 3.3 | 100 | NE | | | 7-8 | | n | | NE | | Rough cross | N | Raining | J. A. Thompson, 2d Off't |
| S. S. Gaelic, N. 25° 59', E. 121° 28'.....†* | | 29.67‡ | 753.6‡ | 68 | 20.0 | 84 | Var. | | | 3-6 | | k | | NE | 0 | Smooth | | Foggy | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, N. 35° 26', W. 175° 25' | | 30.41‡ | 772.4‡ | 55 | 12.8 | 87 | NW | | | 4 | | 7 | | NNW | | 4 | NW | D. clouds | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andreesen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 39° 48,' W. 63° 27'..... * | | 29.59‡ | 751.6‡ | | | | WNW | | | 7 | | 8 | | W | | Rough | SW | Cloudy. | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4, nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Lo'wr 0—10. | Upper. From— | Lower. From— | | Character. | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Delaware River | | 29.64‡ | 752.8‡ | 58 | 14.4 | | W | | | 4 | | 3 | | W | 0 | | | Clear | Captain Sargent. Wm. Shackford, Chief Officer. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher, & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| Peruvian, N. 49° 05′, W. 40° 00′ | †* | 29.36‡ | 746.2 | 51 | 10.6 | 93 | SW | | | 5 | | 10 | | WSW | | Mod'ate | SW | Clear | J. Powell, 4th Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. Correction for temperature and elevation applied at this office.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MARINE SERIES.** (Miscellaneous.) | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller, Off Monomoy Island, Mass. | | 29.52‡ | 749.8‡ | 41 | 5.0 | 83 | WSW | 12 | 5.4 | | | 0 | | | 0 | | | Clear | Capt. James Jorgensen. |
| Brigantine "George," of Halifax | | | | | | | | | | | | | | | | | | | Willard N. Pratt. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST BOSTON

# BULLETIN

OF

# INTERNATIOAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 3, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:28 P. M. MELBOURNE mean time.

## ALGEGIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 30.01 | 762.3 | 63.3 | 17.4 | 58 | WNW | | | 3 | | 5 | | | 0 | 0 | Cloudy | Kesxuche. |
| Algiers | | | 29.57 | 751.1 | 53.2 | 11.8 | 78 | W | | | 4 | | 10 | | | 0.598 | 15.2 | Covered | Tourillere. |
| La Calle | | | 29.84 | 757.9 | 69.4 | 20.8 | 53 | WSW | | | 2 | | 5 | | | 0.217 | 5.5 | Cloudy | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 29.95 | 760.7 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 30.00 | 761.9 | 51.4 | 10.8 | 69 | W | | | 5 | | 10 | | | 0 | 0 | Covered | Herbin. |
| Tebessa | | | 29.89 | 759.2 | 62.4 | 16.9 | 41 | NW | | | 7 | | 2 | | | 0 | 0 | Fair | Watrin. |
| Geriville | | | 29.97 | 761.1 | 63.3 | 17.4 | 79 | W | | | 6 | | 0 | | | 0 | 0 | Clear | Brugnlaux. |
| Laghouat | | | 29.97 | 761.2 | 63.0 | 17.2 | 38 | W | | | 4 | | 0 | | | 0 | 0 | Clear | Bertrand. |
| Biskra | | | 29.92 | 759.9 | 73.0 | 22.8 | 22 | NW | | | 1 | | 2 | | | 0 | 0 | Fair | Chanvaux. |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

## AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.04 | 737.7 | 29.58 | 751.4 | 58.3 | 14.6 | 42 | SW | | | 3 | | 3 | | | 0.299 | 7.6 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 28.82 | 731.9 | 29.56 | 750.8 | 62.2 | 16.8 | 53 | SSE | | | 3 | | 10 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 28.75 | 730.3 | 29.61 | 752.0 | 61.5 | 16.4 | 41 | SE | | | 2 | | 8cs | | | 0 | 0 | | Julius Mikolik. |
| Gratz | 28.28 | 718.4 | 29.61 | 749.5 | 56.8 | 13.8 | 38 | SSE | | | 4 | | 7 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.25 | 717.6 | 29.68 | 752.5 | 65.5 | 18.6 | 41 | SSE | | | 4 | | 8 | | | 0 | 0 | | Prof. A. Gottschling. |
| Kremsmünster | 28.17 | 715.4 | 29.51 | 749.6 | 42.8 | 6.0 | 79 | WNW | | | 2 | | 10 | | | 0 | 0 | | Prof. C. Wagner. |
| Lemberg | 28.78 | 731.0 | 29.78 | 756.3 | 45.1 | 7.3 | 78 | SE | | | 1 | | 4 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 29.50 | 749.4 | 29.61 | 752.2 | 57.0 | 13.9 | 69 | S | | | 3 | | 2 | | | 0.516 | 13.1 | | I.R.Hydrographic Office |
| Szathmar | 29.22 | 742.1 | 29.67 | 753.5 | 57.1 | 19.5 | 40 | SE | | | 3 | | 8 | | | 0 | 0 | | Julius Csics, S. J. |
| Szegedin | 29.36 | 745.8 | 29.64 | 752.8 | 57.6 | 14.2 | 67 | S | | | 2 | | 10 | | | 0.246 | 6.25 | | Karl Stancel. |
| Trieste | 29.62 | 749.6 | 29.62 | 752.4 | 57.7 | 14.3 | 60 | SW | | | 1 | | 2 | | | 0.189 | 4.8 | | P. Busin. |
| Vienna | 28.77 | 730.8 | 29.47 | 748.5 | 58.6 | 14.8 | 50 | S | | | 4 | | 3 | | | 0 | 0 | | I. R. Central Met. Obs'y |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment o observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

## BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.34 | 745.1 | 29.54 | 750.2 | 43.3 | 6.3 | 79 | NW | | | 3 | | 10 | | NW | 0 | 0 | | Royal Observatory. |
| Furnes | 29.76 | 755.8 | 29.78 | 756.4 | 43.9 | 6.6 | 87 | NNW | | | 2 | | 8 | | | 0 | 0 | | M. E. de Cae. |
| Maeseyck | 29.34 | 745.2 | 29.47 | 748.4 | 42.4 | 5.8 | 85 | W | | | 4 | | 10 | | | 0.539 | 13.7 | | M. Pierrot. |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0; instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m., Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected (or instrum'tal error and temperature.) Inches. | Barometer. Corrected (or instrum'tal error and temperature.) Millimeters. | Barometer. Reduced to sea-level Inches. | Barometer. Reduced to sea-level Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.45 | 748.0 | 29.55 | 750.6 | 45.2 | 7.3 | | SSE | 16 | 7.2 | | | 2 | | | 0 | 0 | Blue sky | W. Boswell. |
| Ardrossan | 29.56 | 750.3 | 29.58 | 751.3 | 45 | 7.2 | | SSW | | | 4 | | 4 | | | | | D. clouds | William McNeil. |
| Armagh, Observatory | | | 29.62 | 752.3 | 46.9 | 8.3 | | WSW | 10 | 4.5 | | | 5 | | | | | D. clouds | S. Call. |
| Bidston, (Liverpool Obs) | | | 29.64 | 752.8 | 44.6 | 7.0 | | WNW | 10 | 4.5 | | | 1 | | | | | Blue sky | John Hartnup. |
| Bolton, (Sharples) | | | 29.59 | 751.6 | 46.8 | 8.2 | | NNW | 12 | 5.4 | | | 8 | | | | | D. clouds | Thomas Mackereth. |
| Bradford, Yorkshire | 29.20 | 741.7 | 29.59 | 751.6 | 46.3 | 7.9 | | N | | | 1 | | 4 | | | 0.21 | 5.3 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.95 | 760.7 | 29.98 | 761.5 | 82.5 | 28.1 | | NE | | | 2 | | 3 | | | | | D. clouds | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | | | 29.58 | 751.3 | 45.0 | 7.2 | | N | | | 1 | | 10 | | | | | Overcast | H. Todd. [C. |
| Cardington | | | 29.58 | 751.3 | 48.0 | 8.9 | | N | | | 1 | | 10 | | | | | Overcast | John McLaren. |
| Chatham, School M. E. | 29.43 | 747.5 | 29.56 | 750.8 | 53.3 | 11.8 | | NW | | | 1 | | 3 | | | | | Blue sky | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.17 | 715.5 | 29.65 | 753.1 | 44.0 | 6.7 | | E | | | 2 | | 3 | | | | | Fine | Alexander Watt. |
| Donaghadee | 29.58 | 751.3 | 29.62 | 752.3 | 50 | 10.0 | | WSW | | | 3 | | 3 | | | | | D. clouds | J. Mac Gowan. |
| Dover | 29.54 | 750.3 | 29.57 | 751.1 | 46 | 7.8 | | NE | | | 2 | | 7 | | | | | Misty | J. Costello. |
| Falmouth, Observatory | 29.45 | 748.0 | 29.69 | 753.9 | 48.7 | 9.3 | | NW | | | 2 | | 3 | | | | | D. clouds | The Staff. |
| Fort Napier, (Natal) | 27.58 | 700.5 | 29.90 | 759.4 | 73.2 | 22.9 | | E | | | 2 | | 3 | | | | | D. clouds | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 87 | 30.6 | | N | | | 2 | | | | | | | D. clouds | |
| Galway, Queen's college | | | 29.59 | 751.6 | 46 | 7.8 | | WSW | | | 2 | | 10 | | | | | Overcast | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 29.98 | 761.5 | 30.03 | 762.8 | 60.0 | 15.6 | | W | | | 2 | | 3 | | | | | Blue sky | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.36 | 745.7 | 29.57 | 751.1 | 46.0 | 7.8 | | SW | | | 5 | | 4 | | | | | D. clouds | D. G. Maclean. [C. |
| Great Yarmouth | 29.59 | 751.6 | 29.59 | 751.6 | 41 | 5.0 | | NNE | | | 2 | | 7 | | | | | Misty | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.39 | 746.5 | 29.56 | 750.8 | 54.7 | 12.6 | | NNW | | | 1 | | 6 | | | | | D. clouds | The staff, for G.B.Airy. |
| Guernsey | 29.42 | 747.2 | 29.64 | 752.8 | 46 | 7.8 | | NW | | | 3 | | 5 | | | | | D. clouds | Dr. S.E.Hoskins, F.R.S. |
| Helston | 29.66 | 753.4 | 29.78 | 756.4 | 53 | 11.7 | | N | | | 2 | | 2c | | | 0 | 0 | Fine | M. P. Moyle. |
| Holyhead | 29.62 | 752.3 | 29.66 | 753.4 | 45 | 7.2 | | NW | | | 2 | | 0 | | | | | Blue sky | John Tilston. |
| Jersey | 29.36 | 745.7 | 29.66 | 753.4 | 47.2 | 8.4 | | NW | | | 3 | | 7 | | | Blank | Blank | Gloomy | J. Fisher. |
| Kew, Observatory | 29.53 | 750.0 | 29.57 | 751.1 | 50.2 | 10.1 | | NW | 8 | 3.6 | | | 9 | | | | | Misty | The Meteorological Of. |
| Leicester, Museum | 29.34 | 745.2 | 29.59 | 751.6 | 48.2 | 9.0 | | W | | | 1 | | 9 | | | | | D. clouds | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranea | 29.77 | 756.1 | 29.85 | 758.2 | 64 | 17.8 | | NW | | | 1 | | 2k | | | | | Blue sky | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.41 | 747.0 | 29.50 | 749.3 | 50 | 10.0 | | W | | | 2 | | 5 | | | | | ½ clouded | W. D. Penny. |
| Nassau, (Bahamas) | | | 30.01 | 762.2 | 77.8 | 25.4 | | NW | | | 1 | | 4 | | | | | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.42 | 747.2 | 29.61 | 752.1 | 48.0 | 8.9 | | SSW | | | 1 | | 8k | | | 0.030 | 0.76 | D. clouds | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.08 | 738.6 | 29.60 | 751.8 | 47.6 | 8.7 | | NW | | | 2 | | 9 | | | | | Misty | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | | | 29.60 | 751.8 | 49 | 9.4 | | NW | | | 1 | | 4 | | | | | D. clouds | H. E. Bellamy. |
| Plymouth | 29.56 | 750.8 | 29.64 | 752.8 | 53.5 | 11.9 | | NW | | | 3 | | 6 | | | | | D. clouds | John Merrifield. |
| Roche's Point | 29.62 | 752.3 | 29.70 | 754.4 | 45 | 7.2 | | SW | | | 3 | | 5 | | | | | ⅘ clouded | Wm. Kennedy, |
| Saint Ann's Head | 29.50 | 749.3 | 29.67 | 753 6 | 45 | 7.2 | | NW | | | 1 | | 2 | | | | | Blue sky | John C. Walker. |
| Sandwick Manse, (Orkneys) | | | | | 42.1 | 5.6 | | SW | 8 | 3.6 | | | 0 | | | | | Blue sky | Rev C.Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.80 | 756.9 | 29.86 | 758.4 | 59.2 | 15.1 | | NE | | | 1 | | 4 | | | | | Blue sky | W. H.Lyne. |
| Sheffield | 29.35 | 745.5 | 29.63 | 752.6 | 46.0 | 7.8 | | E | | | 1 | | 8 | | | 0 | 0 | Overcast | W. F. Cooper. |
| Silloth Rectory | 29.59 | 751.6 | 29.62 | 752.3 | 49.7 | 9.8 | 56 | W | | | 2 | | 0 | | | 0 | 0 | Blue sky | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.21 | 741.9 | 29.62 | 752.3 | 47.1 | 8.4 | | W | | | 2 | | 3 | | | | | Blue sky | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.38 | 746.2 | 29.59 | 751.6 | 53.0 | 11.7 | | NW | | | 0–1 | | 7 | | | | | Foggy | C. H. Griffith, F. M. S. |
| Thurso | 29.43 | 747.5 | 29.50 | 749.3 | 49 | 9.4 | | WSW | | | 2 | | 4 | | | | | D. clouds | John Trotter. |
| Truro, Royal Institution | 29.63 | 752.6 | 29.68 | 753.9 | 53 | 11.7 | | NW | | | 7 | | 4 | | | | | D. clouds | W. Newcombe. |
| Valencia, Observatory | 29.66 | 753.4 | 29.69 | 754.1 | 49.3 | 9.6 | | SW | 13 | 5.8 | | | 10 | | | Blank | Blank | Misty | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.90 | 759.4 | 29.94 | 760.5 | 90 | 32.2 | 26 | ESE | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Fine | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | | | 30.01 | 762.2 | 48.0 | 8.9 | 88 | S | | | 3 | 0 | 0 | | | 0.20 | 5.1 | Clear | Francis Abbott, F.R.A.S. |
| Leith, Resaulrig Park | | | 29.60 | 751.8 | 46.5 | 8.1 | | W | | | 1 | | 5k | | | 0 | 0 | Fine | Andrew Gibb. |
| Mauritius, Observatory | 29.85 | 758.1 | 30.03 | 762.8 | 78.7 | 26.0 | 70 | ESE | 16.0 | 7.2 | | 0 | 2 | | ESE | 0.17 | 4.3 | Squally | C. Meldrum. |
| Melbourne, Observatory | 30.08 | 764.0 | 30.17 | 766.3 | 69.0 | 15.0 | 76 | ESE | 5 | 2.2 | | | 0 | | | 0 | 0 | Very fine | R. L. J. Ellery. |
| Monach Lt-house, (Hebrides) | | | 29.52 | 749.8 | 42 | 5.6 | | SW | | | 4 | 5 | 5 | SW | | 0 | 0 | | J. Youngclause. |
| North Unst, (Shetland Is.) | | | 29.44 | 747.8 | 42 | 5.6 | | S | | | 4 | 0 | 6 | Calm | | | | | Robert Burnet. |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Barometer. Corrected (or instrum'tal error and temperature.) Inches. | Barometer. Corrected (or instrum'tal error and temperature.) Millimeters. | Barometer. Reduced to sea-level Inches. | Barometer. Reduced to sea-level Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 42′, E. 29° 11′ | | | 29.92‡ | 760.0‡ | 55 | 12.8 | | NE | | | 1 | | 8 | | | | | D. clouds | Capt. W. J. L. Wharton. |
| Brig Alliance | | | | | | | | | | | | | | | | | | | Capt. W. Scott. |
| S. S. Amanda, N. 38° 00′, W. 9° 37′ | | | 30.11‡ | 764.8‡ | 57 | 13.9 | | NW | | | 5 | | 8 | | | | | Showery | Capt. B. Boyes. |
| Barque Belle-Isle, N. 42° 57′, W. 29° 22′ | | | 29.95‡ | 760.7‡ | 59 | 15.0 | | WSW | | | 5 | | 10 | | | 3 | WSW | Overcast | Capt. A. J. Brown. |
| Ship British Commodore | | | | | | | | | | | | | | | | | | | Capt. J. W. Thorne. |
| —— City of Agra, N. 46° 39′ W. 24° 20′ | | | 29.80‡ | 756.9‡ | 54 | 12.2 | | SE | | | 5 | | 10 | | | | SW | Raining | Capt. Thos. Young. |
| Barque Commewyne | | | | | | | | | | | | | | | | | | | Capt. A. Buchan. |
| Barque Fedalina, N. 16° 40′, W. 49° 55′ | | | 30.07 | 763.8 | 79 | 26.1 | | ENE | | | 5 | | 3 | | | 2 | NNW | D. clouds | Capt. H. L. Fox. |
| Barque Mertole | | | | | | | | | | | | | | | | | | | Capt. E. W. Turner. |
| S. S. Nizam, N. 14° 29′, E. 111° 58′ | | | 29.87‡ | 758.7‡ | 81 | 27.2 | | SE | | | 3 | | 2c | | ESE | | | Blue sky | Capt. Barlow. |
| S. S. Strathleven, N. 41° 55′, W. 9° 38′ | | | 29.93‡ | 760.2‡ | 54 | 12.2 | | WNW | | | 5 | | 8 | | | | | Squally | Capt. C. W. Pearson. |
| S. S. Wyberton | | | | | | | | | | | | | | | | | | | Capt. W.R. McMontry. |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.23 | 666.2 | 29.95 | 760.7 | 66.9 | 20.5 | ..... | SE | ..... | ..... | 2 | 3c;cs | 1k | E | ..... | 0.7 | 17.8 | ..... | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.6 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.30 | 744.1 | 29.34 | 745.3 | 50.9 | 10.5 | 81 | E | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | |
| Faröe | 29.34 | 745.3 | 29.36 | 745.8 | 39.9 | 4.4 | 97 | NNE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | |
| Godthaab, (Greenland) | 29.42 | 747.2 | 29.46 | 748.3 | 19.8 | —6.8 | 73 | NNE | ..... | ..... | 8 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Faröe) | 29.29 | 743.9 | 29.32 | 744.8 | 44.4 | 6.9 | 72 | SW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | |
| Vestervig | 29.24 | 742.8 | 29.41 | 747.1 | 36.7 | 2.6 | 98 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.10 | 739.1 | 29.65 | 753.1 | 52.2 | 11.2 | 63 | NNW | ..... | ..... | 1 | ..... | 8 | ..... | N | 0.142 | 3.6 | Very cloudy | Colliguon, Director. |
| Amiens, Normal School | 29.45 | 748.1 | 29.66 | 760.9 | 50.4 | 10.2 | 86 | W | ..... | ..... | 1 | ..... | 2 | ..... | E | 0.433 | 11.0 | Slightly cl'dy | Bonvallet, Director. |
| Avignon, Normal School | 29.48 | 748.9 | 29.66 | 760.9 | 57.2 | 14 | 62 | NNW | ..... | ..... | 2 | ..... | kn | ..... | NNW | 0 | 0 | ..... | M. Giraud, Director. |
| Bar-sur-Seine | 29.02 | 737.2 | 29.58 | 751.2 | 49.8 | 9.9 | 56 | SSE | ..... | ..... | 1 | ..... | 8kn | ..... | ..... | 0.390 | 9.9 | Very cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.31 | 744.4 | 29.67 | 751.1 | 49.1 | 9.5 | 63 | W | ..... | ..... | 2 | ..... | 8 | ..... | WSW | 0 | 0 | Very cloudy | Frere Eugene Marie, Dir |
| Besançon, Normal School | 28.72 | 729.4 | 29.61 | 752.1 | 47.5 | 8.6 | 70 | SW | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.244 | 6.2 | Covered | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.76 | 730.5 | 29.66 | 753.3 | 45.5 | 7.5 | 77 | W | ..... | ..... | 3 | ..... | n | W | W | 0.717 | 18.2 | ..... | M. Marlot, Director. |
| Bourges, Normal School | 29.04 | 737.7 | 29.60 | 751.8 | 47.8 | 8.8 | 92 | SW | ..... | ..... | 1 | ..... | 10sn | SW | SW | 0.32 | 8. | Raining | A. Waquet, Director. |
| Brest, Naval Observatory | 29.41 | 747.1 | 29.66 | 753.3 | 50.7 | 10.4 | 62 | N | ..... | ..... | 1 | ..... | 9 | ..... | NW | 0.030 | 0.75 | Squally | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.26 | 743.3 | 29.68 | 753.9 | 49.3 | 9.6 | 74 | W | ..... | ..... | 2 | ..... | 5 | NW | W | 0 | 0 | Cloudy | September, Director. |
| Caen, Normal School | 29.49 | 749.0 | 29.62 | 749.9 | 47.8 | 8.8 | 78 | NW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0.165 | 4.2 | Cloudy | M. Lair, Director. |
| Chartres, Normal School | 28.97 | 735.7 | 29.52 | 749.9 | 53.6 | 12 | 95 | SE | ..... | ..... | 1 | ..... | 10 | ..... | S | 0.28 | 7. | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.24 | 742.6 | 29.56 | 750.7 | 46.9 | 8.3 | 78 | NW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | Cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.21 | 716.5 | 29.55 | 750.5 | 51.4 | 10.8 | 63 | E | ..... | ..... | 1 | ..... | 8 | ..... | W | 0.370 | 9.4 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.74 | 730.0 | 29.62 | 752.3 | 39.7 | 4.3 | 87 | NW | ..... | ..... | 1 | ..... | 10 | ..... | NW | 0.484 | 12.3 | Light rain | Dr. Coulet, Director |
| Commune de Gréasque* | 28.41 | 721.7 | 29.56 | 750.7 | 52.3 | 11.3 | 58 | NW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0.24 | 6. | ½ covered | M. Kina, Director. |
| Grenoble, Normal School | 28.81 | 731.7 | 29.57 | 751.0 | 52.9 | 11.6 | 56 | NNW | ..... | ..... | 1 | ..... | 8kn | ..... | NE | 0.610 | 15.50 | Very cloudy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.46 | 748.2 | 29.67 | 753.6 | 52.2 | 11.2 | 57 | NW | ..... | ..... | 3 | ..... | 5 | ..... | N | 0 | 0 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.29 | 744.0 | 29.60 | 751.7 | 50.5 | 10.3 | 64 | W | ..... | ..... | 1 | ..... | 5 | ..... | NW | 0.030 | 0.75 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.65 | 727.6 | 29.56 | 750.8 | 49.1 | 9.5 | 61 | S | ..... | ..... | 2 | ..... | 5k | ..... | S | 0.858 | 21.80 | Cloudy | Baudry, Director. |
| Lorient, Naval Observatory | 29.58 | 751.4 | 29.68 | 753.9 | 52.2 | 11.2 | 61 | W | ..... | ..... | 2 | ..... | ..... | ..... | NW | 0 | 0 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director. |
| Marseilles, Observatory | ..... | ..... | 29.53 | 750.0 | 54.9 | 12.7 | 59 | WNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | The Staff. |
| Mirecourt, Normal School | 28.53 | 724.6 | 29.59 | 751.6 | 44.2 | 6.8 | 79 | NW | ..... | ..... | 1 | ..... | 10 | ..... | SE | 0.51 | 13. | Covered | M. Barbier, Director. |
| Nismes, Normal School | 29.34 | 745.3 | 29.54 | 750.4 | 56.1 | 13.4 | 45 | N | ..... | ..... | 2 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 28.54 | 724.8 | 29.60 | 751.8 | 50.7 | 10.4 | 68 | N | ..... | ..... | 1 | ..... | ..... | N | N | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.68 | 626.8 | ..... | ..... | 28.4 | — 2.0 | 100 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.260 | 6.6 | Covered | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.65 | 753.1 | 29.68 | 753.9 | 56.5 | 13.6 | 62 | NNW | ..... | ..... | 1 | ..... | 2 | NNW | NNW | 0 | 0 | ¼ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.47 | 748.7 | 29.56 | 750.9 | 51.3 | 10.7 | 66 | N | ..... | ..... | 2 | ..... | 8 | ..... | SW | 0 | 0 | Very cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.61 | 752.2 | 29.65 | 753.0 | 48.0 | 8.9 | 78 | NW | ..... | ..... | 4 | ..... | 1 | NW | NW | 0.156 | 3.96 | Clear | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.41 | 746.9 | 29.57 | 751.1 | 47.8 | 8.8 | 71 | SSW | ..... | ..... | 1 | ..... | ..... | ..... | WNW; NW | 0.079 | 2.0 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.75 | 730.3 | 29.82 | 757.3 | 59.0 | 15 | 48 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Huguet, Director. |
| Toulouse, Observatory | 29.00 | 736.6 | 29.72 | 754.9 | 43.2 | 6.2 | 94 | W | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0.059 | 1.5 | Light rain | M. Mercadier Julier. |
| Versailles Observatory | 29.07 | 738.4 | 29.66 | 750.9 | 49.6 | 9.8 | 66 | NNE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0.037 | 0.95 | ..... | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 28.89 | 733.9 | 29.61 | 752.1 | 46.4 | 8 | 59 | NW | ..... | ..... | 2 | ..... | 10 | ..... | NW | 0 | 0 | Covered | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.87 | 758.8 | 29.90 | 759.5 | 79.2 | 26.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.32 | 8. | ..... | L'Abbé Marcl ésai. |
| Lyons Obs'y, (Park Station) | 28.98 | 736.2 | 29.60 | 751.7 | 49.1 | 9.5 | 68 | NW | ..... | ..... | 1 | ..... | 10 | ..... | W | 0.130 | 3.3 | Rainy | Mr. Jays. |
| Mont-Louis | 24.89 | 619.5 | 29.70 | 754.5 | 36.5 | 2.5 | 55 | W | 24.2 | 10.8 | ..... | ..... | 7 | ..... | NW | 0.146 | 3.7 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.55 | 750.5 | 57.6 | 14.2 | 75 | SW | ..... | ..... | 2 | ..... | 10 | ..... | NW | 0.453 | 11.5 | Rainy | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.29 | 744.0 | ..... | ..... | 47.3 | 8.5 | 75 | SW | ..... | ..... | 2 | ..... | 9 | ..... | NNW | 0 | 0 | ..... | Marié Davy, Director. |
| Perpignan | 29.54 | 750.2 | 29.64 | 752.9 | 51.1 | 10.6 | 60 | NE | 15.0 | 6.7 | ..... | ..... | 7 | ..... | NW | 0.079 | 2.0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.22 | 560.4 | ..... | ..... | 20.8 | — 6.2 | ..... | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 2.390 | 60.7 | Snowy | Gen'l de Nansouty. |
| Tours | 29.41 | 746.9 | 29.60 | 751.9 | 51.1 | 10.6 | 70 | N | ..... | ..... | 1 | ..... | 7 | ..... | NNW | 0.134 | 3.4 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.21 | 767.2 | 30.23 | 767.8 | 45.0 | 7.2 | 91 | NNW | 6.9 | 3.1 | ..... | ..... | 10n | ..... | ..... | 0.469 | 11.9 | Raining | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-12 | Clouds. Amount. Up'er 0-10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.57 | 725.7 | 29.40 | 746.7 | 42.8 | 6.0 | 82 | SW | | | 4 | | 10 | W | | 0.118 | 3.0 | Raining | Prof. Dr. Hoh. |
| Berlin | 29.16 | 740.6 | 29.32 | 744.8 | 63.7 | 17.6 | 54 | S | | | 4 | | 8 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 28.98 | 736.0 | 29.50 | 749.3 | 63.5 | 17.5 | 48 | SSE | | | 6 | | 7 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.09 | 738.9 | 29.52 | 749.7 | 42.6 | 5.9 | 80 | SW | | | 2 | 10 | | SW | | 0.012 | 0.3 | | Albert Sens. |
| Cassel | 28.78 | 731.0 | 29.37 | 746.1 | 46.0 | 7.8 | 81 | NNW | | | 3 | | 8 | W | | 0.029 | 0.74 | Raining | Dr. H. Möhl. |
| Crefeld | 29.27 | 743.5 | 29.43 | 747.5 | 39.2 | 4.0 | 88 | NW | | | 5 | | 10 | | | 0.16 | 4. | Rain & snow | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.12 | 739.6 | 29.48 | 748.8 | 44.4 | 6.9 | | WNW | | | 1 | | 10 | | | 0.091 | 2.3 | | Physical Society. |
| Freienwalde on the Oder | | | | | | | | | | | | | | | | | | | Assmann., M. D. |
| Friedrichshafen | 28.12 | 714.1 | 29.54 | 750.4 | 47.7 | 8.7 | 61 | SW | | | 6 | | 8 | SW | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.16 | 740.6 | 29.22 | 742.3 | 56.5 | 13.6 | 74 | WSW | | | 3 | | 8ks | | | 0.008 | 0.2 | Pleasant | Captain F. Hegemann. |
| Kiel | 29.29 | 744.0 | 29.31 | 744.4 | 45.1 | 7.3 | 91 | NNE | | | 1 | | 10 | | | 0.036 | 0.91 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.55 | 750.6 | 29.63 | 752.7 | 61.5 | 16.4 | 67 | SE | | | 7 | | 0 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 29.45 | 748.1 | 67.6 | 19.8 | | SE | | | 7 | | 1 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 28.94 | 735.0 | 29.35 | 745.4 | 55.8 | 13.2 | 66 | SSE | | | 1 | | 7 | | | 0 | 0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.65 | 753.0 | 29.69 | 754.2 | 56.1 | 13.4 | 60 | SE | | | 6-7 | | 0 | | | | | Squally | Skalweit. |
| Neufahrwasser | 29.54 | 750.3 | 29.56 | 750.7 | 64.4 | 18.0 | 45 | S | | | 5 | | 0 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.22 | 742.3 | 29.50 | 749.4 | 65.8 | 18.8 | 43 | SE | | | 8 | | 9 | | | 0.020 | 0.5 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.02 | 737.0 | 29.57 | 751.1 | 45.1 | 7.3 | 68 | W | | | 3 | | 10 | W | | 0.033 | 0.85 | | Imp. University Observatory. |
| Stuttgart | 28.53 | 724.7 | 29.47 | 748.5 | 47.3 | 8.5 | 61 | W | | | 3 | | 10 | | | Inap. | Inap. | | Prof. Schoder. |
| Treves, (Trier) | 28.89 | 736.1 | 29.50 | 749.2 | 42.8 | 6.0 | 76 | SW | | | 6 | | 10 | | | 0.048 | 1.22 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 27.98 | 710.7 | 29.49 | 749.1 | 43.0 | 6.1 | 79 | W | 9 | 4 | | | 10 | | W | 0 | 0 | Misty | Dr. Van Bebber. |
| Wustrow, Naval School | 29.26 | 743.3 | 29.29 | 743.9 | 57.6 | 14.2 | 61 | SE | | | 2 | | 0 | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.50 | 749.3 | 29.89 | 759.2 | 64.4 | 18.0 | | S | | | 3.0 | | | | | | | Hazy | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.80 | 756.8 | 29.85 | 758.2 | 81.8 | 27.7 | 49 | W | 13 | 5.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.29 | 744.0 | 29.75 | 755.6 | 99.6 | 37.6 | 11 | NW | 7.3 | 3.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.71 | 754.7 | 29.75 | 755.7 | 83.6 | 28.7 | 69 | NW | 20 | 8.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | | | | | | | | | | | | | | | | | | | |
| Lahore | 28.99 | 736.4 | 29.71 | 754.7 | 94.1 | 34.5 | 23 | Calm | 1.7 | 0.8 | | | 8 | | | 0 | 0 | | |
| Belgaum | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.79 | 731.3 | 29.67 | 753.6 | 90.6 | 32.6 | 19 | NW | 4.2 | 1.9 | | | | | | 0 | 0 | Blue sky | |
| Agra | 29.17 | 741.0 | 29.72 | 754.8 | 96.6 | 35.9 | 17 | W | | | | | | | | 0 | 0 | | |
| Nagpur | 28.69 | 728.7 | | | | | | N | 3.7 | 1.6 | | | | | | 0 | 0 | Blue sky | |
| Lucknow | 29.34 | 745.2 | 29.71 | 754.6 | 90.2 | 32.3 | 44 | NW | 2.1 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.43 | 747.6 | 29.74 | 755.4 | 91.2 | 32.9 | 33 | Calm | 3.7 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.54 | 750.2 | 29.71 | 754.7 | 90.5 | 32.5 | 28 | Calm | 1.5 | 0.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.74 | 704.7 | 29.71 | 754.5 | 89.8 | 32.1 | 18 | NW | 8.1 | 3.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.66 | 753.4 | 29.74 | 755.5 | 90.5 | 32.5 | 55 | S | 3.1 | 1.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.71 | 754.7 | 29.73 | 755.2 | 88.7 | 31.5 | 36 | WSW | 1.0 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.38 | 746.3 | 29.77 | 756.1 | 86.0 | 30.0 | 20 | NE | 1.8 | 0.8 | | | 0 | | | 0 | 0 | Misty | |
| Chittagong | 29.69 | 754.2 | 29.78 | 756.5 | 83.9 | 28.8 | 75 | SSW | 5.4 | 2.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Sibsagar | 29.42 | 747.2 | 29.75 | 755.7 | 84.8 | 29.3 | 58 | NE | 2.6 | 1.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.46 | 723.8 | 29.79 | 756.5 | 94.4 | 34.7 | 13 | Calm | 2.1 | 0.9 | | | 0 | | | | | | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft.; or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instru'tal error and temperature. Inches. | Barometer. Corrected for instru'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.20 | 741.6 | 29.61 | 752.1 | 55.8 | 13.2 | 65 | SW | 4.3 | 1.9 | ..... | ..... | 6 | ..... | ..... | 1.252 | 31.8 | ..... | Prof. Giovanni Clodig. |
| Milan | 28.99 | 736.3 | 29.50 | 749.3 | 54.9 | 12.7 | 62 | E | ..... | ..... | 2 | ..... | 9 | SSW | ..... | 0.890 | 22.6 | ..... | Prof. Schiaparelli. |
| Padua | 29.46 | 748.3 | 29.57 | 751.1 | 57.0 | 13.9 | 50 | S | 8.1 | 3.6 | ..... | ..... | 10 | SW | ..... | 0.433 | 11.0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.59 | 726.1 | 29.49 | 749.0 | 50.7 | 10.4 | 66 | ESE | 1.8 | 0.8 | ..... | ..... | 5 | E | ..... | 0.630 | 16.0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.36 | 745.8 | 29.56 | 750.7 | 54.5 | 12.5 | 60 | SW | 9.8 | 4.4 | ..... | ..... | 10 | S | ..... | 0.173 | 4.4 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.58 | 700.5 | 29.49 | 749.0 | 49.5 | 9.7 | 64 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.094 | 2.4 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.56 | 750.9 | 29.61 | 752.1 | 55.4 | 13.0 | 73 | S | 14.3 | 6.4 | ..... | ..... | 10 | ..... | ..... | 0.236 | 6.0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.32 | 744.8 | 29.56 | 751.3 | 59.5 | 15.3 | 51 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.996 | 25.8 | ..... | Cav. F. Meucci |
| Leghorn | 29.48 | 748.9 | 29.57 | 751.1 | 58.6 | 14.8 | 60 | S | ..... | ..... | 6 | ..... | 9 | S | ..... | 0.118 | 3.0 | ..... | Prof. P. Monte. |
| Rome | 29.49 | 749.0 | 29.67 | 753.5 | 60.6 | 15.9 | 47 | S | 15.4 | 6.9 | ..... | ..... | 2 | ..... | ..... | 0.134 | 3.4 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.50 | 749.3 | 29.75 | 755.7 | 62.4 | 16.9 | 69 | NNW | 11.2 | 5.0 | ..... | ..... | 10 | W | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.87 | 733.4 | 29.76 | 755.8 | 62.6 | 17.0 | 80 | NW | 2.5 | 1.1 | ..... | ..... | 6 | ..... | ..... | 0.134 | 3.4 | ..... | Prof. D. Conti. |
| Cagliari | 29.43 | 747.4 | 29.62 | 752.3 | 54.3 | 12.4 | 71 | W | ..... | ..... | 4 | ..... | 10 | W | ..... | 0.024 | 0.6 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.52 | 749.7 | 29.77 | 756.1 | 62.2 | 16.8 | 43 | N | 1.8 | 0.8 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.68 | 753.8 | 29.75 | 755.7 | 67.5 | 19.7 | 26 | SE | 8.7 | 3.9 | ..... | ..... | 1 | WNW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.21 | 742.0 | 29.77 | 756.1 | 58.1 | 14.5 | 67 | S | 4.9 | 2.2 | ..... | ..... | 10 | ..... | ..... | 0.425 | 10.8 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.00 | 762.0 | 30.01 | 762.2 | 48.3 | 9.1 | 69 | NE | 7.8 | 3.5 | ..... | ..... | 10s;ck | ..... | ..... | 0.030 | 0.76 | Cloudy | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.76 | 755.9 | 29.97 | 761.2 | 52.7 | 11.5 | 75 | NNE | 5.3 | 2.4 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.86 | 758.4 | 29.93 | 760.2 | 41.9 | 5.5 | 89 | NNE | 4.4 | 2.0 | ..... | ..... | 10s | ..... | NW | 0.375 | 9.52 | Cloudy | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.09 | 637.4 | 30.26 | 768.6 | 45.0 | 7.2 | 42 | Calm | ..... | ..... | 0 | 0 | 1 | ..... | ..... | 0 | 0 | Clear | Prof. L. Perez. |
| Leon | 24.45 | 621.1 | 30.14 | 765.7 | 58.6 | 14.8 | 65 | NW | ..... | ..... | 1 | 2c | 0 | Calm | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.13 | 587.5 | 30.18 | 766.6 | 51.8 | 11.0 | 59 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 60.0 | 10.0 | 51 | Calm | ..... | ..... | 0 | 2c | 0 | SW | ..... | 0 | 0 | Fine | M. V. de Leon, M. E. |
| Tlacotalpam | 30.03 | 762.7 | 30.04 | 763.0 | 71.6 | 22.0 | 82 | W | ..... | ..... | 1 | 0 | 10 | ..... | NW | 0 | 0 | Covered | M. M. Chazaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.45 | 595.7 | 30.22 | 767.5 | 59.0 | 10.0 | 66 | E | 0.2 | 0.1 | ..... | 0 | 0 | ..... | ..... | 0.14 | 3.5 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.39 | 721.1 | 30.04 | 762.9 | 75.2 | 24.0 | 56 | NE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.56 | 750.9 | 29.56 | 750.9 | 43.9 | 6.6 | ..... | NW | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.012 | 0.3 | ..... | |
| Groningen | 29.33 | 744.9 | 29.38 | 746.3 | 37.8 | 3.2 | ..... | NNW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0.228 | 5.8 | ..... | |
| Helder | 29.46 | 748.2 | 29.46 | 748.2 | 37.4 | 3.0 | ..... | NW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.890 | 22.6 | ..... | |
| Hellevoetsluis | 29.52 | 749.8 | 29.52 | 749.8 | 41.5 | 5.3 | 88 | NW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.44 | 747.8 | 29.49 | 749.0 | 39.7 | 4.3 | 91 | NNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.776 | 19.7 | Dull | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.57 | 751.1 | 29.63 | 752.5 | 43.2 | 6.2 | 71 | WNW | 2.5 | 1.1 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Brönø | 29.58 | 751.4 | 29.62 | 752.4 | 42.8 | 6.0 | 60 | SE | 4 | 2 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.41 | 747.0 | 29.56 | 750.8 | 41.7 | 5.4 | 71 | NE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | |
| Tromsö | 29.58 | 751.3 | 29.62 | 752.4 | 35.2 | 1.8 | 78 | SW | 9 | 4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h. 7 p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.91 | 759.8 | 30.11 | 764.7 | 61.2 | 16.2 | 89 | W | 9.8 | 4.4 | ..... | ..... | 9 | ..... | ..... | 0.167 | 4.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.99 | 736.3 | 30.02 | 762.6 | 56.8 | 13.8 | 52 | WNW | 15.0 | 6.7 | ..... | ..... | 6 | NW | ..... | 0.039 | 1.0 | Solar corona | Dr. A.M.R. dos Santos. |
| Funchal, (Madeira) | 30.14 | 765.6 | 30.23 | 767.8 | 63.9 | 17.7 | 54 | SW | 2.5 | 1.1 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.74 | 755.4 | 30.10 | 764.6 | 55.8 | 13.2 | 56 | NW | 13.7 | 6.1 | ..... | ..... | 10 | ..... | ..... | 0.024 | 0.6 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.08 | 764.0 | 30.15 | 765.8 | 64.4 | 18.0 | 88 | W | 13.7 | 6.1 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| Bartholomew Dias | | | | A. G. da Silva Costa, Com'd't. |
| D. Fernando | | | | A.M.de Sande, Com'd't. |
| Duque da Terceira, Santiago, Cape Verd I. | 3 | ..... | D. clouds | C.C.da Fonseca Ferreira, Comd't |
| India | | | | A. D. Pedroso, Com'd't. |
| Mindello | | | | J. F. R. R. Bastos, Com'd't. |
| Quanza, St. Thomas, Gulf of Guinea | 2 | SE | Squally | A.J.de Mattos, Com'd't. |
| Rio Douro | | | | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto de S. Jose de Bissao, Senegambia | | | | |
| Sá da Bandeira | | | D. clouds | A. Ferreira, 2d Lt. |
| Ambrizette, S. 7° 13′, E. 12°52′ | 3 | SW | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | | | | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | 0 | ..... | Blue sky | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.23 | 742.4 | 29.64 | 752.9 | 60.8 | 16.0 | 52 | SE | 18 | 8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.50 | 749.2 | 29.92 | 759.9 | 49.8 | 9.9 | 53 | SE | 11 | 5 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.66 | 753.4 | 29.91 | 759.7 | 46.4 | 8.0 | 63 | SSE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.89 | 759.2 | 29.91 | 759.6 | 43.2 | 6.2 | 63 | S | 11 | 5 | ..... | ..... | 3s | ..... | ..... | ..... | ..... | Light clouds | Central Physical Obs. |
| Kieff | 29.37 | 746.0 | 30.03 | 762.7 | 38.3 | 3.5 | 45 | E | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.96 | 761.1 | 30.04 | 762.9 | 49.5 | 9.7 | 34 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.01 | 762.2 | 30.03 | 762.7 | 39.9 | 4.4 | 54 | NW | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.61 | 752.0 | 30.18 | 766.6 | 38.1 | 3.4 | 35 | ESE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.60 | 751.9 | 29.82 | 757.3 | 30.9 | — 0.6 | 73 | W | 4 | 2 | ..... | ..... | 8 | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 29.92 | 759.9 | 29.94 | 760.4 | 30.2 | — 1.0 | 82 | SSE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing. | Capt. Sseliwerstow. |
| Tiflis | 28.59 | 726.2 | 30.03 | 762.8 | 48.0 | 8.9 | 38 | NW | 4 | 2 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.06 | 763.5 | 29.98 | 761.4 | 38.5 | 3.6 | 58 | W | 18 | 8 | ..... | ..... | 3c;ks | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.54 | 760.3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.82 | 757.4 | 30.10 | 764.5 | 36.9 | 2.7 | 96 | NE | 9 | 4 | ..... | ..... | s | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Ekaterinburg | 29.28 | 743.8 | 30.31 | 769.8 | 24.6 | — 4.1 | 50 | ENE | 13 | 6 | ..... | ..... | 8cs | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Nukuss | 29.52 | 749.8 | 29.76 | 755.9 | 45.3 | 7.4 | 62 | Calm | 0 | 0 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.34 | 719.7 | 29.89 | 759.3 | 57.9 | 14.4 | 92 | NNW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Teich, A. M. |
| Barnaul | 29.52 | 749.7 | 30.05 | 763.2 | 21.4 | — 5.9 | 89 | N | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.02 | 762.6 | 30.35 | 770.8 | 4.5 | —15.3 | 46 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking, (China) | 29.90 | 759.4 | 30.04 | 763.0 | 49.6 | 9.8 | 83 | S | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.97 | 761.2 | 30.07 | 763.7 | 30.0 | — 1.1 | 56 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.54 | 750.3 | 29.65 | 753.0 | 54.3 | 12.4 | 54 | SE | 4.5 | 2.00 | ..... | ..... | 4k | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Directon. |
| Bilbao, Met. Obs'y | 29.81 | 757.1 | 29.87 | 758.6 | 48.2 | 9.0 | 93 | NW | 4.4 | 1.97 | ..... | 1 | 8 | NE | ..... | 0.843 | 21.4 | Raining | Prof. Manuel de Navera |
| Burgos, Met. Obs'y | 26.85 | 682.0 | ..... | ..... | 45.5 | 7.5 | 74 | SW | 9.1 | 4.06 | ..... | ..... | 8 | ..... | ..... | 0.039 | 1.0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Osservatory | 27.62 | 701.6 | ..... | ..... | 53.6 | 12.0 | 44 | W | 24.6 | 11.00 | ..... | 0 | 6 | ..... | ..... | Inap. | Inap. | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 29.66 | 753.3 | 29.81 | 757.1 | 64.6 | 18.1 | 49 | W | 7.6 | 3.41 | ..... | 3 | 4 | SE | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.00 | 736.7 | 29.91 | 759.6 | 62.6 | 11.1 | 84 | NW | 10.5 | 4.7 | ..... | ..... | 10 | ..... | ..... | 0.201 | 5.1 | Rainy | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.95 | 760.8 | 30.02 | 762.4 | 74.0 | 23.3 | 86 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.83 | 757.7 | 29.88 | 759.0 | 85.6 | 29.6 | 69 | ESE | 6.3 | 2.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.01 | 762.2 | 30.11 | 764.8 | 57.7 | 14.3 | 68 | WNW | 15.0 | 6.7 | ..... | 0 | 4 | NW | ..... | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I | 30.00 | 761.9 | 30.09 | 764.2 | 79.9 | 26.6 | 83 | E | 9.5 | 4.25 | ..... | 2c | 2k | E | E | 0 | 0 | Clear | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.6ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instru-m'tal error and temperature. Inches. | Barometer. Corrected for instru-m'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.78 | 756.5 | 29.82 | 757.5 | 33.6 | 0.9 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.276 | 7.0 | ..... | |
| Umea | 29.78 | 755.2 | 29.78 | 756.5 | 41.0 | 5.0 | 72 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.177 | 4.5 | ..... | |
| Hernosand | 29.67 | 753.6 | 29.72 | 754.9 | 34.9 | 1.6 | 89 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.42 | 747.3 | 29.60 | 751.8 | 43.2 | 6.2 | 82 | SSE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.051 | 1.3 | ..... | |
| Wisby | 29.54 | 750.4 | 29.60 | 751.9 | 48.2 | 9.0 | 71 | S | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0.004 | 0.1 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.52 | 749 9 | 29.60 | 751.8 | 37.2 | 2.9 | 97 | E | 4.7 | 2.1 | ..... | ..... | 10 | ..... | ..... | 0.008 | 0.20 | Foggy | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.15 | 715.1 | 29.59 | 751 5 | 51.3 | 10.7 | 48 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.409 | 10.4 | Covered | The Observatory. |
| Zurich | 27.94 | 709.7 | 29.60 | 751.9 | 47.3 | 8.5 | 62 | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —0.1 mm.; Thermometer, +0.5 Cent.; Relative Humidity, —10 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.92 | 760.0 | 55.4 | 13.0 | 59 | NE | 6 | 2.5 | ..... | ..... | 1 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.35 | 770.8 | 77.0 | 25.0 | ..... | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.80 | 756.8 | 63.7 | 17.6 | ..... | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.90 | 759.4 | 30.02 | 762.4 | 68.7 | 20.4 | 61 | SW | ..... | ..... | 2 | ..... | 3ks | ..... | SW | 0.016 | 0.04 | D. Clouds | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.02 | 737.1 | 29.09 | 738.9 | 14.3 | — 9.8 | 80 | NW | 13 | 5.8 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | Hon. J. Ferguson. |
| Brockville, Ontario | 29.26 | 743.2 | 29.58 | 751.3 | 19 | — 7.2 | ..... | W | 1 | 0.4 | ..... | ..... | 8s | ..... | W | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 29.04 | 737.6 | 29.10 | 739.1 | 14 | —10.0 | 80 | SW | 18 | 8.0 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 29.11 | 739.4 | 29.15 | 740.4 | 21 | — 6.1 | 97 | SW | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.002 | 0.05 | Light snow | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.27 | 743.4 | 29.48 | 748.8 | 16.0 | — 8.9 | 77 | W | ..... | ..... | 3 | ..... | 10s | ..... | ..... | 0.03 | 0.8 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | 29.98 | 761.5 | 30.03 | 762.8 | 51.3 | 10.7 | 100 | Calm | 0 | 0 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Overcast | W. H. Bevis. |
| *Father Point, Quebec | 29.98 | 736.1 | 29.00 | 736.6 | 13 | —10.6 | 98 | W | 55 | 24.6 | ..... | ..... | 10n | ..... | ..... | 0.20 | 5.1 | Light snow | J. McWilliams. |
| Fredericton, N. B | 29.18 | 741.2 | 29.25 | 742.9 | 17.0 | — 8.3 | 67 | W | 17 | 7.6 | ..... | ..... | 10n | ..... | ..... | 0.64 | 1.0 | Light snow | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.60 | 754.1 | 30.05 | 778.5 | — 8 | —22.2 | 100 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Stewart. |
| Granton, Ontario | 28.53 | 724.6 | 29.70 | 754.4 | 19 | — 7.2 | ..... | NW | ..... | ..... | 3 | ..... | 10n | ..... | ..... | Inap. | Inap. | Snowing | James Grant. |
| *Halifax, N. S | 29.11 | 739.4 | 29.25 | 742.9 | 32 | 0.0 | 82 | W | 28 | 12.5 | ..... | ..... | 10ks | ..... | W | Inap. | Inap. | Cloudy | F. Allison, M. A. |
| Hamilton, Ontario | 29.28 | 743.7 | 29.67 | 753.6 | 24.7 | — 4.1 | 76 | W | ..... | ..... | 1 | 8cs | 0 | W | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.21 | 741.9 | 29.57 | 751.1 | 20 | — 6.7 | 93 | SW | 16 | 7.2 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.11 | 739.4 | 29.15 | 740.4 | 32.2 | 0.1 | 79 | W | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.01 | 0.3 | Snowy | C. H. Rigby. |
| Moose Factory, Ontario | 29.45 | 748.0 | 29.48 | 748.8 | 12.9 | —10.6 | 96 | NW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.30 | 7.6 | Snowing | J. R. Nason. |
| *Montreal, Quebec | 29.24 | 742.7 | 29.46 | 748.3 | 17 | — 8.3 | 65 | W | 20 | 8.9 | ..... | ..... | 10n | ..... | ..... | 0.11 | 2.8 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 28.91 | 734.3 | 29.05 | 753.1 | 12 | —11.1 | 71 | NW | 11 | 4.9 | ..... | 2cs | 2ks | NW | W | 0 | 0 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 28.80 | 731.5 | 29.59 | 751.6 | 19.4 | — 7.0 | 75 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 28.95 | 735.3 | 29.68 | 753.9 | 22 | — 5.6 | 72 | NW | 8 | 3.6 | ..... | 10k | 0 | NW | ..... | Inap. | Inap. | Cloudy | H. Morgan. |
| Port Hastings, N. S | 29.12 | 739.6 | 29.17 | 740.9 | 32.4 | 0.2 | ..... | W | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.04 | 737.6 | 29.73 | 755.1 | 20 | — 6.7 | 82 | W | 20 | 8.9 | ..... | ..... | 10n | ..... | W | Inap. | Inap. | Cloudy | M. Payne. |
| *Quebec, Quebec | 28.93 | 734.8 | 29.28 | 743.7 | 8 | —13.3 | 100 | NW | ..... | ..... | 8 | ..... | 10n | ..... | NW | 0.30 | 7.6 | Heavy snow | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.10 | 739.1 | 29.59 | 751.6 | 8 | —13.3 | 78 | NW | 12 | 5.4 | ..... | ..... | 8s | ..... | NW | Inap. | Inap. | Light snow | W. H. McIntyre. |
| St. Andrews, N. B | 29.25 | 742.9 | 29.30 | 744.2 | 26 | — 3.3 | 75 | W | ..... | ..... | 4 | ..... | 10n | ..... | ..... | Inap. | Inap. | Light snow | Dr. Gove. |
| St. John, N. B | 29.12 | 739.6 | 29.29 | 744.0 | 24 | — 4.4 | 61 | SW | 29 | 13.0 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | G. Murdock, C. E. |
| *Saugeen, Ontario | 28.93 | 734.8 | 29.69 | 754.1 | 15 | — 9.4 | 93 | N | 9 | 4.0 | ..... | ..... | 10s | ..... | ..... | 0.17 | 4.3 | Light snow | K. Stewart. |
| Stayner, Ontario | 28.80 | 731.5 | 29.63 | 752.6 | 15 | — 9.4 | 93 | N | 10 | 4.5 | ..... | ..... | 10n | ..... | N | 0.03 | 0.8 | Light snow | R. J. Cole. |
| Stratford, Ontario | 28.29 | 718.6 | 29.65 | 753.1 | 18.7 | — 7.4 | 88 | NW | 15.0 | 6.7 | ..... | ..... | 10s | ..... | ..... | 0.10 | 2.5 | Light snow | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.14 | 740.1 | 29.18 | 741.2 | 33 | 0.6 | 78 | SW | 16 | 7.2 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Light snow | T. C. Hill. |
| *Toronto, Ontario | 29.22 | 742.2 | 29.63 | 752.6 | 24 | — 4.4 | 65 | W | 20 | 8.9 | ..... | ..... | 10ks | ..... | W | Inap. | Inap. | Cloudy | Magnetic Observatory. |
| Windsor, N. S | 29.15 | 740.4 | 29.24 | 742.7 | 28.5 | — 1.9 | 83 | W | 22 | 9.8 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | 29.23 | 742.4 | ..... | ..... | 35.0 | 1.7 | 90 | SW | ..... | ..... | ..... | 10k | 10s | ..... | ..... | 0.01 | 0.3 | Cloudy | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.38 | 746.2 | 29.61 | 752.1 | 30 | — 1.1 | 57 | W | 4 | 1.8 | ..... | 8k | 0 | W | ..... | Inap. | Inap. | Fair | |
| Alpena, Michigan | 29.07 | 738.4 | 29.76 | 755.9 | 15 | — 9.4 | 82 | NW | 18 | 8.0 | ..... | ..... | 10n | ..... | Calm | 0.03 | 0.8 | Light snow. | |
| Atlanta, Georgia | 28.72 | 729.5 | 29.86 | 758.4 | 50 | 10.0 | 58 | W | 14 | 6.3 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 29.62 | 752.3 | 29.63 | 752.6 | 43 | 6.1 | 67 | SE | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Augusta, Georgia | 29.72 | 754.9 | 29.90 | 759.4 | 46 | 7.8 | 69 | SW | 8 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 29.51 | 749.5 | 29.56 | 750.8 | 42 | 5.6 | 74 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Barnegat, New Jersey | 29.58 | 751.3 | 29.60 | 751.8 | 42 | 5.6 | 66 | S | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 28.52 | 724.4 | 30.38 | 771.6 | 12 | —11.1 | 90 | E | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boerne, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Boise City, Idaho | 27.16 | 689.8 | 30.12 | 765.0 | 49 | 9.4 | 78 | SE | 4 | 1.8 | ..... | 5k | 0 | SW | ..... | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.40 | 746.7 | 29.56 | 750.8 | 31 | — 0.6 | 58 | W | 19 | 8.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Brackettville, Texas | 28.95 | 735.3 | 29.98 | 761.5 | 55 | 12.8 | 68 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 29.40 | 746.7 | 30.53 | 775.4 | 6 | —14.4 | 90 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Brownsville, Texas | 30.01 | 762.2 | 30.05 | 763.3 | 57 | 13.9 | 58 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 28.90 | 734.0 | 29.62 | 752.3 | 22 | — 5.6 | 72 | SW | 8 | 3.6 | ..... | ..... | 10n | ..... | W | Inap. | Inap. | Light snow. | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 63 | 17.2 | Inap. | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.20 | 741.7 | 29.49 | 749.0 | 26 | — 3.3 | 63 | SW | 4 | 1.8 | ..... | 5c | 2s | W | Calm | 0.02 | 0.5 | Fair | |
| Cairo, Illinois | 29.85 | 758.2 | 30.27 | 768.8 | 32 | 0.0 | 50 | NW | 14 | 6.3 | ..... | 0 | 5ks | ..... | NW | 0 | 0 | Fair | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.22 | 640.6 | 30.02 | 762.5 | 52 | 11.1 | 54 | E | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 41 | 5.0 | 83 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Campo, California | 27.42 | 696.5 | 29.99 | 761.7 | 35 | - 1.7 | 90 | SW | 3 | 1.3 | ..... | 8cs | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Cape Hatteras, N. Carolina | 29.79 | 756.7 | 29.80 | 756.9 | 54 | 12.2 | 87 | SW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Cape Henry, Virginia | 29.64 | 752.8 | 29.66 | 753.4 | 48 | 8.9 | 63 | S | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 29.79 | 756.7 | 29.80 | 756.9 | 56 | 13.3 | 63 | SW | 28 | 12.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape May, New Jersey | 29.58 | 751.3 | 29.60 | 751.8 | 44 | 6.7 | 76 | SE | 22 | 9.8 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Castroville, Texas | 29.32 | 744.7 | 30.03 | 762.8 | 50 | 10.0 | 72 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 29.87 | 758.7 | 29.92 | 760.0 | 55 | 12.8 | 56 | SW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Cheyenne, Wyoming | 24.10 | 612.1 | 30.04 | 763.0 | 23 | — 5.0 | 86 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.34 | 745.2 | 30.06 | 764.0 | 18 | — 7.8 | 84 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.31 | 7.9 | Cloudy | |
| Cincinnati, Ohio | 29.35 | 745.5 | 30.04 | 763.0 | 25 | — 3.9 | 62 | NW | 15 | 6.7 | ..... | 4k | 0 | NW | ..... | 0.07 | 1.8 | Fair | |
| Cleveland, Ohio | 29.02 | 737.1 | 29.78 | 756.4 | 21 | — 6.1 | 86 | NW | 20 | 8.9 | ..... | ..... | 10n | ..... | NW | 0.17 | 4.3 | Light snow. | |
| Coleman City, Texas | 28.28 | 718.3 | 29.98 | 761.5 | 46 | 7.8 | 84 | Calm | 0 | 0 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| Columbus, Ohio | 29.03 | 737.3 | 29.92 | 760 0 | 20 | — 6.7 | 70 | NW | 23 | 10.3 | ..... | ..... | 10n | ..... | NW | 0.13 | 3.3 | Light snow. | |
| Concho, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Corsicana, Texas | 29.66 | 753.4 | 30.14 | 765.5 | 48 | 8.9 | 49 | N | 4 | 1.8 | ..... | 1cs | 0 | NW | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.56 | 750.8 | 30.24 | 768.1 | 22 | — 5.6 | 58 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Deadwood, Dakota | 25.48 | 647.2 | ..... | ..... | 22 | — 5.6 | 72 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Decatur, Texas | 29.02 | 737.1 | 30.23 | 767.8 | 45 | 7.2 | 76 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.37 | 746.0 | 30.20 | 767.1 | 40 | 4.4 | 56 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.88 | 631.9 | 30.19 | 764.5 | 29 | — 1.7 | 78 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Des Moines, Iowa | 29.42 | 747.2 | 30.38 | 771.6 | 19 | — 7.2 | 69 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 29.09 | 738.9 | 29.79 | 756.7 | 21 | — 6.1 | 86 | NW | 14 | 6.3 | ..... | ..... | 10s | ..... | NW | 0.01 | 0.3 | Cloudy | |
| Dodge City, Kansas | 27.71 | 703.8 | 30.20 | 767.1 | 19 | — 7.2 | 69 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.48 | 748.8 | 30.23 | 767.8 | 20 | — 6.7 | 70 | N | 12 | 5.4 | ..... | 1c | 0 | Calm | ..... | 0.03 | 0.8 | Clear | |
| Duluth, Minnesota | 29.54 | 750.3 | 30.28 | 769.1 | 12 | —11.1 | 61 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.27 | 743.4 | 30.02 | 762.5 | 52 | 11.1 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.25 | 742.9 | 29.32 | 744.7 | 26 | — 3.3 | 81 | SW | 18 | 8.0 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Light snow. | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 67 | 19.4 | 60 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| El Paso, Texas | 26.14 | 663.9 | ..... | ..... | 52 | 11.1 | 53 | W | 6 | 2.7 | ..... | 1c | 0 | W | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 28.96 | 735.6 | 29.70 | 754.4 | 22 | — 5.6 | 86 | N | 15 | 6.7 | ..... | ..... | 10s | ..... | NW | 0.05 | 1.3 | Cloudy | |
| Escanaba, Michigan | 29.24 | 742.7 | 29.93 | 760.2 | 17 | — 8.3 | 67 | NW | 22 | 9.8 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Florence, Arizona | 28.49 | 723.6 | 30.09 | 764.3 | 55 | 12.8 | 68 | NW | 1 | 0.4 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Fort Buford, Dakota | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Craig, New Mexico | 25.54 | 648.7 | 29.61 | 752.1 | 40 | 4.4 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.26 | 641.6 | 30.22 | 767.6 | 60 | 15.6 | 39 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.74 | 755.4 | 30.31 | 769.9 | 35 | 1.7 | 36 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.86 | 733.0 | 30.16 | 766.1 | 46 | 7.8 | 46 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.57 | 700.3 | ..... | ..... | 26 | — 3.3 | 76 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort McKavett, Texas | 29.79 | 756.7 | 29.74 | 755.4 | 46 | 7.8 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 29.00 | 736.6 | 30.17 | 766.3 | 37 | 2.8 | 45 | N | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Stevenson, Dakota | 28.52 | 724.4 | ..... | ..... | 14 | —10.0 | 63 | SE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Fredericksburg, Texas | 28.34 | 719.8 | 29.89 | 759.2 | 62 | 16.7 | 72 | S | 1 | 0.4 | ..... | 0 | 5s | ..... | ..... | 0 | 0 | Fair | |
| Galveston, Texas | 30.05 | 763.3 | 30.10 | 764.5 | 60 | 15.6 | 77 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Graham, Texas | 29.02 | 738.6 | 30.17 | 766.3 | 46 | 7.8 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.23 | 742.4 | 29.91 | 759.7 | 23 | — 5.0 | 86 | N | 24 | 10.7 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Light snow. | |
| Indianapolis, Indiana | 29.23 | 742.4 | 30.06 | 763.5 | 23 | — 5.0 | 66 | NW | 16 | 7.2 | ..... | 5k | 0 | NW | ..... | 0.09 | 2.3 | Clearing. | |
| Indianola, Texas | 30.07 | 763.8 | 30.10 | 764.5 | 64 | 17.8 | 63 | S | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Jacksonville, Florida | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Keokuk, Iowa | 29.99 | 761.7 | 30.02 | 762.5 | 55 | 12.8 | 68 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0.21 | 5.3 | Clear | |
| Key West, Florida | 29.61 | 752.1 | 30.27 | 768.8 | 24 | — 4.4 | 74 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Kittyhawk, North Carolina | 29.99 | 761.7 | 30.02 | 762.5 | 76 | 24.4 | 82 | SW | 2 | 0.9 | ..... | 8k | 0 | SW | ..... | 0 | 0 | Fair | |
| Knoxville, Tennessee | 29.70 | 754.4 | 29.73 | 755.1 | 50 | 10.0 | 72 | SW | 16 | 7.2 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 28.95 | 735.3 | 29.98 | 761.5 | 36 | 2.2 | 53 | NW | 16 | 7.2 | ..... | 0 | 1ks | ..... | NW | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 29.47 | 748.5 | 30.20 | 766.6 | 17 | — 8.3 | 51 | NW | 14 | 6.3 | ..... | 2c | 0 | NW | ..... | 0.01 | 0.3 | Clear | |
| Laredo, Texas | 26.08 | 662.4 | 30.23 | 767.8 | 45 | 7.2 | 84 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.48 | 748.8 | 30.40 | 772.1 | 21 | — 6.1 | 57 | N | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.68 | 753.9 | 30.02 | 762.5 | 51.0 | 10.6 | 82 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Louisville, Kentucky | 29.50 | 749.3 | 30.09 | 764.3 | 27 | — 2.8 | 53 | NW | 20 | 8.9 | ..... | 2k | 8s | NW | Calm | Inap. | Inap. | Cloudy | |
| Lynchburg, Virginia | 28.88 | 733.5 | 29.54 | 750.3 | 48 | 8.9 | 30 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Madison, Wisconsin | 29.08 | 738.6 | 30.15 | 765.8 | 14 | —10.0 | 64 | NW | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0.40 | 10.2 | Clear | |
| Marquette, Michigan | 29.20 | 741.7 | 29.95 | 760.7 | 17 | — 8.3 | 83 | NW | 20 | 8.9 | ..... | ..... | 10s | ..... | NW | 0.04 | 1.0 | Cloudy | |
| Mason, Texas | 28.43 | 722.1 | 30.24 | 768.1 | 42 | 5.6 | 91 | Calm | 0 | 0 | ..... | 2cs | 0 | W | ..... | 0 | 0 | Fair | |
| Memphis, Tennessee | 29.89 | 759.2 | 30.23 | 767.8 | 38 | 3.3 | 45 | N | 14 | 6.3 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Milwaukee, Wisconsin | 29.26 | 743.2 | 30.03 | 762.8 | 18 | — 7.8 | 84 | NW | 24 | 10.7 | ..... | 0 | 8s | ..... | Calm | 0.15 | 3.8 | Cloudy | |
| Mobile, Alabama | 30.04 | 763.0 | 30.08 | 764.0 | 52 | 11.1 | 66 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.79 | 756.7 | 30.03 | 762.8 | 49 | 9.4 | 63 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.46 | 722.9 | 29.49 | 749.0 | 41 | 5.0 | 49 | SW | 27 | 12.1 | ..... | ..... | 8ks | ..... | SW | 0 | 0 | Cloudy | |
| Mt. Washington, N. H. | 22.63 | 574.8 | 28.99 | 736.3 | 4 | —15.6 | 100 | NW | 144 | 64.5 | ..... | ..... | Fog | ..... | NW | 0 | 0 | Foggy | |
| Nashville, Tennessee | 29.58 | 751.3 | 30.15 | 765.8 | 34 | 1.1 | 52 | NW | 9 | 4.0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 29 53 | 750.0 | 29.64 | 752.8 | 40 | 4.4 | 48 | SW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New London, Connecticut | 29.60 | 751.8 | 29.65 | 753.1 | 37 | 2.8 | 53 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Orleans, Louisiana | 30.03 | 762.8 | 30.09 | 764.3 | 58 | 14.4 | 64 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.57 | 751.1 | 29.62 | 752.3 | 32 | 0.0 | 50 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| New York, New York | 29.47 | 748.5 | 29.64 | 752.8 | 35 | 1.7 | 45 | S | 4 | 1.8 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Smoky | |
| Norfolk, Virginia | 29.60 | 751.8 | 29.66 | 753.4 | 47 | 8.3 | 62 | SW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.38 | 695.4 | 30.18 | 766.6 | 19 | — 7.2 | 69 | SE | 8 | 3.6 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 30.06 | 763.5 | 30.10 | 764.5 | 50.2 | 10.1 | 93 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Cloudy | |
| Omaha, Nebraska | 29.22 | 742.2 | 30.43 | 772.9 | 16 | — 8.9 | 66 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Oswego, New York | 29.27 | 743.4 | 29.59 | 751.6 | 30 | — 1.1 | 89 | NW | 10 | 4.5 | ..... | ..... | 10s | ..... | W | 0.01 | 0.3 | Cloudy | |
| Pembina, Dakota | 29.64 | 752.8 | 30.00 | 777.2 | — 6 | —21.1 | 100 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pa | 29.52 | 749.8 | 29.58 | 751.3 | 39 | 3.9 | 55 | S | 7 | 3.1 | ..... | 2cs | Haze | W | Calm | 0 | 0 | Fair | |
| Phœnix, Arizona | 29.83 | 757.7 | 30.65 | 778.5 | 53 | 11.7 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.78 | 451.6 | 29.99 | 761.7 | 18 | — 7.8 | 22 | S | 8 | 3.6 | ..... | 2cs | 0 | Calm | ..... | 0.03 | 0.8 | Fair | |
| Ploche, Nevada | 24.08 | 611.6 | 29.86 | 758.2 | 35 | 1.7 | 90 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear | |
| Pittsburg, Pennsylvania | 28.77 | 730.7 | 29.60 | 751.8 | 26 | — 3.3 | 88 | NW | 16 | 7.2 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Light snow. | |
| Port Huron, Michigan | 29.05 | 737.9 | 29.74 | 755.4 | 20 | — 6.7 | 85 | NW | 12 | 5.4 | ..... | ..... | 10ks | ..... | NW | 0 | 0 | Cloudy | |
| Portland, Maine | 29.37 | 746.0 | 29.42 | 747.2 | 32 | 0.0 | 59 | W | 16 | 7.2 | ..... | 2k | 0 | W | ..... | 0 | 0 | Fair | |
| Portland, Oregon | 30.07 | 763.8 | 30.17 | 766.3 | 51.5 | 10.8 | 97 | SW | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | Light rain | |
| Prescott, Arizona | 24.76 | 628.9 | 30.12 | 765.0 | 34 | 1.1 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.10 | 739.1 | 29.92 | 760.0 | 57 | 13.9 | 57 | W | 12 | 5.4 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Punta Rassa, Florida | 30.01 | 762.2 | 30.03 | 762.8 | 72 | 22.2 | 80 | E | 3 | 1.3 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Red Bluff, California | 29.68 | 753.9 | 30.04 | 763.0 | 55 | 12.8 | 87 | SE | 3 | 1.3 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Cloudy | |
| Rio Grande City, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Rochester, New York | 28.97 | 735.8 | 29.61 | 752.1 | 24 | — 4.4 | 87 | W | 8 | 3.6 | ..... | ..... | 10n | ..... | W | 0.08 | 2.0 | Light snow | |
| Roseburg, Oregon | 29.55 | 750.6 | 30.12 | 765.0 | 53.0 | 11.7 | 96 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0.38 | 9.7 | Cloudy | |
| Sacramento, California | 29.94 | 760.5 | 30.02 | 762.5 | 56.5 | 13.6 | 84 | Calm | 0 | 0 | ..... | 0 | 2ks | ..... | S | 0 | 0 | Fair | |
| St. Louis, Missouri | 29.66 | 753.4 | 30.27 | 768.8 | 26 | — 3.3 | 63 | N | 20 | 8.9 | ..... | 0 | 5s | ..... | NW | Inap. | Inap. | Fair | |
| St. Marks, Florida | 30.04 | 763.0 | 30.06 | 763.5 | 46 | 7.8 | 92 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.41 | 747.0 | 30.31 | 769.9 | 16 | — 8.9 | 82 | NW | 16 | 7.2 | ..... | 1cs | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Salt Lake City, Utah | 25.71 | 653.0 | 30.04 | 763.0 | 44 | 6.7 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | s | ..... | Inap. | Inap. | Clear | |
| San Antonio, Texas | 29.39 | 746.5 | 29.99 | 761.7 | 49 | 9.4 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.96 | 761.0 | 30.04 | 763.0 | 52 | 11.1 | 86 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.14 | 740.1 | 29.86 | 758.2 | 21 | — 6.1 | 86 | NW | 32 | 14.3 | ..... | ..... | 10ks | ..... | NW | 0.25 | 6.3 | Cloudy | |
| Sandy Hook, New Jersey | 29.61 | 752.1 | 29.64 | 752.8 | 39 | 3.9 | 46 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Francisco, California | 29.97 | 761.2 | 30.04 | 763.0 | 56.8 | 13.8 | 75 | W | 2 | 0.9 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Santa Fé, New Mexico | 28.20 | 691.6 | 29.83 | 757.7 | 40 | 4.4 | 82 | N | 5 | 2.2 | ..... | 0 | 5ks | ..... | SW | 0.17 | 4.3 | Fair | |
| Savannah, Georgia | 29.88 | 758.9 | 29.98 | 761.5 | 57 | 13.9 | 52 | SW | 9 | 4.0 | ..... | 0 | Sm'c | ..... | Calm | 0.02 | 0.5 | Clear | |
| Shreveport, Louisiana | 29.88 | 758.9 | 30.11 | 764.8 | 51 | 10.6 | 79 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Silver City, New Mexico | 24.29 | 617.0 | 30.48 | 774.2 | 45 | 7.2 | 76 | NW | 7 | 3.1 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Smithville, North Carolina | 29.85 | 758.2 | 29.89 | 759.2 | 54 | 12.2 | 61 | SW | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.46 | 748.3 | 29.59 | 751.6 | 35 | 1.7 | 70 | SW | 4 | 1.8 | ..... | 0 | 2ks | ..... | W | 0 | 0 | Fair | |
| Stockton, Texas | 26.96 | 684.8 | 29.96 | 761.0 | 50 | 10.0 | 58 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.49 | 749.0 | 29.54 | 750.3 | 31 | — 0.6 | 58 | W | 25 | 11.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Toledo, Ohio, | 29.14 | 740.1 | 29.86 | 758.4 | 23 | — 5.0 | 86 | W | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.39 | 9.9 | Cloudy | |
| Tucson, Arizona | 27.54 | 699.5 | 30.09 | 764.3 | 51 | 10.6 | 39 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.69 | 754.1 | 30.18 | 766.6 | 54.0 | 12.2 | 74 | SW | 12 | 5.4 | ..... | ..... | 10ks | ..... | W | 0.03 | 0.8 | Cloudy | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 33 | 0.6 | 89 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0.12 | 3.0 | Cloudy | |
| Uvalde, Texas | 29.21 | 741.9 | 30.04 | 763.0 | 49 | 9.4 | 57 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.85 | 758.2 | 30.12 | 765.0 | 51 | 10.6 | 65 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Virginia City, Montana | 24.24 | 615.7 | 29.72 | 754.9 | 39 | 3.9 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.64 | 752.8 | 30.02 | 762.5 | 51.4 | 10.7 | 94 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Dense fog | |
| Washington, D. C | 29.41 | 747.0 | 29.83 | 760.0 | 40 | 4.4 | 82 | S | 8 | 3.6 | ..... | Haze | 2s.sm | ..... | SW | 0 | 0 | Smoky | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 55 | 12.8 | 50 | Calm | ..... | ..... | 0 | 8c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 29.75 | 755.6 | 29.83 | 757.7 | 51 | 10.6 | 46 | SW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.67 | 652.0 | 30.03 | 762.8 | 47 | 8.3 | 77 | SW | 5 | 2.2 | ..... | 8k | 2s | SW | SW | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 29.58 | 751.3 | 29.62 | 752.3 | 33 | 0.6 | 79 | W | 28 | 12.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yankton, Dakota | 29.12 | 739.6 | 30.57 | 776.5 | 8.5 | —13.1 | 67 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yuma, Arizona | 29.81 | 757.2 | 29.98 | 761.5 | 55 | 12.8 | 74 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.03 | 727.2 | 30.13 | 765.3 | 28.8 | — 1.8 | 57 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba. W. I | 29.95 | 760.7 | 30.00 | 762.0 | 77 | 25.0 | 76 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.22 | 640.6 | ..... | ..... | 68.0 | 20.0 | 80 | Calm | 0 | 0 | ..... | 2cs | 7s;ks | ..... | ..... | 0 | 0 | ..... | Thomas Herran. |
| Navassa, W. I | 29.94 | 760.5 | 30.02 | 762.5 | 81 | 27.2 | ..... | E | 6.6 | 3.0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Hazy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.01 | 762.2 | 30.01 | 762.2 | 81 | 27.2 | 83 | NE | ..... | ..... | 3 | 3c | 5k | E | ..... | 0 | 0 | Fair | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | 29.83 | 757.7 | 29.89 | 759.2 | —15.0 | —26.1 | 72 | NW | 9 | 4.0 | ..... | 0 | 1s | ..... | NW | 0 | 0 | Fair | J. Fortescue & W. Wood |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,393 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.3 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,037.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.855 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.83 in.; Santa Fé, 6.64 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.00 | 762.0 | 55 | 12.8 | 51 | 10.6 | 93 | WSW | 3 | 1.3 | ..... | ..... | 8 | ..... | WSW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Pensacola, Fla. | 30.15 | 765.8 | 54 | 12.2 | 54 | 12.2 | 87 | NW | 3 | 1.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 29.57 | 751.1 | 69 | 20.6 | 29 | — 1.7 | 81 | W | 10 | 4.5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan.....* | 29.90‡ | 759.4‡ | ..... | ..... | 43 | 6.1 | 79 | NE | ..... | ..... | 3 | ..... | 10ks | ..... | W | 0.99 | 25.1 | ..... | ..... | Cloudy..... | |
| Adams, Panama .....* | 29.95 | 760.7 | 80 | 26.7 | 79 | 26.1 | 91 | NW | ..... | ..... | 2 | ..... | 10 | ..... | NW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Alaska, N. 57° 00′, W. 135° 37′..... | 29.80‡ | 756.9‡ | ..... | ..... | 37 | 2.8 | 90 | WSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Long | SW | Misty..... | |
| Alliance, Naples, Italy..... | 29.76‡ | 755.8‡ | ..... | ..... | 61 | 16.1 | 61 | SW | ..... | ..... | 3-4 | ..... | 8 | ..... | S;W | ..... | ..... | ..... | ..... | Cloudy..... | |
| Ashuelot, Hong-Kong, China. ...* | 29.86‡ | 758.4‡ | ..... | ..... | 78 | 25.6 | 86 | SE | ..... | ..... | 3 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy ..... | |
| Canonicus, New Orleans, La.....* | 30.08 | 764.0 | 44 | 6.7 | 57 | 13.9 | 87 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Colorado, New York, N. Y..... | 29.63 | 752.6 | 40 | 4.4 | 39 | 3.9 | 41 | SSE | 3 | 1.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Constitution Lisbon, Portugal..... | 30.09‡ | 764.3‡ | ..... | ..... | 59 | 15.0 | 70 | WNW | ..... | ..... | 3 | ..... | 8 | ..... | NW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Despatch, Genoa, Italy..... | 29.55‡ | 750.6‡ | ..... | ..... | 59 | 15.0 | 70 | S | ..... | ..... | 3 | ..... | 5 | ..... | S | ..... | ..... | Smooth | ..... | Fair..... | |
| Franklin, Norfolk, Va.....* | 29.79 | 756.7 | 61 | 16.1 | 49 | 9.4 | 64 | SW | 13 | 5.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Gettysburg, Genoa, Italy ..... | 29.67‡ | 753.6‡ | ..... | ..... | 62 | 16.7 | 66 | SSW | ..... | ..... | 4 | ..... | 8 | ..... | S;W | 0.7 | 18. | ..... | S | Cloudy ..... | |
| Hartford, Montevideo, Uruguay.* | 30.04 | 763.0 | 70 | 21.1 | 71 | 21.7 | 71 | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0.06 | 1.5 | ..... | ..... | Clear..... | |
| Michigan, Erie, Pa.....† | 29.84‡ | 757.9‡ | ..... | ..... | 23 | — 5.0 | 89 | NE | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Monocacy, Shanghai, China.....* | 30.20‡ | 767.1‡ | ..... | ..... | 46 | 7.8 | 92 | N | ..... | ..... | 2 | ..... | 10 | ..... | N | ..... | ..... | ..... | ..... | Rainy ..... | |
| Monongahela Yokohama, Japan .....* | 29.88‡ | 758.9‡ | ..... | ..... | 45 | 7.2 | 61 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | heavy | heavy | Mod'ate | N | Overcast..... | |
| New Hampshire, Port Royal, S. C.....* | 29.97 | 761.2 | 56 | 13.3 | 57 | 13.9 | 58 | W | 9 | 4.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Onward, Callao, Peru.....†* | 30.02 | 762.5 | ..... | ..... | 65 | 18.3 | 92 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | WNW | Misty..... | |
| Palos, Tientsin, China.....* | 30.11 | 764.8 | 43 | 6.1 | 44 | 6.7 | 60 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 44 | 6.7 | 61 | WNW | ..... | ..... | 1 | ..... | 2 | ..... | NW | ..... | ..... | ..... | ..... | Clear..... | |
| Pensacola, Coquimbo, Chili..... | 29.98‡ | 761.5‡ | ..... | ..... | 63 | 17.2 | 94 | Calm | 0 | 0 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | N | Clear?..... | |
| Plymouth, Wood's Holl, Mass..... | 29.66‡ | 753.4‡ | ..... | ..... | 32 | 0.0 | 73 | W | ..... | ..... | 5-6 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Powhatan, Norfolk, Va..... | 29.67‡ | 753.6 | ..... | ..... | 51 | 10.6 | 59 | SSW | ..... | ..... | 2-3 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Quinnebaug, Gibraltar, Med..... | 30.05‡ | 763.3‡ | ..... | ..... | 62 | 16.7 | 51 | WSW | ..... | ..... | 4 | ..... | 8 | ..... | WNW | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Ranger. Amoy, China.....* | 29.85‡ | 758.9‡ | ..... | ..... | 75 | 23.9 | 86 | E | ..... | ..... | 2-3 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Richmond. N. 12° 59′, E. 59° 28′..... | 29.88‡ | 758.9‡ | ..... | ..... | 80 | 26.7 | 87 | NNE | ..... | ..... | 3 | ..... | 2 | ..... | NNE | 0 | 0 | Smooth | ..... | Fair..... | |
| Rio Bravo, Brownsville, Texas..... | 30.11 | 764.8 | 62 | 16.7 | 62 | 16.7 | 100 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Santee, Annapolis, Md... ..... | 29.55‡ | 750.6‡ | ..... | ..... | 45 | 7.2 | 84 | S | ..... | ..... | 6 | ..... | 10 | ..... | S | 0 | 0 | ..... | ..... | Cloudy..... | |
| Saratoga, Hampton Roads, Va..... | 29.65‡ | 753.1‡ | ..... | ..... | 49 | 4.9 | 63 | SW | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Misty..... | |
| St. Louis, League Island, Pa..... | 29.62‡ | 752.3‡ | ..... | ..... | 42 | 5.6 | 66 | SE | 3 | 1.3 | ..... | ..... | 5 | ..... | SSE | 0 | 0 | ..... | ..... | Fair..... | |
| Supply, New York, N. Y..... | 29.65‡ | 753.1‡ | ..... | ..... | 39 | 3.9 | 61 | SSE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Trenton. Genoa, Italy.....* | 29.52‡ | 749.8‡ | ..... | ..... | 57 | 13.9 | 63 | SSW | ..... | ..... | 3-5 | ..... | 8 | ..... | S;E | 0.06 | 1.5 | Heavy | S | Squally..... | |
| Tuscarora. Morro Oajaca, Mexico* | 30.01‡ | 762.2‡ | ..... | ..... | 78 | 25.6 | 78 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Long | E | Clear ..... | |
| Vandalia Boston, Mass.....† | 29.82‡ | 757.4‡ | ..... | ..... | 32 | 0.0 | 66 | WNW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Wabash, Boston, Mass..... | 29.61‡ | 752.1‡ | ..... | ..... | 30 | — 1.1 | 90 | W | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Wyoming, Alexandria, Egypt ....* | 30.04‡ | 763.0‡ | ..... | ..... | 66 | 18.9 | 94 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear. ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | |
| S. S. Colima, Punta Arenas, Costa Rica | † | 29.94‡ | 760.5‡ | 84 | 28.9 | | SSE | | | 3 | | 7 | | N | 0.95 | Small | SE | Misty | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota, Capt. H. G. Morse, N. 48° 17′, W. 124° 00′ | †* | 29.92‡ | 760.0‡ | | | | Calm | | | 0 | | 4 | | NW | 0 | None | | Clear | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, S. 14° 39′, W. 171° 00′ | | 29.88‡ | 758.9‡ | | | | NW | | | 2 | | 9 | | SW | | Confused | SW | Fine | R. C. Ghest, 1st Officer |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic, N. 44° 05′, W. 50° 00′ | †* | 29.56 | 750.8 | 40 | 4.4 | | WNW | | | 4 | | 2 | | Calm | | High | SW | Foggy | Capt. R. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Correction for elevation applied at this office.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, N. 48° 59′, W. 178° 54′ | * | 30.46‡ | 773.7‡ | 41 | 5.0 | 75 | E | | | 4 | | k | | E | 0 | Mod'ate | E | Overcast | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 27° 10′, E. 124° 54′ | †* | 29.87‡ | 758.7‡ | 63 | 17.2 | ?? | NE | | | 6 | | k | | NE | Heavy | High | NE | Overcast | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, N. 35° 16′, W. 179° 28′ | | 30.46‡ | 773.7‡ | 56 | 13.3 | 94 | SSE | | | 4 | | 5 | | S | | 2 | W | D. clouds | J. G. Cameron. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 24° 51′, W. 80° 30′ | †* | 30.10‡ | 764.5‡ | 82.0 | 27.8 | 67 | Calm | | | 0 | | 0 | | | 0 | Smooth | E | Clear | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 39° 14,′ W. 66° 41′ | * | 29.77‡ | 756.1‡ | | | | WNW | | | 6 | | 5 | | W | | Rough | W | Cloudy | Capt. G. Meyer. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall of melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Lo'wr 0—10. | Upper. From— | Lower. From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Philadelphia, Pa. | | 29.61‡ | 752.1‡ | 45 | 7.2 | | S | | | 6 | | 8 | | SW | 0 | | | Cloudy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher, & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| Peruvian, N. 47° 00′, W. 46° 00′ | †* | 29.48‡ | 748.8‡ | 41 | 5.0 | 91 | W | | | 2 | | 2 | | WSW | | Mod'ate | SW | Foggy | J. Powell, 4th Officer. |
| **MARINE SERIES. (Miscellaneous.)** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller, Off Nauset Lights, Mass, N. 41° 52′, W. 69° 57′ | | 29.63‡ | 752.6‡ | 34 | 1.1 | 74 | W | 16 | 7.2 | | | 0 | | | 0 | | | Clear | Capt. James Jorgensen. |
| Brigantine "George," of Halifax | | | | | | | | | | | | | | | | | | | Willard N. Pratt. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. Correction for temperature and elevation applied at this office.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

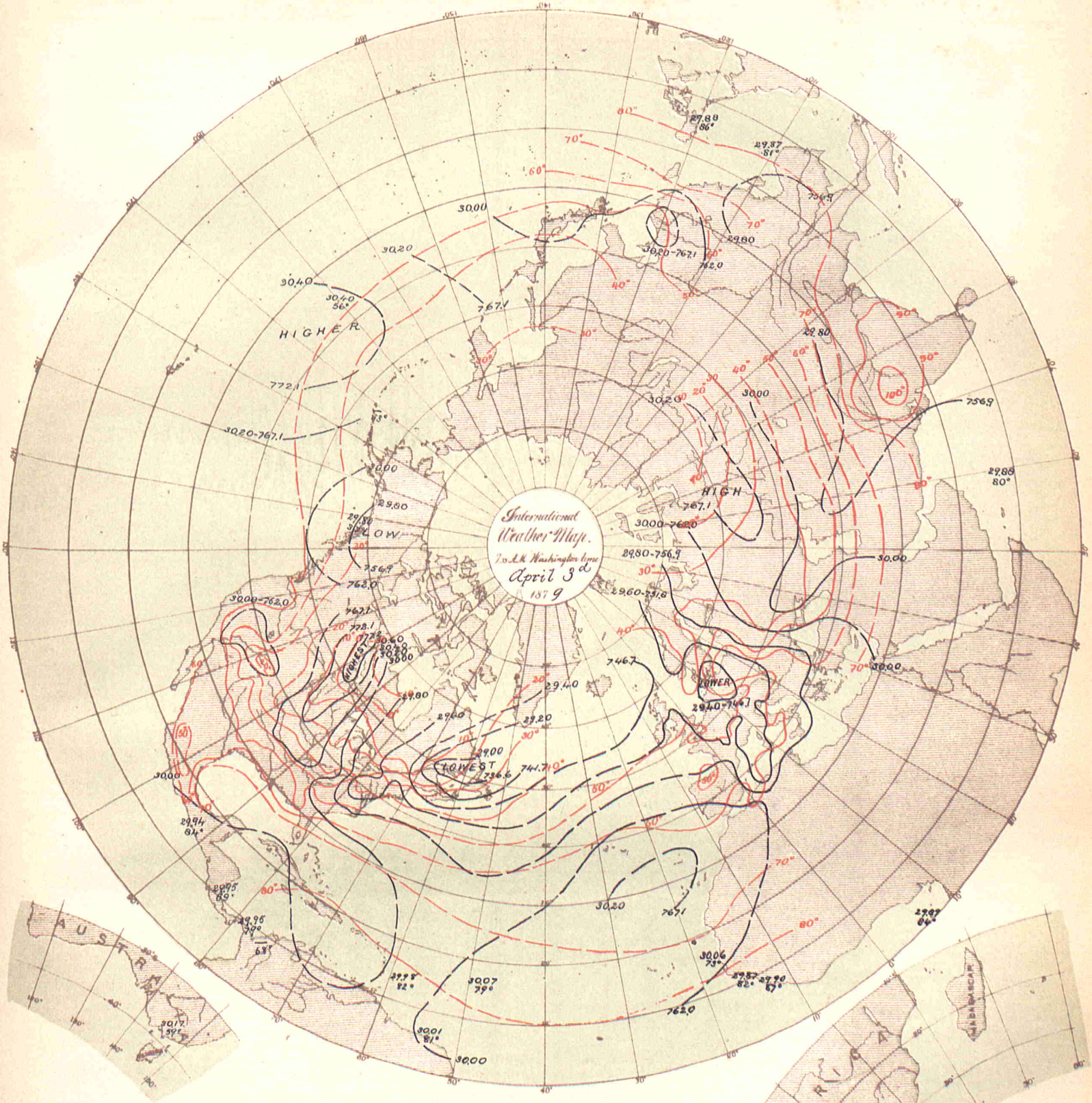
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$.) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIOAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 4, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:28 P. M. MELBOURNE mean time.

### ALGEGIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer, corrected for instrum'tal error and temperature. Inches. | Barometer, corrected for instrum'tal error and temperature. Millimeters. | Barometer, reduced to sea-level. Inches. | Barometer, reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 30.04 | 763.0 | 65.1 | 18.4 | 71 | NW | | | 2 | | 2 | | | 0 | 0 | Fair | Kesxuche. |
| Algiers | | | 29.91 | 759.8 | 59.7 | 15.4 | 76 | W | | | 7* | | 0 | | | 0 | 0 | Clear | Tourillere. |
| La Calle | | | 29.89 | 759.2 | 56.7 | 13.7 | 78 | NW | | | 6 | | 10 | | | 0.138 | 3.5 | Covered | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 29.96 | 761.0 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 30.02 | 762.5 | 55.4 | 13.0 | 45 | NNW | | | 2 | | 8 | | | 0 | 0 | Very cloudy | Herbin. |
| Tebessa | | | 29.93 | 760 1 | 56.3 | 13.5 | 48 | W | | | 6 | | 0 | | | 0 | 0 | Clear | Watrin. |
| Geriville | | | 30.01 | 762.3 | 61.2 | 16.2 | 89 | N | | | 5 | | 2 | | | 0 | 0 | Fair | Brugniaux. |
| Laghouat | | | 29.99 | 761.7 | 61.5 | 16.4 | 36 | SE | | | 4 | | 2 | | | 0 | 0 | Fair | Bertrand. |
| Biskra | | | 29.96 | 760.9 | 71.2 | 21.8 | 27 | NW | | | 3 | | 5 | | | 0 | 0 | Cloudy | Chanvaux. |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.02 | 737.0 | 29.56 | 750.7 | 55.6 | 13.1 | 64 | E | | | 3 | | 7 | | | 0.079 | 3.0 | Raining | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 28.95 | 735.2 | 29.71 | 754.7 | 50.0 | 10.0 | 79 | E | | | 1 | | 10 | | | 0.075 | 1.9 | | Dr. Wierzbiski. |
| Eperies | 28.76 | 730.4 | 29.62 | 752.4 | 55.0 | 12.8 | 81 | Calm | | | 0 | | 10ks | | | Blank | Blank | | Julius Mikolik. |
| Gratz | 28.41 | 721.7 | 29.67 | 753.6 | 44.2 | 6.8 | 97 | NE | | | 3 | | 10 | | | 0.004 | 0.1 | Thunder-storm | Andreas Rospini. |
| Hermannstadt | 28.21 | 716.5 | 29.62 | 752.4 | 53.6 | 12.0 | 48 | S | | | 3 | | 10 | | | 0.159 | 4.05 | | Prof. A. Gottschling. |
| Kremsmünster | 28.37 | 720.7 | 29.71 | 754.7 | 48.4 | 9.1 | 59 | WNW | | | 3 | | 10 | | | 0.031 | 0.8 | | Prof. C. Wagner. |
| Lemberg | 28.79 | 731.2 | 29.78 | 756.4 | 46.9 | 8.3 | 56 | SE | | | 3 | | 2 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 29.39 | 746.6 | 29.81 | 749.5 | 57.9 | 14.4 | 52 | ENE | | | 3 | | 6 | | | 0 | 0 | | I.R.Hydrographic Office |
| Szatlmar | 29.19 | 741.5 | 29.65 | 753.1 | 57.6 | 14.2 | 57 | E | | | 2 | | 10 | | | 0.102 | 2.6 | | Julius Csics, S. J. |
| Szegedin | 29.32 | 744.8 | 29.60 | 751.9 | 49.5 | 9.7 | 80 | SE | | | 2 | | 10 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 29.45 | 747.9 | 29.55 | 750.5 | 59.0 | 15.0 | 43 | E | | | 1 | | 10 | | | 0 | 0 | | P. Busin. |
| Vienna | 28.95 | 735.4 | 29.66 | 753.3 | 54.7 | 12.6 | 55 | NW | | | 2 | | 10 | | | 0 | 0 | | I. R. Central Met. Obs'y |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment o observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.03 | 762.6 | 29.83 | 757.7 | 51.1 | 10.6 | 68 | W | | | 2 | | 8 | | WNW | 0.008 | 0.20 | | Royal Observatory. |
| Furnes | 29.84 | 758.0 | 29.87 | 758.6 | 50.0 | 10.0 | 85 | W | | | 1 | | 7 | | | 0 | 0 | | M. E. de Cae. |
| Maeseyck | 29.71 | 754.7 | 29.84 | 757.9 | 50.5 | 10.3 | 72 | NNW | | | 2 | | 6 | | | 0.020 | 0.5 | | M. Pierrot. |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0; instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m., Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.49 | 749.0 | 29.59 | 751.6 | 48.0 | 8.9 | ..... | S | 9 | 4.0 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | D. clouds..... | W. Boswell. |
| Ardrossan | 29.65 | 753.1 | 29.67 | 753.6 | 45 | 7.2 | ..... | SSW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Raining..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.70 | 754.4 | 52.0 | 11.1 | ..... | SW | 12 | 5.4 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.76 | 755.9 | 52.6 | 11.4 | ..... | WSW | 7 | 3.1 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.77 | 756.1 | 45.8 | 7.7 | ..... | WSW | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | Thomas Mackereth. |
| Bradford, Yorkshire | 29.36 | 745.7 | 29.76 | 755.9 | 48.6 | 9.2 | ..... | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds..... | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.94 | 760.5 | 29.97 | 761.2 | 81 | 27.2 | ..... | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.82 | 757.4 | 54.0 | 12.2 | ..... | SW | ..... | ..... | 1 | ..... | 10k | ..... | ..... | ..... | ..... | Overcast..... | H. Todd. [C. |
| Cardington | ..... | ..... | 29.79 | 756.7 | 53.0 | 11.7 | ..... | W | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | John McLare. |
| Chatham, School M. E. | 29.70 | 754.4 | 29.84 | 757.9 | 54.1 | 12.3 | ..... | Calm | ..... | ..... | 0 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.27 | 718.0 | 29.76 | 755.9 | 44.0 | 6.7 | ..... | NW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Raining..... | Alexander Watt. |
| Donaghadee | 29.66 | 753.4 | 29.70 | 754.4 | 53 | 11.7 | ..... | WSW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.82 | 757.4 | 29.85 | 758.2 | 49 | 9.4 | ..... | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Misty..... | J. Costello. |
| Falmouth, Observatory | 29.61 | 752.1 | 29.84 | 757.9 | 51.7 | 10.9 | ..... | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.58 | 700.5 | 29.90 | 759.4 | 76.0 | 24.4 | ..... | E | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.72 | 754.9 | 29.95 | 760.7 | 86 | 30.0 | ..... | N | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's college | ..... | ..... | 29.67 | 753.6 | 50 | 10.0 | ..... | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 29.94 | 760.5 | 29.99 | 761.7 | 61.9 | 16.6 | ..... | W | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.46 | 748.3 | 29.66 | 753.4 | 46.9 | 8.3 | ..... | WSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. [C. |
| Great Yarmouth | 29.79 | 756.7 | 29.80 | 756.9 | 47 | 8.3 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.66 | 753.4 | 29.83 | 757.7 | 54.6 | 12.6 | ..... | WSW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | The staff, for G.B. Airy. |
| Guernsey | 29.66 | 753.4 | 29.88 | 758.9 | 48 | 8.9 | ..... | SSW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Raining..... | Dr. S.E.Hoskins, F.RS., |
| Helston | 29.84 | 757.9 | 29.93 | 760.2 | 53 | 11.7 | ..... | SW | ..... | ..... | 1 | ..... | 10k | ..... | ..... | 0.12 | 3.0 | Misty..... | M. P. Moyle. |
| Holyhead | 29.73 | 755.1 | 29.77 | 756.1 | 48 | 8.9 | ..... | SSW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | John Tilston. |
| Jersey | 29.63 | 752.6 | 29.93 | 760.2 | 50.0 | 10.0 | ..... | SW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy..... | J. Fisher. |
| Kew, Observatory | 29.79 | 756.7 | 29.82 | 757.4 | 52.0 | 11.1 | ..... | SW | 11 | 4.9 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | The Meteorological Of. |
| Leicester, Museum | 29.54 | 750.3 | 29.80 | 756.9 | 52.6 | 11.4 | ..... | S | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky..... | Wm, J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.79 | 756.7 | 29.91 | 759.7 | 61 | 16.1 | ..... | W | ..... | ..... | 3 | ..... | 4k | ..... | ..... | ..... | ..... | D. clouds..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.43 | 747.5 | 29.52 | 749.8 | 50 | 10.0 | ..... | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded.. | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 29.97 | 761.2 | 72.5 | 12.5 | ..... | SW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.60 | 751.8 | 29.79 | 756.7 | 54.3 | 12.4 | ..... | SW | ..... | ..... | 3 | ..... | 2c | ..... | ..... | 0 | 0 | Blue sky..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.26 | 743.2 | 29.78 | 756.4 | 52.4 | 11.3 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.82 | 757.4 | 52 | 11.1 | ..... | WSW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | H. E. Bellamy. |
| Plymouth | 29.75 | 755.6 | 29.82 | 757.4 | 49.5 | 9.7 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Showery..... | John Merrifield. |
| Roche's Point | 29.71 | 754.6 | 29.78 | 756.4 | 52 | 11.1 | ..... | SW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded.. | Wm. Kennedy. |
| Saint Ann's Head | 29.63 | 752.6 | 29.80 | 756.9 | 48 | 8.9 | ..... | SSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 43.2 | 6.2 | ..... | SSW | 17 | 7.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling..... | Rev C.Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.64 | 752.8 | 29.70 | 754.4 | 69.0 | 20.6 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | Blank | Blank | Gloomy..... | W. H.Lyne. |
| Sheffield | 29.47 | 748.5 | 29.75 | 755.6 | 51.8 | 11.0 | ..... | SW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0 | 0 | D. clouds..... | W. F. Cooper. |
| Silloth Rectory | 29.70 | 754.4 | 29.73 | 755.1 | 52.2 | 11.2 | 71 | SW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.37 | 746.0 | 29.77 | 756.1 | 47.8 | 8.8 | ..... | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.62 | 752.3 | 29.83 | 757.7 | 55.0 | 12.8 | ..... | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | C. H. Griffith, F. M. S. |
| Thurso | 29.44 | 747.8 | 29.50 | 749.3 | 45 | 7.2 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | John Trotter. |
| Truro, Royal Institution | 29.79 | 756.7 | 29.84 | 757.9 | 57 | 13.9 | ..... | W | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | 29.73 | 755.1 | 29.75 | 755.6 | 51.9 | 11.1 | ..... | S | 16 | 7.2 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.82 | 757.4 | 29.86 | 758.4 | 90.8 | 32.7 | 28 | WNW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.31 | 769.9 | 52.0 | 11.1 | 82 | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.10 | 2.5 | Cloudy..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.57 | 751.1 | 52.0 | 11.1 | ..... | W | ..... | ..... | 2 | ..... | 10k | ..... | ..... | 0 | 0 | Cloudy..... | Andrew Gibb. |
| Mauritius, Observatory | 29.93 | 760.2 | 30.12 | 765.0 | 78.8 | 26.0 | 67 | ESE | 19.5 | 8.7 | ..... | ..... | 8 | ..... | ESE | 0 | 0 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 30.15 | 765.8 | 30.24 | 768.1 | 64.0 | 17.8 | 68 | ESE | 3 | 1.3 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| MonachLt-house, (Hebrides) | ..... | ..... | 29.48 | 748.8 | 47 | 8.3 | ..... | SW | ..... | ..... | 6 | 10 | ..... | ..... | ..... | 0.2 | 5.1 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.42 | 747.2 | 40 | 4.4 | ..... | SW | ..... | ..... | 4 | 10 | 10 | SW | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 45′, E. 29° 55′ | ..... | ..... | D. clouds..... | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda, N. 40° 42′, W. 9° 34′ | ..... | ..... | Misty..... | Capt. B. Boyes. |
| Barque Belle-Isle, N. 43° 54′, W. 26° 30′ | ..... | ..... | D. clouds..... | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra, N. °47 46′ W. 20° 49′ | ..... | ..... | Drizzling..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina, N. 14° 20′, W. 52° 45′ | 4 | Confused. | Showery..... | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam, N. 19° 04′, E. 113° 34′ | ..... | ..... | Hazy..... | Capt. Barlow. |
| S. S. Strathleven, N. 44° 54′, W. 8° 53′ | ..... | ..... | D. clouds..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.24 | 666.5 | 29.96 | 761.0 | 69.4 | 20.8 | 96 | NE | ..... | ..... | 2 | 8ks;s | 2s | ..... | ..... | Inap. | Inap. | ..... | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.6 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.61 | 752.0 | 29.65 | 753.2 | 43.5 | 6.4 | 79 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... |
| Faröe | 29.59 | 751.5 | 29.61 | 752.0 | 35.1 | 1.7 | 96 | NNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Rain & fog... |
| Godthaab, (Greenland) | 29.25 | 743.0 | 29.30 | 744.1 | 18.5 | — 7.5 | 61 | NNE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 29.31 | 744.4 | 29.34 | 745.3 | 39.2 | 4.0 | 61 | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.40 | 746.7 | 29.57 | 751.0 | 37.2 | 2.9 | 100 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.39 | 746.6 | 29.95 | 760.6 | 50.7 | 10.4 | 64 | W | ..... | ..... | 1 | ..... | 5 | ..... | W | 0 | 0 | Cloudy..... | Collignon, Director. |
| Amiens, Normal School | 29.72 | 755.0 | 29.83 | 757.7 | 59.0 | 15.0 | 89 | N | ..... | ..... | 1 | ..... | 5 | ..... | NE | 0 | 0 | Cloudy..... | Bonvallet, Director |
| Avignon, Normal School | 29.58 | 751.2 | 29.65 | 753.2 | 55.4 | 13 | 55 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | M. Giraud, Director |
| Bar-sur-Seine | 29.32 | 744.8 | 29.88 | 759.0 | 50.4 | 10.2 | 53 | E | ..... | ..... | 1 | ..... | 8n | ..... | E | 0 | 0 | Very cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.63 | 752.6 | 29.90 | 759.4 | 49.5 | 9.7 | 71 | SW | ..... | ..... | 1 | ..... | 2 | ..... | WSW | 0.010 | 0.25 | Slightly cl'dy | Frere Eugene Marie, Dir |
| Besançon, Normal School | 29.00 | 736.5 | 29.90 | 759.4 | 50.0 | 10 | 62 | N | ..... | ..... | 4 | ..... | 2 | ..... | E | 0.331 | 8.4 | Slightly cl'dy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.96 | 735.5 | 29.87 | 758.6 | 50.5 | 10.3 | 64 | N | ..... | ..... | 6 | ..... | k | N | N | 0 | 0 | ..... | M. Marlot, Director. |
| Bourges, Normal School | 29.32 | 744.7 | 29.87 | 758.8 | 49.6 | 9.8 | 84 | NNE | ..... | ..... | 1 | c | ..... | NNE | NNE | 0 | 0 | ..... | A. Waquet, Director |
| Brest, Naval Observatory | 29.61 | 752.2 | 29.86 | 758.4 | 54.0 | 12.2 | 78 | SW | ..... | ..... | 3 | ..... | 10 | ..... | SW | 0.010 | 0.25 | Light rain ... | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.48 | 748.7 | 29.89 | 759.2 | 52.5 | 11.4 | 61 | W | ..... | ..... | 4 | ..... | 2 | ..... | W | 0 | 0 | Slightly cl'dy | September, Director. |
| Caen, Normal School | 29.79 | 756.6 | 29.82 | 757.5 | 53.2 | 11.8 | 52 | WNW | ..... | ..... | 1 | ..... | 2 | ..... | WNW | 0 | 0 | Slightly cl'dy | M. Lair, Director. |
| Chartres, Normal School | 29.34 | 745.2 | 29.90 | 759.5 | 53.8 | 12.1 | 95 | E | ..... | ..... | 1 | ..... | 5 | ..... | N | 0.39 | 10. | Cloudy..... | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.54 | 750.4 | 29.86 | 758.5 | 52.9 | 11.6 | 54 | Calm | ..... | ..... | 0 | ..... | 2 | N | N | ..... | ..... | Slightly cl'dy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.49 | 723.6 | 29.85 | 758.2 | 50.4 | 10.2 | 56 | N | ..... | ..... | 1 | ..... | 8 | ..... | N | 0.283 | 7.2 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.98 | 736.0 | 29.90 | 761.0 | 47.1 | 8.4 | 70 | NW | ..... | ..... | 1 | ..... | 5k | ..... | NW | 0.409 | 10.4 | Cloudy..... | Dr. Coulet, Director |
| Commune de Gréasque* | 28.84 | 732.5 | 29.69 | 754.5 | 52.7 | 11.5 | 73 | NW | ..... | ..... | 4 | ..... | 8 | ..... | NW | 0 | 0 | ¾ covered... | M. Kina, Director. |
| Grenoble, Normal School | 28.99 | 736.3 | 29.76 | 755.9 | 49.3 | 9.6 | 52 | NW | ..... | ..... | 1 | ..... | 10n | ..... | N | 0.098 | 2.50 | Covered..... | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.75 | 755.6 | 29.97 | 761.2 | 54.7 | 12.6 | 59 | NNW | ..... | ..... | 1 | ..... | 5 | ..... | NW | 0 | 0 | Cloudy..... | Mouillot, Director |
| Le Mans, Normal School | 29.61 | 752.2 | 29.93 | 760.1 | 51.4 | 10.8 | 58 | NW | ..... | ..... | 1 | ..... | 5 | ..... | WNW | 0.08 | 2 | Cloudy..... | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 28.88 | 733.6 | 29.81 | 757.1 | 48.7 | 9.3 | 61 | NNE | ..... | ..... | 4 | ..... | 5k | ..... | NNE | 0 | 0 | Cloudy..... | Baudry, Director. |
| Lorient, Naval Observatory | 29.87 | 758.7 | 29.97 | 761.2 | 54.7 | 12.6 | 61 | SW | ..... | ..... | 2 | ..... | ..... | W | SW | 0 | 0 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Marseilles, Observatory | ..... | ..... | 29.54 | 750.4 | 58.3 | 14.6 | 40 | NW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | The Staff. |
| Mirecourt, Normal School | 28.80 | 731.5 | 29.86 | 758.5 | 47.5 | 8.6 | 65 | NW | ..... | ..... | 1 | ..... | 2 | ..... | SE | 0 | 0 | Slightly cl'dy | M. Barbier, Director. |
| Nismes, Normal School | 29.45 | 748.1 | 29.66 | 753.3 | 57.6 | 14.2 | 86 | N | ..... | ..... | 8 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 28.67 | 728.3 | 29.74 | 755.3 | 51.4 | 10.8 | 58 | N | ..... | ..... | 4 | ..... | ..... | N | N | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.93 | 633.1 | ..... | ..... | 28.4 | —2.0 | 100 | N | ..... | ..... | 2 | ..... | ..... | ..... | N | 0.339 | 8.6 | Foggy ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.95 | 760.6 | 29.98 | 761.4 | 57.6 | 14.2 | 61 | NNW | ..... | ..... | 1 | ..... | 5 | NNW | NNW | 0 | 0 | ½ covered... | Lt. Decante, Director. |
| Rouen, Normal School | 29.79 | 756.6 | 29.87 | 758.8 | 55.9 | 13.3 | 50 | NW | ..... | ..... | 1 | ..... | 2 | ..... | W | 0.051 | 1.3 | Slightlycl'dy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.92 | 759.9 | 29.95 | 760.7 | 50.4 | 10.2 | 64 | N | ..... | ..... | 3 | ..... | 1 | NNE | NNE | 0 | 0 | Clear..... | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.76 | 755.8 | 29.92 | 760.0 | 46.9 | 8.3 | 82 | SW | ..... | ..... | 1 | ..... | 10 | ..... | S;SW | 0 | 0 | Covered..... | E. Renou, Director. |
| Tarbes, Normal School | 28.88 | 733.6 | 29.95 | 760.6 | 50.0 | 10 | 62 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.32 | 8. | Raining ..... | T. Huguet, Director. |
| Toulouse, Observatory | 29.24 | 742.6 | 29.90 | 760.9 | 50.4 | 10.2 | 64 | NW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | M. Mercadier Julier. |
| Versailles Observatory | 29.43 | 747.4 | 29.92 | 760.9 | 46.4 | 8.0 | 81 | N | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.12 | 739.7 | 29.84 | 758.0 | 50.0 | 10 | 80 | NW | ..... | ..... | 1 | ..... | 8 | ..... | SE | 0 | 0 | Very cloudy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.85 | 758.1 | 29.87 | 758.8 | 77.0 | 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.63 | 16. | ..... | L'Abbé Marchesi. |
| Lyons Obs'y, (Park Station) | 29.18 | 741.2 | 29.80 | 756.8 | 52.9 | 11.6 | 51 | ..... | ..... | ..... | 4 | ..... | 4 | ..... | N | 0 | 0 | Cloudy..... | Mr. Jays. |
| Mont-Louis | 24.39 | 619.6 | 29.71 | 754.6 | 32.9 | 0.5 | 60 | NW | 15.0 | 6.7 | ..... | ..... | 6 | ..... | W | 0.059 | 1.5 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.59 | 751.5 | 56.5 | 13.6 | 73 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered ..... | Dr. A. Nieper, Jr. |
| Paris, Montsouris Obs'y | 29.03 | 737.7 | ..... | ..... | 46.6 | 8.1 | 82 | SSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.031 | 0.8 | ..... | Marié Davy, Director. |
| Perpignan | 29.72 | 754.9 | 29.83 | 757.6 | 52.0 | 11.1 | 53 | N | 33.6 | 15.0 | ..... | ..... | 5 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.26 | 565.3 | ..... | ..... | 30.6 | — 0.8 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 2.469 | 62.7 | Snowy..... | Gen'l de Nansouty. |
| Tours | 29.72 | 755.0 | 29.92 | 760.0 | 54.5 | 12.5 | 50 | W | ..... | ..... | 1 | ..... | 5 | ..... | SSW | 0.016 | 0.4 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.08 | 763.9 | 30.10 | 764.5 | 50.0 | 10.0 | 88 | E | 8.7 | 3.9 | ..... | 7cs | ..... | W | ..... | 0.413 | 10.5 | Cloudy..... | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-12. | Clouds. Amount. Up'er 0-10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.95 | 735.3 | 29.78 | 756.5 | 45.5 | 7.5 | 65 | W | | | 4 | | 9 | W | | 0.079 | 2.0 | | Prof. Dr. Hoh. |
| Berlin | 29.57 | 751.0 | 29.74 | 755.4 | 52.7 | 11.5 | 56 | SW | | | 2 | | 8 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.21 | 742.0 | 29.74 | 755.3 | 56.8 | 13.8 | 52 | N | | | 1 | | 9 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.43 | 747.4 | 29.85 | 758.3 | 18.0 | 8.9 | 57 | NE | | | 2 | | 10 | NW | | 0 | 0 | | Albert Senx. |
| Cassel | 29.20 | 741.8 | 29.81 | 757.1 | 41.4 | 5.2 | 76 | W | | | 3 | | 10 | WSW | | 0.010 | 0.26 | Raining | Dr. H. Möhl. |
| Crefeld | 29.65 | 753.2 | 29.82 | 757.3 | 48.9 | 9.4 | 63 | NW | | | 4 | | 5 | | | 1.69 | 43. | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.50 | 749.2 | 29.86 | 758.5 | 46.9 | 8.3 | | WNW | | | 2 | | 10 | | | 0.020 | 0.5 | | Physical Society. |
| Freienwalde on the Oder | | | | | | | | | | | | | | | | | | | Assmann., M. D. |
| Friedrichshafen | 28.37 | 720.6 | 29.81 | 757.2 | 47.5 | 8.6 | 67 | SW | | | 6 | | 10 | SW | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.55 | 750.5 | 29.62 | 752.3 | 59.7 | 4.3 | 92 | S | | | 2 | | 10 | | | 0.028 | 0.7 | Gloomy | Captain F. Hegemann. |
| Kiel | 29.61 | 752.1 | 29.63 | 752.6 | 42.1 | 5.6 | 76 | SSW | | | 2 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.76 | 756.0 | 29.85 | 758.1 | 58.6 | 14.8 | 86 | SE | | | 5 | | 0 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 29.67 | 753.6 | 58.6 | 14.8 | | S | | | 4 | | 1 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.33 | 745.0 | 29.75 | 755.7 | 48.6 | 9.2 | 51 | SW | | | 2 | | 10 | WSW | | 0 | 0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.84 | 757.8 | 29.88 | 759.0 | 51.8 | 11.0 | 44 | SE | | | 6 | | 1cs | | | | | Squally | Skalweit. |
| Neufahrwasser | 29.78 | 756.4 | 29.80 | 756 8 | 55.0 | 12.8 | 53 | SSE | | | 4 | | 4 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.47 | 748.5 | 29.76 | 755.8 | 56.3 | 13.5 | 57 | S | | | 4 | | 8 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.32 | 744.7 | 29.87 | 758.8 | 50.4 | 10.2 | 54 | Calm | | | 0 | | 10 | NW | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 28.86 | 732.9 | 29.80 | 756.9 | 48.7 | 9.3 | 51 | N | | | 3 | | 9 | NW | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.30 | 743.3 | 29.52 | 757.5 | 50.0 | 10.0 | 51 | NW | | | 2 | | 4 | | | 0 | 0 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.31 | 719'1 | 29.84 | 757.9 | 45.1 | 7.3 | 56 | NW | 7 | 3 | | 9k | | NW | | 0 | 0 | | Dr. Van Bebber. |
| Wustrow, Naval School | 29.61 | 752.1 | 29.63 | 752.7 | 46.0 | 7.8 | 73 | S | | | 4 | | 9ks | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.32 | 744.6 | 29.70 | 754.4 | 69.8 | 20.7 | | S | | | 3.5 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.79 | 756.7 | 29.84 | 758.0 | 82.4 | 28.0 | 51 | WSW | 13 | 5.8 | | | 2 | | | 0 | 0 | D. clouds | |
| Deesa | 29.32 | 744.8 | 29.77 | 756.1 | 101.0 | 38.3 | 11 | WNW | 6.6 | 3.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.76 | 755.9 | 29.80 | 756.8 | 84.0 | 28.9 | 72 | W | 10 | 4.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | | | | | | | | | | | | | | | | | | | |
| Lahore | 29.03 | 737.3 | 29.75 | 755.5 | 89.2 | 36.8 | 19 | WSW | 1.9 | 0.8 | | | 0 | | | 0 | 0 | | |
| Belgaum | 27.30 | 693.4 | 29.80 | 756.8 | 83.8 | 28.8 | 78 | WSW | 15 | 6.7 | | | 9 | E | E | 0 | 0 | Thunder-storm | |
| Roorkee | 28.88 | 733.5 | 29.75 | 755.7 | 92.8 | 33.8 | 27 | Calm | 3.0 | 1.3 | | | | | | 0 | 0 | Blue sky | |
| Agra | 29.22 | 742.2 | 29.76 | 756.0 | 99.6 | 37.6 | 18 | W | | | | | | | | 0 | 0 | | |
| Nagpur | 28.72 | 729.5 | | | | | | Calm | 3.1 | 1.4 | | | | | | 0 | 0 | Blue sky | |
| Lucknow | 29.41 | 747.0 | 29.77 | 756.2 | 97.1 | 36.2 | 34 | NW | 1.6 | 0.7 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.46 | 748.4 | 29.77 | 756.1 | 94.1 | 34.5 | 2 | Calm | 1.1 | 0.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.61 | 752.1 | 29.79 | 756.6 | 92.5 | 33.6 | 27 | WNW | 0.1 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 28.78 | 705.6 | 29.73 | 755.0 | 94.8 | 34.9 | 20 | NW | 20.1 | 9.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.65 | 753.0 | 29.73 | 755.0 | 92.1 | 33.4 | 53 | SSW | 3.3 | 1.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.72 | 755.0 | 29.74 | 755.5 | 88.3 | 31.3 | 42 | NNW | 1.0 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.35 | 745.5 | 29.73 | 755.2 | 85.7 | 29.8 | 36 | Calm | 1.8 | 0.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.67 | 753.7 | 29.76 | 756.0 | 84.9 | 29.4 | 85 | Calm | 2.6 | 1.2 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.43 | 747.5 | 29.76 | 755.9 | 85.2 | 29.6 | 58 | ENE | 2.9 | 1.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.43 | 722.2 | 29.76 | 755.9 | 95.1 | 35.1 | 15 | Calm | 1.1 | 0.5 | | | 0 | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation. Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instru'tal error and temperature. Inches. | Barometer. Corrected for instru'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.15 | 740.5 | 29.57 | 751.0 | 61.3 | 16.3 | 50 | SW | 1.8 | 0.8 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.07 | 738.3 | 29.58 | 751.4 | 50.4 | 10.2 | 74 | E | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0.138 | 3.5 | ..... | Prof. Schiaparelli. |
| Padua | 29.44 | 747.9 | 29.56 | 750.7 | 58.8 | 14.9 | 48 | ENE | 17.4 | 7.8 | ..... | ..... | 10 | E | ..... | 0.457 | 11.6 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.73 | 729.4 | 29.62 | 752.3 | 43.9 | 6.6 | 90 | NW | 2.5 | 1.1 | ..... | ..... | 10 | NE | ..... | 0.374 | 9.5 | ..... | Prof. P. F. Denza. |
| Genoa | 29.34 | 745.2 | 29.53 | 750.1 | 48.2 | 9.0 | 71 | N | 13.7 | 6.1 | ..... | ..... | 10 | S | ..... | 0.465 | 11.8 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.73 | 704.4 | 29.65 | 753.0 | 36.1 | 2.3 | 89 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 1.067 | 27.1 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.47 | 748.6 | 29.52 | 749.8 | 49.6 | 9.8 | 85 | SW | 6.3 | 2.8 | ..... | ..... | 10 | ..... | ..... | 0.079 | 2.0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.26 | 743.3 | 29.52 | 749.8 | 52.7 | 11.5 | 74 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.815 | 20.7 | ..... | Cav. F. Meucci |
| Leghorn | 29.38 | 746.3 | 29.47 | 748.4 | 52.9 | 11.6 | 69 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.031 | 0.8 | ..... | Prof. P. Monte. |
| Rome | 29.39 | 746.6 | 29.57 | 751.1 | 48.7 | 9.3 | 92 | NW | 3.1 | 1.4 | ..... | ..... | 10 | ..... | ..... | 1.122 | 28.5 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.42 | 747.3 | 29.67 | 753.7 | 63.7 | 17.6 | 60 | WNW | 18.7 | 6.1 | ..... | ..... | 7 | NW | ..... | 0.134 | 3.4 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.78 | 731.1 | 29.67 | 753.5 | 56.8 | 13.8 | 75 | SE | 3.8 | 1.7 | ..... | ..... | 8 | ..... | ..... | 0.717 | 18.2 | ..... | Prof. D. Conti. |
| Cagliari | 29.46 | 748.2 | 29.65 | 753.1 | 55.9 | 13.3 | 49 | NW | ..... | ..... | 4 | ..... | 10 | W | ..... | 0.138 | 3.5 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.48 | 748.8 | 29.73 | 755.2 | 58.8 | 14.9 | 47 | WSW | 9.8 | 4.4 | ..... | ..... | 8 | ..... | ..... | 0.299 | 7.6 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.69 | 754.1 | 29.76 | 755.9 | 63.1 | 17.3 | 43 | NW | 8.7 | 3.9 | ..... | ..... | 4 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.08 | 738.6 | 29.63 | 752.7 | 54.9 | 12.7 | 67 | WSW | 13.7 | 6.1 | ..... | ..... | 8 | ..... | ..... | 0.134 | 3.4 | ..... | Prof. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 461 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.13 | 765.3 | 30.15 | 765.8 | 45.6 | 7.6 | 85 | N | 4.0 | 1.8 | ..... | ..... | 9cs;ok;s | SW | ..... | 0 | 0 | Cloudy | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.92 | 759.9 | 30.13 | 765.3 | 50.3 | 10.2 | 90 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 30.11 | 764.8 | 30.18 | 766.6 | 43.4 | 6.3 | 81 | ENE | 3.5 | 1.6 | ..... | ..... | 10s | ..... | ..... | 0.010 | 0.25 | Cloudy | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.11 | 637.9 | 30.25 | 768.3 | 48.2 | 9.0 | 45 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Fine | Prof. L. Perez. |
| Leon | 24.48 | 621.8 | 30.22 | 767.7 | 55.4 | 13.0 | 64 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.15 | 588.0 | 30.17 | 766.3 | 53.6 | 12.0 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 49.1 | 9.5 | 62 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | M. V. de Leon, M. E. |
| Tlacotalpam | 30.02 | 762.5 | 30.03 | 762.8 | 76.0 | 24.8 | 85 | NE | ..... | ..... | 3 | 0 | 10 | ..... | NE | 0 | 0 | Covered | M. M. Chásaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.47 | 596.0 | 30.23 | 767.8 | 50.0 | 10.0 | 75 | NE | 0.4 | 0.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.39 | 721.2 | 30.05 | 763.2 | 74.3 | 23.5 | 41 | NE | ..... | ..... | 1 | ..... | 1 | ..... | SW | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,261 m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.85 | 758.2 | 29.85 | 758.2 | 46.4 | 8.0 | ..... | W | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.70 | 754.3 | 29.75 | 755.7 | ..... | ..... | ..... | NW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.248 | 6.3 | ..... | |
| Helder | 29.79 | 756.7 | 29.79 | 756.7 | 47.4 | 3.0 | ..... | W | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.82 | 757.3 | 29.82 | 757.3 | 43.7 | 6.5 | 85 | W | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.77 | 756.1 | 29.82 | 757.3 | 50.5 | 10.3 | 69 | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.555 | 14.1 | Cloudy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.52 | 749.8 | 29.58 | 751.2 | 43.5 | 6.4 | 73 | SSW | 11.0 | 4.9 | ..... | ..... | 3 | ..... | ..... | 0.169 | 4.3 | ..... | |
| Brönö | 29.39 | 746.5 | 29.43 | 747.5 | 39.2 | 4.0 | 67 | SE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | 0.264 | 6.7 | ..... | |
| Christiania | 29.40 | 746.7 | 29.55 | 750.5 | 37.6 | 3.1 | 95 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.098 | 2.5 | Foggy ..... | |
| Tromsö | 29.55 | 750.5 | 29.59 | 751.6 | 36.3 | 2.4 | 75 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.02 | 762.5 | 30.21 | 767.4 | 63.0 | 17.2 | 81 | NW | 12.5 | 5.6 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.01 | 736.8 | 30.04 | 763.1 | 57.4 | 14.1 | 59 | WNW | 8.1 | 3.6 | ..... | ..... | 8 | WNW | ..... | 0 | 0 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.06 | 763.5 | 30.15 | 765.7 | 65.3 | 18.5 | 72 | WSW | 3.8 | 1.7 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.71 | 754.5 | 30.07 | 763.7 | 55.4 | 13.0 | 74 | SW | 13.7 | 6.1 | ..... | ..... | 9 | WSW | ..... | 0.004 | 0.1 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.17 | 766.4 | 30.24 | 768.2 | 66.2 | 19.0 | 73 | NW | 16.1 | 7.2 | ..... | ..... | 4 | ..... | ..... | 0.079 | 2.0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height (scale 0—9) | Sea or swell. Direction (from | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd.t. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| Duque da Terceira, Santiago, Cape Verd I. | ..... | ..... | 30.06 | 763.5 | 72.5 | 22.5 | ..... | NE | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 3 | ..... | D. clouds..... | C.C.da Fonseca Ferreira, Comd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, St. Thomas, Gulf of Guinea | ..... | ..... | 29.84 | 757.9 | 83.3 | 28.5 | ..... | SSE | ..... | ..... | 3 | ..... | 3 | ..... | SE | 2 | SE | D. clouds.... | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto de S. Jose de Bissao, Senegambia | ..... | ..... | 29.92 | 760.0 | 78.8 | 26.0 | ..... | SW | ..... | ..... | 2 | ..... | 1 | ..... | SW | ..... | ..... | Blue sky ..... | A. Ferreira, 2d Lt. |
| Sá da Bandeira. Ambrizette, S. 7° 13′, E. 12° 52′ | ..... | ..... | 29.74 | 755.4 | 82.4 | 28.0 | ..... | SW | ..... | ..... | 3 | ..... | 3 | ..... | ENE | 3 | SW | D. clouds.... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 29.92 | 759.9 | 75.6 | 24.2 | ..... | SSW | ..... | ..... | 2 | ..... | 4 | ..... | SSW | 1 | ..... | Blue sky..... | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeirá gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.37 | 746.0 | 29.79 | 756.7 | 52.3 | 11.3 | 47 | SE | 13 | 6 | ..... | ..... | 2ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.64 | 752.8 | 30.06 | 763.6 | 46.9 | 8.3 | 33 | SE | 7 | 3 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.89 | 759.1 | 30.13 | 765.4 | 46.0 | 7.8 | 52 | SSE | 4 | 2 | ..... | ..... | 1c | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.11 | 764.7 | 30.12 | 765.1 | 46.6 | 8.1 | 47 | SSE | 9 | 4 | ..... | ..... | 1s | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.44 | 747.7 | 30.10 | 764.6 | 34.2 | 1.2 | 75 | ESE | 11 | 5 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.96 | 761.1 | 30.04 | 762.9 | 45.1 | 7.3 | 44 | ENE | 18 | 8 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.01 | 762.2 | 30.03 | 762.7 | 41.2 | 5.1 | 83 | NE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.79 | 756.7 | 30.37 | 771.3 | 37.0 | 2.8 | 52 | SSE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.87 | 758.6 | 30.08 | 763.9 | 43.0 | 6.1 | 47 | NE | 9 | 4 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.94 | 760.5 | 29.96 | 761.0 | 39.9 | 4.4 | 74 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.70 | 728.9 | 30.14 | 765.5 | 50.0 | 10.0 | 52 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.24 | 768.2 | 30.16 | 766.1 | 48.7 | 9.3 | 34 | NNW | 2 | 1 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.86 | 758.5 | 30.37 | 771.3 | 27.9 | — 2.3 | 62 | E | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 30.05 | 763.3 | 30.34 | 770.5 | 32.0 | 0.0 | 58 | SE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.46 | 748.2 | 30.51 | 774.9 | 16.3 | — 8.7 | 52 | SE | 9 | 4 | ..... | ..... | 10c;cs | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Nukuss | 29.91 | 759.6 | 30.14 | 765.6 | 53.2 | 11.8 | 55 | WNW | 9 | 4 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.59 | 726.2 | 30.16 | 766.1 | 59.0 | 15.0 | 68 | Calm | 0 | 0 | ..... | ..... | 6 | ..... | ..... | Blank | Blank | ..... | Teich, A. M. |
| Barnaul | 29.65 | 753.2 | 30.20 | 767.0 | 11.3 | —11.5 | 71 | NE | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.04 | 763.1 | 30.36 | 771.1 | 13.6 | —10.2 | 42 | N | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking, (China) | 29.52 | 749.8 | 29.66 | 753.4 | 55.4 | 13.0 | 63 | Calm | 0 | 0 | ..... | ..... | 3c | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.93 | 760.2 | 30.03 | 762.7 | 28.9 | — 1.7 | 90 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.69 | 754.1 | 29.80 | 756.8 | 56.3 | 13.5 | 53 | S | 5.1 | 2.28 | ..... | ..... | 2k | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 29.95 | 760.8 | 30.01 | 762.2 | 56.8 | 13.8 | 71 | NW | 4.4 | 1.98 | ..... | ..... | 10 | ..... | ..... | 0.555 | 14.1 | Covered.... | Prof. Manuel de Navera |
| Burgos, Met. Obs'y | 27.00 | 685.9 | ..... | ..... | 48.2 | 9.0 | 73 | N | 5.2 | 2.34 | ..... | ..... | 6 | ..... | ..... | 0.039 | 1.0 | Cloudy..... | Domingo Martin y Perez. |
| Madrid, Royal Osservatory | 27.72 | 704.0 | ..... | ..... | 54.9 | 12.7 | 61 | NW | 13.4 | 6.00 | ..... | 2 | 4 | NW | ..... | Inap. | Inap. | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.77 | 756.2 | 29.92 | 760.0 | 71.4 | 21.9 | 46 | NNW | 4.2 | 1.89 | ..... | 2 | 3 | SE | ..... | 0 | 0 | Cloudy..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.05 | 737.9 | 29.95 | 760.8 | 53.1 | 11.7 | 83 | WSW | 2.5 | 1.1 | ..... | ..... | 10 | ..... | ..... | 0.016 | 0.4 | Covered..... | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.98 | 761.4 | 30.04 | 763.1 | 74.0 | 23.3 | 76 | N | 10.7 | 4.8 | ..... | 10cp | 4ks | ..... | N | 0.028 | 0.7 | Cloudy..... | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.87 | 758.7 | 29.92 | 760.0 | 84.7 | 29.1 | 69 | E | 6.0 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.98 | 761.5 | 30.08 | 764.1 | 58.8 | 14.9 | 60 | WNW | 6.1 | 2.7 | ..... | 3 | 7 | W | NW | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. | 29.93 | 760.2 | 30.02 | 762.5 | 79.2 | 26.2 | 94 | E | 12.0 | 5.36 | ..... | 2s | 3k | E | E | 0 | 0 | Clear. ..... | Leonardo de Tejeda, Ch't Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.73 | 755.2 | 29.77 | 756.2 | 34.9 | 1.6 | ..... | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.69 | 754.1 | 29.74 | 755.4 | 34.9 | 1.6 | 93 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 5 | 0 | ..... | |
| Hernosand | 29.61 | 752.2 | 29.67 | 753.5 | 36.0 | 2.2 | 93 | S | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0.157 | 4.0 | ..... | |
| Stockholm | 29.60 | 751.7 | 29.77 | 756.2 | 43.5 | 6.4 | 84 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.69 | 754.1 | 29.75 | 755.6 | 45.3 | 7.4 | 74 | SSW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.63 | 752.5 | 29.70 | 754.4 | 43.9 | 6.6 | 77 | SSE | 16.3 | 7.3 | ..... | ..... | 6 | ..... | ..... | 0.002 | 0.05 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.33 | 719.6 | 29.78 | 756.3 | 47.7 | 8.7 | 49 | NNE | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | The Observatory. |
| Zurich | 28.19 | 715.9 | 29.85 | 758.1 | 47.5 | 8.6 | 56 | N | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | Cloudy..... | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —4.6 mm.; Thermometer,—1.6 Cent.; Relative Humidity, —9 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.74 | 755.5 | 67.6 | 19.8 | 32 | ESE | 2 | 1.0 | ..... | ..... | 10 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.39 | 772.0 | 83.7 | 28.7 | ..... | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.71 | 754.5 | 59.2 | 15.1 | ..... | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.97 | 761.2 | 30.09 | 764.2 | 66.0 | 18.9 | 67 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.20 | 741.7 | 29.27 | 743.4 | 20.7 | — 6.3 | 78 | W | 8 | 3.6 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.34 | 745 2 | 29.66 | 753.4 | 14 | —10.0 | ..... | W | 4 | 1.8 | ..... | ..... | 8n | ..... | W | 0.05 | 1.3 | Light snow.. | W. R. Bigg. |
| *Chatham, N B | 29.18 | 741.2 | 29.24 | 742.7 | 17 | — 8.3 | 88 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | W | 0.03 | 0.8 | Light snow. | G. A. Blair. |
| Charlottetown, P. E. Island. | 28.97 | 735.8 | 29.01 | 736.8 | 28 | — 2.2 | 100 | NE | 22 | 9.8 | ..... | ..... | 10n | ..... | ..... | 0.256 | 6.48 | Light snow. | H. J. Cundall, C. E |
| Cornwall, Ontario | 29.34 | 745.2 | 29.55 | 750.6 | 14.5 | — 9.7 | 84 | NW | ..... | ..... | 2 | 0 | 7s | ..... | ..... | 0.02 | 0.5 | Cloudy ..... | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 29.94 | 760.5 | 29.99 | 761.7 | 46.3 | 7.9 | 100 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | W. H. Bevis. |
| *Father Point, Quebec | 29.28 | 743.7 | 29.30 | 744.2 | 20 | — 6.7 | 78 | Calm | 0 | 0 | ..... | 5k | 5ks | Calm | Calm | 0.03 | 0.8 | *Cloudy..... | J. McWilliams. |
| Fredericton, N. B | 29.17 | 740.9 | 29.24 | 742.7 | 16.3 | — 8.7 | 95 | NW | 11 | 4.9 | ..... | ..... | 10n | ..... | ..... | 0.40 | 10.2 | Snowing..... | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.50 | 749.3 | 30.48 | 772.9 | 2 | —16.7 | 95 | S | 2 | 0.9 | ..... | 0 | 2s | ..... | S | 0 | 0 | Fair | James Stewart. |
| Granton, Ontario | 28.64 | 727.4 | 29.81 | 757.2 | 15 | — 9.4 | ..... | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | 0.30 | 7.6 | Snowing..... | James Grant. |
| *Halifax, N. S | 28.70 | 731 2 | 28.93 | 734.8 | 34 | 1.1 | 96 | W | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0.692 | 17.58 | Light snow.. | F. Allison, M. A. |
| Hamilton, Ontario | 29.43 | 747.5 | 29.82 | 757.4 | 19.7 | — 6.8 | 84 | SW | ..... | ..... | 1 | 10cs | 0 | SW | ..... | 0 | 0 | Cloudy..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.32 | 744.7 | 29.68 | 753.9 | 15 | — 9.4 | 93 | SW | 13 | 5.8 | ..... | 10cs | 0 | Calm | ..... | 0.02 | 0.5 | Fair | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.06 | 738.1 | 29.11 | 739.4 | 30.5 | — 0.8 | 98 | NE | 14 | 6.3 | ..... | ..... | 10n | ..... | ..... | 0.01 | 0.3 | Overcast.... | C. H. Rigby. |
| Moose Factory, Ontario | 29.78 | 756.4 | 29.82 | 757.4 | 10.0 | —12.2 | 98 | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.70 | 17.8 | Snowing..... | J. R. Nason. |
| *Montreal, Quebec | 29.31 | 744.5 | 29.52 | 749.8 | 14 | —10.0 | 77 | W | 12 | 5.4 | ..... | 0 | Haze | ..... | ..... | 0.01 | 0.3 | Fair | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.02 | 737.1 | 29.77 | 756.1 | 12 | —11.1 | 75 | NW | 11 | 4.9 | ..... | 5k | 5ks | NW | NW | 0.05 | 1.3 | Cloudy. ..... | Rev. R. Mosley. |
| Peterboro, Ontario | 28.68 | 728.8 | 29.78 | 756.1 | 16.1 | — 8.8 | 60 | NW | ..... | ..... | 3 | ..... | 10ks | ..... | ..... | 0 | 0 | Overcast..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.07 | 738.4 | 29.81 | 757.2 | 18 | — 7.8 | 84 | NW | 7 | 3.1 | ..... | 10k | 0 | NW | ..... | 0.07 | 1.8 | Cloudy..... | H. Morgan. |
| Port Hastings, N. S | 28.92 | 734.6 | 28.97 | 735.8 | 31.9 | — 0.1 | ..... | E | 25 | 11.2 | ..... | ..... | ..... | ..... | ..... | 0.30 | 7.6 | Snowing..... | Peter Grant. |
| Port Stanley, Ontario | 29.12 | 739.6 | 29.80 | 756.9 | 23 | — 5.0 | 85 | W | 20 | 8.9 | ..... | ..... | 10n | ..... | W | 0.03 | 0.8 | Light snow. | M. Payne. |
| *Quebec, Quebec | 29.09 | 738.9 | 29.43 | 747.5 | 13 | —10.6 | 71 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.20 | 5.1 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.17 | 740.9 | 29.66 | 753.4 | 13 | —10.6 | 77 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | NW | 0.02 | 0.5 | Cloudy .... | W. H. McIntyre. |
| St. Andrews, N. B | 29.15 | 740.4 | 29.20 | 741.7 | 17 | — 8.3 | 91 | NE | ..... | ..... | 4 | ..... | 10n | ..... | ..... | 0.20 | 5.1 | Light snow. | Dr. Gove. |
| St. John, N. B | 28.88 | 733.5 | 29.05 | 737.9 | 19 | — 7.2 | 100 | N | 23 | 10.3 | ..... | ..... | 10n | ..... | ..... | 0.41 | 10.4 | Heavy snow | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.05 | 738.1 | 29.81 | 757.2 | 16 | — 8.9 | 87 | N | 23 | 10.3 | ..... | 5cs | 5ks | ..... | ..... | 0.35 | 8.9 | Cloudy..... | K. Stewart. |
| Stayner, Ontario | 28.93 | 734.8 | 29.76 | 755.9 | 13 | —10.6 | 92 | N | 13 | 5.8 | ..... | ..... | 10n | ..... | N | 0.20 | 5.1 | Light snow.. | R. J. Cole. |
| Stratford, Ontario | 28.42 | 721.9 | 29.79 | 756.7 | 14.8 | — 9.6 | 93 | NW | 6.5 | 2.9 | ..... | ..... | 10s | ..... | ..... | 0.15 | 3.8 | Overcast.... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.17 | 740.9 | 29.21 | 741.9 | 32 | 0.0 | 87 | E | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0.04 | 1.0 | Light snow.. | T. C. Hill. |
| *Toronto, Ontario | 29.38 | 746.2 | 29.70 | 756.7 | 15 | — 9.4 | 95 | NW | 13 | 5.8 | ..... | ..... | 10n | ..... | Calm | 0.03 | 0.8 | Cloudy..... | Magnetic Observatory. |
| Windsor, N. S | 28.81 | 731.8 | 28.90 | 734.0 | 33.5 | 0.8 | 95 | W | 3 | 1.3 | ..... | ..... | 10n | ..... | ..... | 0.48 | 12.2 | Snowing..... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | 29.33 | 745.0 | .. | ..... | 35.0 | 1.7 | 80 | SW | ..... | ..... | ..... | 10k | 10s | ..... | ..... | 0.60 | 15.2 | Cloudy..... | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrumental error and temperature. Inches. | BAROMETER. Corrected for instrumental error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Upper. 0—10. | CLOUDS. Amount. Lower. 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.38 | 746.2 | 29.61 | 752.1 | 20 | — 6.7 | 56 | NW | 15 | 6.7 | | 2k | 5ks | W | W | 0.02 | 0.5 | Fair | |
| Alpena, Michigan | 29.17 | 740.9 | 29.55 | 758.2 | 20 | — 6.7 | 85 | NW | 28 | 10.3 | | | 8s | | Calm | 0.27 | 6.9 | Cloudy | |
| Atlanta, Georgia | 28.91 | 734.3 | 30.12 | 765.0 | 32 | 0.0 | 50 | NW | 18 | 8.0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 29.72 | 754.9 | 29.74 | 755.4 | 32 | 0.0 | 79 | W | 16 | 7.2 | | 10k | 0 | W | | 0 | 0 | Cloudy | |
| Augusta, Georgia | 29.92 | 760.0 | 30.11 | 764.8 | 37 | 2.8 | 53 | NW | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Baltimore, Maryland | 29.77 | 756.1 | 29.82 | 757.4 | 33 | 0.6 | 79 | NW | 16 | 7.2 | | 5k | 5s | NW | NW | Inap | Inap. | Cloudy | |
| Barnégat, New Jersey | 29.67 | 753.6 | 29.69 | 754.1 | 31 | — 0.6 | 69 | W | 16 | 7.2 | | | 10s | | NW | Inap. | Inap. | Cloudy | |
| Bismarck, Dakota | 28.32 | 719.3 | 30.18 | 766.6 | 23 | — 5.0 | 73 | SE | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Boerne, Texas | 28.73 | 729.7 | 30.09 | 764.3 | 44 | 6.7 | 68 | N | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Boise City, Idaho | 27.08 | 687.8 | 30.04 | 763.0 | 48 | 8.9 | 93 | SE | 4 | 1.8 | | | 10n | | Calm | 0.08 | 0.8 | Light rain | |
| Boston, Massachusetts | 29.34 | 745.2 | 29.50 | 749.3 | 24 | — 4.4 | 87 | W | 18 | 8.0 | | 8cs;k | 0 | W | | 0.16 | 4.1 | Fair | |
| Brackettville, Texas | 29.03 | 737.3 | 30.06 | 763.5 | 60 | 15.6 | 82 | E | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 29.29 | 744.0 | 30.40 | 772.1 | 11 | —11.7 | 100 | N | 3 | 1.3 | | 1ck | 0 | Calm | | 0 | 0 | Clear | |
| Brownsville, Texas | 30.10 | 764.5 | 30.15 | 765.8 | 60 | 15.6 | 94 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Buffalo, New York | 29.03 | 737.3 | 29.77 | 756.1 | 16.5 | — 8.6 | 75 | NW | 10 | 4.5 | | 8cs | 1s | NW | NW | 0.20 | 5.1 | Cloudy | |
| Burkes, Arizona | | | | | 63 | 17.2 | 24 | S | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Burlington, Vermont | 29.26 | 743.2 | 29.56 | 750.8 | 15 | — 9.4 | 56 | NW | 8 | 3.6 | | 5k | 2s | NW | Calm | 0 | 0 | Fair | |
| Cairo, Illinois | 29.88 | 758.9 | 30.29 | 769.4 | 38 | 3.3 | 45 | W | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Camp Apache, Arizona | | | | | | | | | | | | | | | | | | | |
| Camp Grant, Arizona | 25.20 | 640.1 | 30.00 | 762.0 | 58 | 14.4 | 52 | E | 4 | 1.8 | | 10k | 0 | Calm | | 0 | 0 | Cloudy | |
| Camp Verde, Arizona | | | | | 46 | 7.8 | 54 | S | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Campo, California | 27.36 | 694.9 | 29.94 | 760.5 | 43 | 6.1 | 75 | E | 4 | 1.8 | | 5k | 0 | Calm | | 0 | 0 | Fair | |
| Cape Hatteras, N. Carolina | 29.96 | 761.0 | 29.97 | 761.2 | 38 | 3.3 | 45 | NW | 16 | 7.2 | | 0 | 1ks | | NW | 0.01 | 0.3 | Clear | |
| Cape Henry, Virginia | 29.89 | 759.2 | 29.90 | 759.4 | 34 | 1.1 | 61 | SW | 15 | 6.7 | | 1cs | 0 | W | | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 29.99 | 761.7 | 30.00 | 762.0 | 37 | 2.8 | 45 | NW | 28 | 12.5 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Cape May, New Jersey | 29.72 | 754.9 | 29.75 | 755.6 | 34 | 1.1 | 61 | W | 40 | 17.9 | | | 10s | | W | 0 | 0 | Cloudy | |
| Castroville, Texas | 29.40 | 746.7 | 30.12 | 765.0 | 55 | 12.8 | 45 | W | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.03 | 762.8 | 30.09 | 764.3 | 41 | 5.0 | 33 | NW | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 24.08 | 611.6 | 30.02 | 762.5 | 36 | 2.2 | 53 | W | 6 | 2.7 | | 5cs | 0 | Calm | | 0 | 0 | Fair | |
| Chicago, Illinois | 29.35 | 745.5 | 30.08 | 764.0 | 27 | — 2.8 | 88 | NW | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cincinnati, Ohio | 29.41 | 747.0 | 30.09 | 764.3 | 32 | 0.0 | 69 | NW | 10 | 4.5 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Cleveland, Ohio | 29.12 | 739.6 | 29.88 | 758.9 | 26 | — 3.3 | 88 | NW | 23 | 10.3 | | | 10n | | NW | 0.22 | 5.6 | Light snow | |
| Coleman City, Texas | 28.45 | 722.6 | 30.20 | 767.1 | 39 | 3.9 | 55 | N | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Columbus, Ohio | 29.10 | 739.1 | 29.98 | 761.5 | 28 | — 2.2 | 66 | NW | 16 | 7.2 | | | 10ks | | W | Inap. | Inap. | Cloudy | |
| Concho, Texas | | | | | | | | | | | | | | | | | | | |
| Corsicana, Texas | 29.81 | 757.2 | 30.30 | 769.6 | 43 | 6.1 | 38 | N | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Davenport, Iowa | 29.53 | 750.0 | 30.21 | 767.3 | 24 | — 4.4 | 74 | NW | 9 | 4.0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.38 | 644.6 | | | 33 | 0.6 | 79 | S | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Decatur, Texas | 29.12 | 739.6 | 30.35 | 770.9 | 40 | 4.4 | 65 | E | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Denison, Texas | 29.46 | 748.3 | 30.29 | 769.4 | 40 | 4.4 | 56 | N | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Denver, Colorado | 24.82 | 630.4 | 30.04 | 763.0 | 42 | 5.6 | 58 | S | 8 | 3.6 | | 5ck | 5s | Calm | Calm | 0 | 0 | Cloudy | |
| Des Moines, Iowa | 29.37 | 746.0 | 30.32 | 770.1 | 20 | — 6.7 | 70 | NW | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Detroit, Michigan | 29.18 | 741.2 | 29.88 | 758.9 | 22 | — 5.6 | 86 | NW | 8 | 3.6 | | | 10s | | Calm | 0.11 | 2.8 | Cloudy | |
| Dodge City, Kansas | 27.57 | 700.3 | 29.98 | 761.5 | 30 | — 1.1 | 78 | S | 4 | 1.8 | | 2c | 0 | W | | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.46 | 748.3 | 30.20 | 767.1 | 26 | — 3.3 | 63 | N | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Duluth, Minnesota | 29.55 | 750.6 | 30.28 | 769.1 | 20 | — 6.7 | 56 | N | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.39 | 746.5 | 30.14 | 765.5 | 57 | 13.9 | 75 | NE | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Eastport, Maine | 29.12 | 739.6 | 29.18 | 741.2 | 16 | — 8.9 | 100 | NW | 36 | 16.1 | | | 10n | | | 0.24 | 6.1 | Heavy snow | |
| Edinburg, Texas | | | | | 63 | 17.2 | 89 | Calm | | | 0 | 0 | 0 | | | 0 | 0 | Clear | |
| El Paso, Texas | 26.30 | 668.0 | | | 49 | 9.4 | 50 | E | 4 | 1.8 | | | 10s | | E | 0 | 0 | Cloudy | |
| Erie, Pennsylvania | 29.06 | 738.1 | 29.80 | 756.9 | 24 | — 4.4 | 87 | NW | 11 | 4.9 | | | 10n | | Calm | 0.09 | 2.3 | Light snow | |
| Escanaba, Michigan | 29.35 | 745.5 | 30.04 | 763.0 | 20 | — 6.7 | 66 | NW | 12 | 5.4 | | | 10s | | NW | Inap. | Inap. | Cloudy | |
| Florence, Arizona | 28.45 | 722.6 | 30.05 | 763.3 | 55 | 12.8 | 56 | W | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.97 | 710.4 | | | 26 | — 3.3 | 76 | SE | 8 | 3.6 | | 1c | 0 | Calm | | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.61 | 650.5 | 29.67 | 753.6 | 45 | 7.2 | 54 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.32 | 643.1 | 30.28 | 769.1 | 41 | 5.0 | 57 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.76 | 755.9 | 30.34 | 770.6 | 33 | 0.6 | 51 | N | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Griffin, Texas | 29.02 | 737.1 | 30.37 | 771.4 | 36 | 2.2 | 60 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.39 | 695.7 | | | 30 | — 1.1 | 78 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort McKavett, Texas | 27.93 | 709.4 | 29.91 | 759.7 | 43 | 6.1 | 28 | NE | 8 | 3.6 | | 0 | 0 | | | | | Clear | |
| Fort St. Michael, Alaska | | | | | | | | | | | | | | | | | | | |
| Fort Sill, Indian Territory | 29.06 | 738.1 | 30.22 | 767.6 | 35 | 1.7 | 70 | N | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Stevenson, Dakota | 28.20 | 716.8 | | | 24 | — 4.4 | 74 | SE | 10 | 4.5 | | 1c | 0 | Calm | | 0 | 0 | Fair | |
| Fredericksburg, Texas | 28.46 | 722.9 | 30.04 | 763.0 | 54 | 12.2 | 61 | NE | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Galveston, Texas | 30.16 | 766.1 | 30.20 | 767.1 | 61 | 16.1 | 66 | E | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Graham, Texas | 29.22 | 742.2 | 30.32 | 770.1 | 40 | 4.4 | 65 | N | 1 | 0.4 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Grand Haven, Michigan | 29.33 | 745.0 | 30.00 | 762.0 | 29 | — 1.7 | 78 | N | 12 | 5.4 | | 0 | 5s | | N | Inap. | Inap. | Fair | |
| Indianapolis, Indiana | 29.26 | 743.2 | 30.07 | 763.8 | 29 | — 1.7 | 67 | NW | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Indianola, Texas | 30.17 | 766.3 | 30.29 | 767.1 | 63 | 17.2 | 78 | NE | 17 | 7.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Jacksboro, Texas | | | | | | | | | | | | | | | | | | | |
| Jacksonville, Florida | 30.11 | 764.8 | 30.18 | 765.3 | 46 | 7.8 | 33 | NW | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.55 | 750.6 | 30.21 | 767.3 | 27 | — 2.8 | 64 | NW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Key West, Florida | 30.02 | 762.5 | 30.05 | 763.3 | 70 | 21.1 | 66 | N | 12 | 5.4 | | 3c;k | 1s | W;N | Calm | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 29.90 | 759.4 | 29.92 | 760.0 | 37 | 2.8 | 45 | NW | 21 | 9.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.10 | 739.1 | 30.16 | 766.1 | 29 | — 1.7 | 61 | W | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 29.43 | 747.5 | 30.21 | 767.3 | 25 | — 3.9 | 62 | N | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.12 | 663.4 | 30.27 | 768.8 | 48 | 8.9 | 63 | Calm | 0 | 0 | | | 8s | | NW | 0 | 0 | Cloudy | |
| Laredo, Texas | | | | | | | | | | | | | | | | | | | |
| Leavenworth, Kansas | 29.43 | 747.5 | 30.34 | 770.6 | 22 | — 5.6 | 72 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Los Angeles, California | 29.60 | 751.8 | 29.94 | 760.5 | 51.0 | 10.6 | 86 | NE | 3 | 1.3 | | 0 | 1s | | Calm | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.54 | 750.3 | 30.12 | 765.0 | 34 | 1.1 | 43 | W | 11 | 4.9 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Lynchburg, Virginia | 29.18 | 741.2 | 29.88 | 758.9 | 35 | 1.7 | 52 | W | 8 | 3.6 | | 0 | 5ks | | W | 0 | 0 | Fair | |
| Madison, Wisconsin | 29.09 | 738.9 | 30.14 | 765.5 | 22 | — 5.6 | 72 | NW | 15 | 6.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Marquette, Michigan | 29.31 | 744.5 | 30.05 | 763.3 | 22 | — 5.6 | 72 | NW | 20 | 8.9 | | 5c | 5ks | NW | Calm | 0.07 | 1.8 | Cloudy | |
| Mason, Texas | 28.58 | 725.9 | 30.39 | 771.9 | 47 | 8.3 | 55 | NE | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.96 | 761.0 | 30.29 | 769.4 | 39 | 3.9 | 63 | NW | 4 | 1.8 | | 0 | Fog | | Calm | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.31 | 744.5 | 30.08 | 764.0 | 24 | — 4.4 | 74 | NW | 16 | 7.2 | | 1c | 0 | Calm | | 0 | 0 | Clear | |
| Mobile, Alabama | 30.20 | 767.1 | 30.25 | 768.3 | 41.5 | 5.3 | 53 | N | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.99 | 761.7 | 30.24 | 768.1 | 38 | 3.3 | 46 | NW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.78 | 731.0 | 29.85 | 758.2 | 36 | 2.2 | 71 | SW | 16 | 7.2 | | | 10s | | SW | 0.08 | 2.0 | Cloudy | |
| Mt. Washington, N. H. | 22.87 | 580.9 | 29.23 | 742.4 | 2 | —16.7 | 86 | NW | 30 | 13.4 | | 5c | 8ks | NW | NW | | 0 | Fair | |
| Nashville, Tennessee | 29.66 | 753.4 | 30.22 | 767.6 | 34 | 1.1 | 52 | W | 4 | 1.8 | | 0 | Sm'e | | | | 0 | Clear | |
| New Haven, Connecticut | 29.49 | 749.0 | 29.61 | 752.1 | 31 | — 0.6 | 58 | W | 15 | 6.7 | | 5cs | 2s | SW | W | 0.07 | 1.8 | Fair | |
| New London, Connecticut | 29.54 | 750.3 | 29.57 | 751.1 | 27 | — 2.8 | 64 | NW | 12 | 5.4 | | 3cs | 1ks | NW | NW | 0.08 | 2.0 | Fair | |
| New Orleans, Louisiana | 30.18 | 766.6 | 30.24 | 768.1 | 60 | 10.0 | 45 | N | 10 | 4.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.52 | 749.8 | 29.57 | 751.1 | 27 | — 2.8 | 64 | W | 22 | 9.8 | | 5ck | 0 | Calm | | 0.16 | 4.1 | Fair | |
| New York, New York | 29.49 | 749.0 | 29.67 | 753.6 | 28 | — 2.2 | 57 | W | 18 | 8.0 | | 0 | 8ks | | W | 0.03 | 0.8 | Fair | |
| Norfolk, Virginia | 29.84 | 757.9 | 29.90 | 759.4 | 36 | 2.2 | 53 | W | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.19 | 690.6 | 29.90 | 759.4 | 25 | — 3.9 | 75 | S | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.94 | 760.5 | 29.98 | 761.5 | 42.0 | 5.6 | 100 | Calm | 0 | 0 | | | Fog | | Calm | 0 | 0 | Foggy | |
| Omaha, Nebraska | 29.13 | 739.9 | 30.31 | 769.9 | 24 | — 4.4 | 74 | NW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Oswego, New York | 29.36 | 745.7 | 29.70 | 754.4 | 19 | — 7.2 | 69 | NW | 14 | 6.3 | | | 10s | | NW | 0.02 | 0.5 | Cloudy | |
| Pembina, Dakota | 29.47 | 748.5 | 30.40 | 772.1 | 4 | —15.6 | 100 | S | 3 | 1.3 | | 0 | 5s | | NW | 0 | 0 | Fair | |
| Philadelphia, Pa | 29.67 | 753.6 | 29.72 | 754.9 | 29 | — 1.7 | 78 | W | 13 | 5.8 | | 1cs | 5ks | W | W | 0.03 | 0.8 | Fair | |
| Phœnix, Arizona | 28.74 | 730.0 | 30.52 | 775.2 | 60 | 15.6 | 65 | NE | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.87 | 453.9 | 30.08 | 764.0 | 22 | — 5.6 | 32 | NW | 12 | 5.4 | | | 10s | | W | 0 | 0 | Cloudy | |
| Pioche, Nevada | 28.98 | 609.1 | 29.75 | 755.6 | 43 | 6.1 | 92 | S | 6 | 2.7 | | 0 | 8s | | S | 0.01 | 0.3 | Fair | |
| Pittsburg, Pennsylvania | 29.03 | 737.3 | 29.88 | 758.9 | 25 | — 3.9 | 75 | W | 11 | 4.9 | | | 10s | | NW | 0.14 | 3.6 | Cloudy | |
| Port Huron, Michigan | 29.14 | 740.1 | 29.83 | 757.7 | 26 | — 3.3 | 75 | NW | 17 | 7.6 | | | 10ks | | NW | 0.03 | 0.8 | Cloudy | |
| Portland, Maine | 29.34 | 745.2 | 29.80 | 746.5 | 25 | — 3.9 | 62 | N | 12 | 5.4 | | 1k | 0 | Calm | | 0.02 | 0.5 | Clear | |
| Portland, Oregon | 29.86 | 758.4 | 29.96 | 761.0 | 50.0 | 10.0 | 86 | N | 7 | 3.1 | | 0 | 1s | | | Inap. | Inap. | Clear | |
| Prescott, Arizona | 24.69 | 627.1 | 30.05 | 763.3 | 42 | 5.6 | 66 | Calm | 0 | 0 | | 2ck | 0 | W | | 0 | 0 | Fair | |
| Pilot Point, Texas | 29.07 | 738.4 | 29.88 | 758.9 | 57 | 13.9 | 57 | SE | 14 | 6.3 | | Haze | Haze | | | 0 | 0 | Hazy | |
| Punta Rassa, Florida | 30.03 | 762.8 | 30.05 | 763.3 | 65 | 18.3 | 73 | NW | 21 | 9.4 | | 2c | 0 | W | | 0 | 0 | Clear | |
| Red Bluff, California | 29.46 | 748.3 | 29.81 | 757.2 | 57 | 13.9 | 87 | NW | 12 | 5.4 | | | 10s | | Calm | 0.11 | 2.8 | Cloudy | |
| Rio Grande City, Texas | | | | | | | | | | | | | | | | | | | |
| Rochester, New York | 29.05 | 737.9 | 29.70 | 754.4 | 11 | —11.7 | 80 | NW | 13 | 5.8 | | 4k | 1s | W | Calm | 0.29 | 7.4 | Fair | |
| Roseburg, Oregon | 29.34 | 745.2 | 29.90 | 759.4 | 48.0 | 8.9 | 96 | Calm | 0 | 0 | | Haze | 8s | | Calm | 0 | 0 | Cloudy | |
| Sacramento, California | 29.73 | 755.1 | 29.81 | 757.2 | 58 | 14.4 | 88 | SE | 22 | 9.8 | | | 10s | | S | 0.23 | 5.8 | Cloudy | |
| St. Louis, Missouri | 29.64 | 752.8 | 30.26 | 768.6 | 27 | — 2.8 | 64 | W | 11 | 4.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| St. Marks, Florida | 30.16 | 766.1 | 30.18 | 766.6 | 42 | 5.6 | 42 | N | 14 | 6.3 | | 2c;cs | 0 | N | | 0 | 0 | Fair | |
| St. Paul, Minnesota | 29.36 | 745.7 | 30.25 | 768.3 | 22 | — 5.6 | 65 | NW | 10 | 4.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.57 | 649.5 | 29.90 | 759.4 | 54 | 12.2 | 55 | E | 4 | 1.8 | | | 10ks | | Calm | 0 | 0 | Cloudy | |
| San Antonio, Texas | 29.50 | 749.3 | 30.10 | 764.5 | 53 | 11.7 | 42 | N | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| San Diego, California | 29.90 | 759.4 | 29.98 | 761.5 | 49 | 9.4 | 96 | N | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.23 | 742.4 | 29.93 | 760.2 | 26 | — 3.3 | 88 | W | 27 | 12.1 | | 5k | 5ks | NW | NW | 0.07 | 1.8 | Cloudy | |
| Sandy Hook, New Jersey | 29.64 | 752.8 | 29.68 | 753.9 | 29 | — 1.7 | 67 | NW | 18 | 8.0 | | 5k | 5s | NW | NW | 0.29 | 7.4 | Cloudy | |
| San Francisco, California | 29.79 | 756.7 | 29.85 | 758.2 | 56.8 | 13.8 | 84 | S | 4 | 1.8 | | 2cs | 5s | Calm | Calm | 0.03 | 0.8 | Fair | |
| Santa Fé, New Mexico | 23.84 | 592.8 | 29.88 | 758.9 | 43 | 6.1 | 59 | Calm | 0 | 0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Savannah, Georgia | 30.02 | 762.5 | 30.12 | 765.0 | 42 | 5.6 | 34 | NW | 9 | 4.0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Shreveport, Louisiana | 30.04 | 763.0 | 30.27 | 768.8 | 50 | 10.0 | 79 | E | 2 | 0.9 | | 0 | 2ks | | SW | 0 | 0 | Fair | |
| Silver City, New Mexico | 24.34 | 618.2 | 30.55 | 776.0 | 45 | 7.2 | 68 | W | 2 | 0.9 | | 0 | 8s | | Calm | 0 | 0 | Fair | |
| Smithville, North Carolina | 30.04 | 763.0 | 30.07 | 763.8 | 37 | 2.8 | 45 | NW | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.44 | 747.8 | 29.67 | 751.1 | 28 | — 2.2 | 88 | NW | 14 | 6.3 | | 0 | 8ks | | NW | Inap. | Inap. | Cloudy | |
| Stockton, Texas | 27.13 | 689.1 | 30.13 | 765.3 | 38 | 3.3 | 54 | NE | 4 | 1.8 | | 5c | 0 | NW | | 0 | 0 | Fair | |
| Thatcher's Island, Mass | 29.29 | 744.0 | 29.35 | 745.5 | 26 | — 3.3 | 52 | NW | 18 | 8.0 | | 8k | 0 | W | | 0.72 | 18.3 | Fair | |
| Toledo, Ohio | 29.21 | 741.9 | 29.92 | 760.0 | 28 | — 2.2 | 88 | W | 10 | 4.5 | | 5c | 0 | NW | | 0.01 | 0.3 | Fair | |
| Tucson, Arizona | 27.50 | 698.5 | 30.05 | 763.3 | 61 | 16.1 | 40 | S | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.62 | 752.3 | 30.11 | 764.8 | 44.0 | 6.7 | 92 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Unalashka, Aleutian Islands | | | | | 33 | 0.6 | 79 | S | | | 2 | | 10s | | SW | 0.10 | 2.5 | Cloudy | |
| Uvalde, Texas | 29.27 | 743.4 | 30.09 | 764.3 | 59 | 15.0 | 48 | NE | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 30.04 | 763.0 | 30.32 | 770.1 | 42 | 5.6 | 58 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Virginia City, Montana | 24.24 | 615.7 | 29.72 | 754.9 | 45 | 7.2 | 61 | SE | 1 | 0.4 | | 10c | 0 | Calm | | 0 | 0 | Cloudy | |
| Visalia, California | 29.47 | 748.5 | 29.84 | 757.9 | 54.5 | 12.5 | 83 | Calm | 0 | 0 | | | 10s | | Calm | Inap. | Inap. | Cloudy | |
| Washington, D. C. | 29.72 | 754.9 | 29.84 | 757.9 | 33 | 0.6 | 56 | NW | 14 | 6.3 | | 2c | 8s | Calm | NW | Inap. | Inap. | Cloudy | |
| Wickenburg, Arizona | | | | | 53 | 11.7 | 73 | Calm | | | 0 | 0 | 0 | | | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 29.94 | 760.5 | 30.02 | 762.5 | 36 | 2.2 | 38 | NW | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.51 | 647.9 | 29.87 | 758.7 | 46 | 7.8 | 92 | S | 4 | 1.8 | | | 10ks | | SW | 0.25 | 7.1 | Cloudy | |
| Wood's Holl, Mass | 29.49 | 749.0 | 29.53 | 750.0 | 26 | — 3.3 | 88 | NW | 36 | 16.1 | | 5cs | 5ks | NW | NW | Inap. | Inap. | Cloudy | |
| Yankton, Dakota | 29.01 | 736.8 | 30.43 | 772.9 | 13 | —10.6 | 62 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Yuma, Arizona | 29.70 | 754.4 | 29.86 | 758.4 | 58 | 14.4 | 76 | W | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.72 | 729.5 | 30.22 | 767.6 | 32 | 0.0 | 89 | | | | | | | | | | | | J. B. Gordon. |
| Havana, Cuba, W. I | 29.98 | 761.5 | 30.03 | 762.8 | 75 | 23.9 | 72 | NW | 9.6 | 4.3 | | 0 | 8n | | N | 0.02 | 0.5 | Cloudy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | | | | | | | | | | | | | | | | | | | James Gall. |
| Medellin, Colombia, S. A | 25.18 | 639.6 | | | 67.0 | 19.4 | 82 | Calm | 0 | 0 | | 2c | 2ks | | | 0 | 0 | | Thomas Herran. |
| Navassa, W. I | 29.91 | 759.7 | 29.99 | 761.7 | 81 | 27.2 | | E | 2.8 | 1.3 | | | | | | 0 | 0 | Partly cl'dy. | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 29.96 | 761.0 | 29.96 | 761.0 | 83 | 28.8 | 79 | NE | | | 3 | 5k | 7ks | NE | | 0 | 0 | ½ Clouded. | C. J. Hering. |
| Santiago de Cuba, W. I | | | | | | | | | | | | | | | | | | | Robert Mason. |
| St. Thomas, W. I | | | | | | | | | | | | | | | | | | | G. O. Gellich. |
| York Factory, B. A | 29.92 | 760.0 | 29.97 | 761.2 | —15.5 | —26.4 | 71 | N | 5 | 2.2 | | 1c | 0 | N | | 0 | 0 | Fair | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,586.9 (?) m., Fort Grimm, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,385.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.855 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.39 in.; Wickenburg, 2.69 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D, Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.82 | 757.4 | 57 | 13.9 | 55 | 12.8 | 87 | SSW | 9 | 4.0 | .... | ..... | 10 | ..... | SSW | 0.024 | 0.61 | ..... | ..... | Cloudy..... | |
| Navy Yard, Pensacola, Fla. | 30.25 | 768.3 | 45 | 7.2 | 45 | 7.2 | 61 | NE | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 29.51 | 749.5 | 66 | 18.9 | 22 | — 5.6 | 89 | WNW | 10 | 4.5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan.....* | 30.14‡ | 765.5‡ | ..... | ..... | 45 | 7.2 | 76 | NE | ..... | ..... | 2 | ..... | 10s | ..... | ENE | 0 | 0 | ..... | ..... | Overcast..... | |
| Adams, Panama .....* | 29.89 | 759.2 | 80 | 26.7 | 79 | 26.1 | 95 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Alaska, Sitka, Alaska..... | 30.00‡ | 762.0‡ | ..... | ..... | 38 | 3.3 | 90 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.425 | 10.80 | Smooth | ..... | Overcast..... | |
| Alliance, Naples, Italy..... | 29.58‡ | 751.3‡ | ..... | ..... | 57 | 13.9 | 63 | W | ..... | ..... | 4–5 | ..... | 8 | ..... | W | ..... | ..... | ..... | ..... | Squally..... | |
| Ashuelot, Hong-Kong, China. ...* | 29.97‡ | 761.2‡ | ..... | ..... | 67 | 19.4 | 95 | ESE | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Showery..... | |
| Canonicus, New Orleans, La.....* | 30.20 | 767.1 | 41 | 5.0 | 50 | 10.0 | 58 | NE | ..... | .... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Colorado, New York, N. Y..... | 29.60 | 751.8 | 29 | — 1.7 | 28 | — 2.2 | 80 | WNW | 20 | 8.9 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Overcast..... | |
| Constitution Lisbon, Portugal..... | 30.06‡ | 763.5‡ | ..... | ..... | 57 | 13.9 | 81 | WSW | ..... | ..... | 3 | ..... | 8 | ..... | wsw | ..... | ..... | ..... | ..... | Cloudy..... | |
| Despatch, Genoa, Italy..... | 29.53‡ | 750.0‡ | ..... | ..... | 52 | 11.1 | 66 | NNE | ..... | ..... | 5 | ..... | 10 | ..... | NE | ..... | ..... | Smooth | ..... | Rainy ..... | |
| Franklin, Norfolk, Va.....* | 30.00 | 762.0 | 55 | 12.8 | 37 | 2.8 | 60 | WSW | 15.6 | 7.0 | ..... | ..... | 2 | ..... | N | 0 | 0 | ..... | ..... | Clear..... | |
| Gettysburg, Genoa, Italy ..... | 29.68‡ | 753.9‡ | ..... | ..... | 51 | 10.6 | 79 | NNW | ..... | ..... | 5 | ..... | 10 | ..... | N;W | 0.12 | 3.0 | ..... | ..... | Rainy ..... | |
| Hartford, Montevideo, Uruguay.* | 29.93 | 760.2 | 70 | 21.1 | 68 | 20.0 | 84 | NW | ..... | ..... | 4 | ..... | 10 | ..... | NW | 0.01 | 0.3 | Smooth | ..... | Cloudy..... | |
| Michigan, Erie, Pa.....† | 29.91‡ | 759.7‡ | ..... | ..... | 23 | — 5.0 | 89 | N | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Monocacy. Shanghai, China.....* | 30.15‡ | 765.8 | ..... | ..... | 51 | 10.6 | 86 | SE | ..... | ..... | 2 | ..... | 10 | ..... | SE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongahela Yokohama, Japan .....* | 30.14‡ | 765.5‡ | ..... | ..... | 47 | 8.3 | 62 | NW | ..... | ..... | 1–2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C.....* | 30.10 | 764.5 | 43 | 6.1 | 42 | 5.6 | 48 | NNW | 7 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Onward, Callao, Peru.....†* | 30.02 | 762.5 | ..... | ..... | 65 | 18.3 | 92 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | WNW | Misty..... | |
| Palos, Tientsin, China.....* | 29.69 | 754.1 | 60 | 15.6 | 59 | 15.0 | 49 | WSW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 36 | 2.2 | 91 | WNW | ..... | ..... | 1 | ..... | 5 | ..... | SSE | ..... | ..... | ..... | ..... | Fair..... | |
| Pensacola, Coquimbo, Chili..... | 29.92‡ | 760.0‡ | ..... | ..... | 58 | 14.4 | 94 | N | 3 | 1.3 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | Smooth | SW | Fair ..... | |
| Plymouth, Wood's Holl, Mass..... | 29.55‡ | 750.6‡ | ..... | ..... | 29 | — 1.7 | 66 | WNW | ..... | ..... | 5–6 | ..... | 8? | ..... | ..... | ..... | ..... | ..... | ..... | Clear?..... | |
| Powhatan, Norfolk, Va..... | 29.87‡ | 758 7‡ | ..... | ..... | 40 | 4.4 | 52 | WSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Quinnebaug, Gibraltar, Med..... | 30.03‡ | 762.8‡ | ..... | ..... | 63 | 17.2 | 57 | NW | ..... | ..... | 3 | ..... | 2 | ..... | W | ..... | ..... | ..... | ..... | Fair..... | |
| Ranger. Amoy, China.....*. | 30.03‡ | 762.8‡ | ..... | ..... | 61 | 16.1 | 88 | NE | ..... | ..... | 3 | ..... | 10 | ..... | SW | ..... | ..... | Smooth | ..... | Overcast..... | |
| Richmond. N. 12° 29′, E. 60° 19′..... | 29.90‡ | 759.4‡ | ..... | ..... | 80 | 26.7 | 87 | NE | ..... | ..... | 2 | ..... | 8 | ..... | NE | 0 | 0 | Smooth | | Cloudy..... | |
| Rio Bravo, Brownsville, Texas..... | 30.10 | 764.5 | 62 | 16.7 | 60 | 15.6 | 100 | NE | ..... | ..... | 1 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md... ..... | 29.81‡ | 757.2‡ | ..... | ..... | 34 | 1.1 | ..... | NW | ..... | ..... | 5 | ..... | 10 | ..... | NW | 0 | 0 | ..... | ..... | Cloudy ..... | |
| Saratoga, N. 36° 38′, W. 73° 19′..... | 29.92‡ | 760.0‡ | ..... | ..... | 37 | 2.8 | 66 | W | ..... | ..... | 4 | ..... | 10 | ..... | E | 0 | 0 | Mod'ate | NW | D. clouds..... | |
| St. Louis, League Island, Pa ..... | 29.76‡ | 755.9 | ..... | ..... | 28 | — 2.2 | ..... | WSW | 17 | 7.6 | ..... | ..... | 5 | ..... | W | 0.05 | 1.3 | ..... | ..... | Fair..... | |
| Supply, New York, N. Y..... | 29.65‡ | 753.1‡ | ..... | ..... | 28 | — 2.2 | 100 | WNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Trenton. Genoa, Italy.....*. | 29.48‡ | 748.8‡ | ..... | ..... | 50 | 10.0 | 79 | N | ..... | ..... | 4–6 | ..... | 10 | ..... | S;E | 0 | 0 | Mod'ate | S | Rainy..... | |
| Tuscarora. Tangolatangola, Mexico*. | 29.93‡ | 760.2‡ | ..... | ..... | 76 | 24.4 | 77 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Long | E | Clear..... | |
| Vandalia Boston, Mass.....†. | 29.75‡ | 755.6‡ | ..... | ..... | 28 | — 2.2 | 74 | •W | ..... | ..... | 2–5 | ..... | 2 | ..... | ESE | ..... | ..... | ..... | ..... | Fair ..... | |
| Wabash, Boston, Mass..... | 29.51‡ | 749.5‡ | ..... | ..... | 25 | — 3.9 | 82 | W | 11 | 4.9 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Fair ..... | |
| Wyoming, Alexandria, Egypt ....* | 30.00‡ | 762.0‡ | ..... | ..... | 76 | 24.4 | 68 | ESE | ..... | ..... | 0–1 | ..... | 10 | ..... | ..... | ..... | ..... | Smooth | ..... | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From | Miles per hour. | Meters per second. | 0—12. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | |
| S. S. Colima, N. 7° 45′, W. 82° 48′ † | | 29.82‡ | 760.0‡ | 81 | 27.2 | | Calm | | | 0 | | 6 | | Calm | 0.03 in. or 0.8 mm | Small | SSW | Misty | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota, Capt. H. G. Morse, Victoria, Vancouver I.† * | | 29.86‡ | 758.4‡ | | | | SE | | | 1 | | 10 | | | 0 | None | | Fine | B. Lawless |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, S. 18° 40′, W. 172° 40′ | | 29.01‡ | 769.7‡ | | | | SE | | | 5 | | 2 | | SW | | confused | SE | Fine | R. C. Ghest, 1st Officer |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic, N. 42° 48′, W. 57° 26′ * | | 29.95‡ | 760.7‡ | 40 | 4.4 | | W | | | 6 | | 3 | | Calm | | High | W | Squally | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, N. 44° 35′, W. 171° 49′ * | | 30.36‡ | 771.1‡ | 42 | 5.6 | 91 | S | | | 6 | | n | | S | 0 | Rough | S | Misty | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 29° 10′, E. 129° 17′ * | | 29.89‡ | 759.2‡ | 67 | 19.4 | ?? | N | | | 5 | | k | | N | Blank | High | N | Overcast | Capt. W. H. Kidley |
| §S. S. Oceanic, Capt. J. Metcalf, N. 35° 20′, W. 174° 36′ | | 30.21‡ | 767.3‡ | 60 | 15.6 | ?? | S | | | 5 | | 6 | | SW | | 2 | SSE | D. clouds | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. §The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the date may be in error one day; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 29° 39′, W. 79° 43′ | | 30.07‡ | 763.8‡ | 67.0 | 19.4 | 95 | N | | | 6 | | 0 | | | 0 | Rough | N | Clear | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, Capt. G. Meyer, N. 38° 59′, W. 69° 55′ | | 29.60‡ | 763.4‡ | | | | WNW | | | 6 | | 10 | | W | | Rough | WNW | Snowing | G. Risius, 3rd Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Philadelphia, Pa | | 29.90‡ | 759.4‡ | .31 | —0.6 | | WNW | | | 5 | | 8 | | NW | Mod'ate | | | Fair | Captain Sargent |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher, & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| Peruvian, N. 45° 00′, W. 52° 30′ | †* | 29.57‡ | 751.1‡ | 40 | 4.4 | 83 | W | | | 5 | | 5? | | WSW | | Long | W | Clear/ | J. Powell, 4th Officer. |
| **MARINE SERIES. (Miscellaneous.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the cooperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller, Off Boston Light, Mass. Bay | | 29.51‡ | 749.5‡ | 33 | 0.6 | 74 | W | 17 | 7.6 | | | 0 | | | 0.49 in. or 12.4 mm | | | Clear | [illegible] Jorgensen. |
| Brigantine "George," of Halifax | | | | | | | | | | | | | | | | | | | Willard N. Platt. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

NOTE.—The originals give the barometer as read off: wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

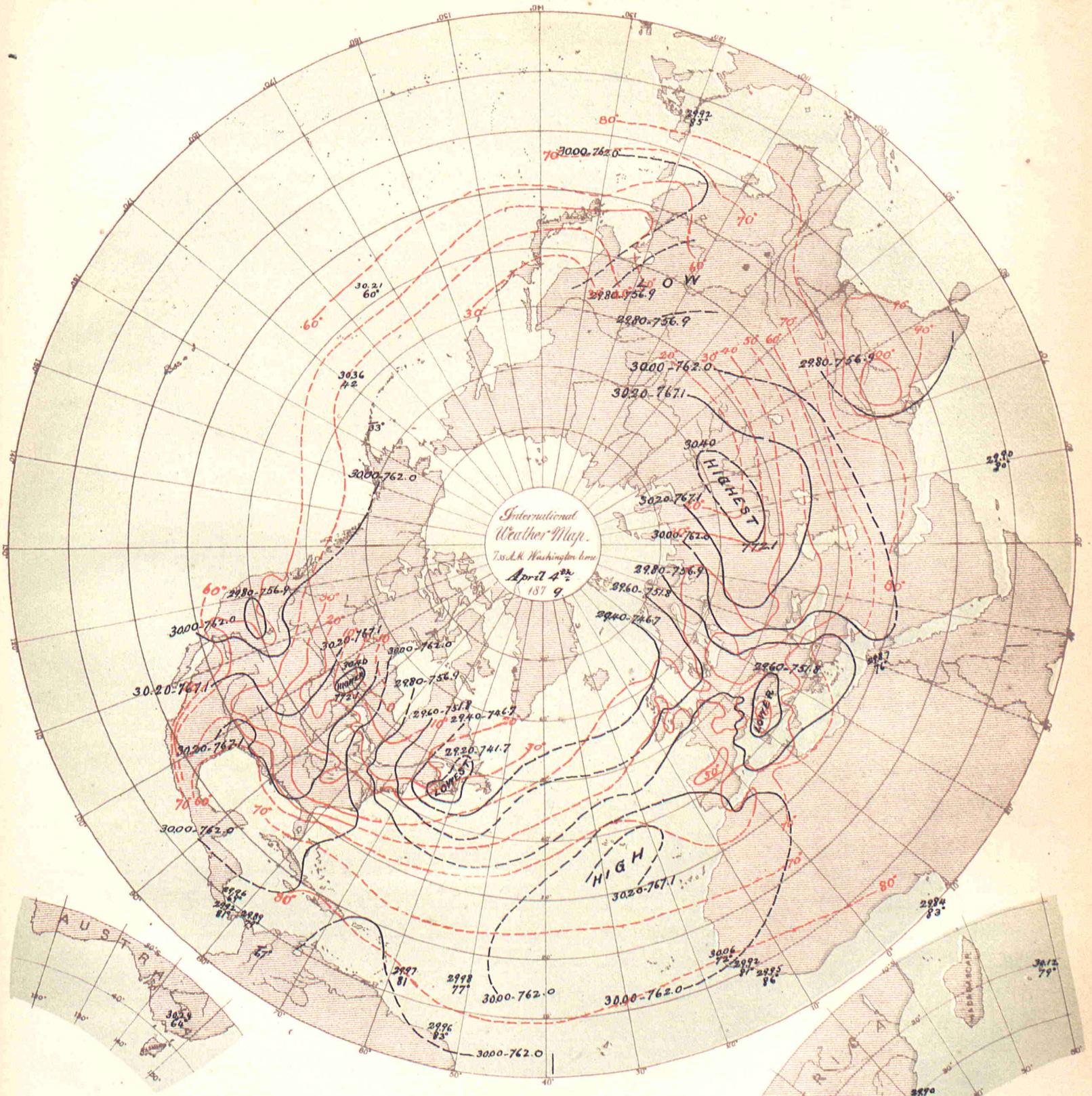
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$.) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIOAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 5, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGEGIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instru-m'tal error and temperature. Inches. | Barometer. Corrected for instru-m'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 30.08 | 764.0 | 64.8 | 18.2 | 63 | Calm | | | 0 | | 0 | | | 0 | 0 | Clear | Kesxuche. |
| Algiers | | | 30.00 | 762.1 | 61.5 | 16.4 | 60 | NNE | | | 2 | | 2 | | | 0.256 | 2.5 | Fair | Tourillere. |
| La Calle | | | 30.02 | 762.6 | 61.0 | 16.1 | 76 | NW | | | 6 | | 5 | | | 0.024 | 0.6 | Cloudy | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 30.08 | 764.0 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 30.06 | 763.4 | 62.2 | 16.8 | 28 | NE | | | 3 | | 0 | | | 0 | 0 | Clear | Herbin. |
| Tebessa | | | 30.06 | 763.4 | 52.7 | 11.5 | 56 | W | | | 4 | | 10 | | | 0 | 0 | Covered | Watrin. |
| Geriville | | | 30.06 | 763.6 | 57.7 | 14.3 | 95 | N | | | 3 | | 0 | | | 0 | 0 | Clear | Brugnlaux. |
| Laghouat | | | 30.06 | 763.6 | 65.8 | 18.8 | 32 | NNE | | | 3 | | 0 | | | 0 | 0 | Clear | Bertrand. |
| Biskra | | | 30.05 | 763.2 | 68.7 | 20.4 | 36 | NW | | | 3 | | 0 | | | 0 | 0 | Clear | Chanvaux. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.20 | 743.9 | 29.85 | 758.1 | 46.0 | 7.8 | 82 | NW | | | 3 | | 10 | | | 0.134 | 3.4 | Raining | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.12 | 739.7 | 29.91 | 759.6 | 40.3 | 4.6 | 78 | NNW | | | 2 | | 10 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 28.91 | 734.3 | 29.80 | 756.9 | 44.6 | 7.0 | 82 | Calm | | | 0 | | 10sn | | W | 0.085 | 2.15 | | Julius Mikolik. |
| Gratz | 28.61 | 726.6 | 29.86 | 758.5 | 47.8 | 8.8 | 67 | NW | | | 4 | | 10 | | | 0.236 | 6.0 | | Andreas Rospini. |
| Hermannstadt | 28.35 | 720.0 | 29.80 | 756.9 | 41.7 | 5.4 | 86 | E | | | 1 | | 10 | | | 0.285 | 7.25 | Snowing | Prof. A. Gottschling. |
| Kremsmünster | 28.58 | 725.9 | 29.94 | 760.5 | 44.6 | 7.0 | 67 | W | | | 3 | | 10 | | | 0.055 | 1.4 | | Prof. C. Wagner. |
| Lemberg | 28.89 | 733.9 | 29.91 | 759.6 | 41.4 | 5.2 | 54 | SE | | | 3 | | 4 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 29.08 | 738.8 | 29.79 | 756.6 | 55.8 | 13.2 | 49 | NE | | | 3 | | 10 | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.35 | 745.5 | 29.82 | 757.3 | 50.9 | 10.5 | 51 | SE | | | 3 | | 10 | | | 0 | 0 | | Julius Csics, S. J. |
| Szegedin | 29.47 | 748.6 | 29.76 | 755.7 | 54.7 | 12.6 | 75 | Calm | | | 0 | | 10 | | | 0.165 | 4.20 | | Karl Stancel. |
| Trieste | 29.72 | 754.9 | 29.82 | 757.5 | 57.7 | 14.3 | 52 | E | | | 1 | | 9 | | | 0 | 0 | | P. Busin. |
| Vienna | 29.19 | 741.5 | 29.91 | 759.7 | 42.8 | 6.0 | 79 | NW | | | 3 | | 10 | | | 0.961 | 24.4 | | I. R. Central Met. Obs'y |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment o observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.09 | 764.1 | 29.89 | 759.2 | 52.2 | 11.2 | 72 | SW | | | 2 | | 9 | | WSW;sW | 0.022 | 0.55 | | Royal Observatory. |
| Furnes | 29.86 | 758.3 | 29.88 | 758.9 | 55.9 | 13.3 | 67 | SW | | | 4 | | 8 | | | 0 | 0 | | M. E. de Cae. |
| Maeseyck | 29.79 | 756.6 | 29.91 | 759.8 | 52.9 | 11.6 | 79 | SW | | | 0 | | 10 | | | 0.063 | 1.6 | | M. Pierrot. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0; instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m., Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.44 | 747.8 | 29.54 | 750.3 | 47.4 | 8.6 | ..... | S | 22 | 9.8 | ..... | ..... | 9 | ..... | ..... | 0.050 | 1.27 | Overcast..... | W. Boswell. |
| Ardrossan | 29.45 | 748.0 | 29.46 | 748.3 | 46 | 7.8 | ..... | SSW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Raining..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.45 | 748.0 | 54.0 | 12.2 | ..... | SSW | 19 | 8.5 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | Squally..... | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.62 | 752.3 | 50.7 | 10.4 | ..... | SSE | 17 | 7.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.64 | 752.8 | 47.7 | 8.7 | ..... | S | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling..... | Thomas Mackereth. |
| Bradford, Yorkshire | 29.27 | 743.4 | 29.67 | 753.6 | 50.7 | 10.4 | ..... | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast ..... | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.92 | 760.0 | 29.86 | 758.4 | 83 | 28.3 | ..... | NE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.76 | 755.9 | 51.0 | 10.6 | ..... | SSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. Todd. [C. |
| Cardington | ..... | ..... | 29.75 | 755.6 | 52.4 | 11.3 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John McLare. |
| Chatham, School M. E. | 29.70 | 754.4 | 29.83 | 757.7 | 50.1 | 10.1 | ..... | SW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.27 | 718.0 | 29.76 | 755.9 | 42.0 | 5.6 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Rain and fog | Alexander Watt. |
| Donaghadee | 29.44 | 747.8 | 29.48 | 748.8 | 51 | 10 6 | ..... | SSW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.80 | 756.9 | 29.83 | 757.7 | 47 | 8.3 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy ..... | J. Costello. |
| Falmouth, Observatory | 29.48 | 748.8 | 29.71 | 754.6 | 50.4 | 10.2 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | The Staff. |
| Fort Napier, (Natal) | 27.51 | 698.7 | 29.82 | 757.4 | 78.0 | 25.6 | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.66 | 753.4 | 29.90 | 759.4 | 87 | 30.6 | ..... | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's college | ..... | ..... | 29.39 | 746.5 | 52 | 11.1 | ..... | SW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 29.97 | 761.2 | 30.03 | 762.8 | 62.2 | 16.8 | ..... | W | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.26 | 743.2 | 29.47 | 748.5 | 49.4 | 9.7 | ..... | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling..... | D. G. Maclean. [C. |
| Great Yarmouth | 29.80 | 756.9 | 29.80 | 756.9 | 44 | 6.7 | ..... | S | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | Foggy ..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.62 | 752.3 | 29.80 | 756.9 | 50.8 | 10.4 | ..... | SSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The staff, for G.B. Airy. |
| Guernsey | 29.58 | 751.3 | 29.81 | 757.2 | 50 | 10.0 | ..... | SSW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S.E.Hoskins, F.R.S.. |
| Helston | 29.72 | 754.9 | 29.81 | 757.2 | 51 | 10.6 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.5 | 13. | Raining ..... | M. P. Moyle. |
| Holyhead | 29.51 | 749.5 | 29.56 | 750.8 | 48 | 8.9 | ..... | SSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | John Tilston. |
| Jersey | 29.56 | 750.8 | 29.86 | 758.4 | 50.5 | 10.3 | ..... | S | ..... | ..... | 3 | ..... | 9ck | ..... | ..... | ..... | ..... | Gloomy..... | J. Fisher. |
| Kew, Observatory | 29.76 | 755.9 | 29.80 | 756.9 | 51.0 | 10.6 | ..... | SW | 16 | 7.2 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Threatening | The Meteorological Of. |
| Leicester, Museum | 29.44 | 747.8 | 29.70 | 754.4 | 49.4 | 9.7 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.90 | 759.4 | 29.98 | 761.5 | 62 | 16.7 | ..... | NW | ..... | ..... | 2 | ..... | 4ks | ..... | ..... | ..... | ..... | D. clouds..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.32 | 744.7 | 29.42 | 747.2 | 52 | 11.1 | ..... | SW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.00 | 762.0 | 73.2 | 22.8 | ..... | SW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.52 | 749.8 | 29.70 | 754.4 | 53.6 | 12.0 | ..... | SSW | ..... | ..... | 3 | ..... | 10kd | ..... | S | 0.011 | 0.28 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.17 | 740.9 | 29.69 | 754.1 | 51.0 | 10.6 | ..... | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.75 | 755.6 | 50 | 10.0 | ..... | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. E. Bellamy. |
| Plymouth | 29.64 | 752.8 | 29.72 | 754.9 | 48.5 | 9.2 | ..... | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling..... | John Merrifield. |
| Roche's Point | 29.52 | 749.8 | 29.60 | 751.8 | 50 | 10.0 | ..... | SW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded.. | Wm. Kennedy, |
| Saint Ann's Head | 29.50 | 749.3 | 29.67 | 753.6 | 46 | 7.8 | ..... | SSW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 49.5 | 9.7 | ..... | S | 27 | 12.1 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Rev C.Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.69 | 754.1 | 29.76 | 755.9 | 60.6 | 15.9 | ..... | S | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | W. H. Lyne. |
| Sheffield | 29.40 | 746.7 | 29.68 | 753.9 | 53.8 | 12.1 | ..... | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.03 | 0.8 | Overcast ..... | W. F. Cooper. |
| Silloth Rectory | 29.49 | 749.0 | 29.52 | 749.8 | 51.0 | 10.6 | 81 | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.086 | 2.18 | Raining..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.24 | 742.7 | 29.65 | 753.1 | 48.2 | 9.0 | ..... | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling..... | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.60 | 751.8 | 29.81 | 757.2 | 50.9 | 10.5 | ..... | SW | ..... | ..... | 2–3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | C. H. Griffith, F. M., S. |
| Thurso | 29.34 | 745.2 | 29.40 | 746.7 | 53 | 11.7 | ..... | S | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | John Trotter. |
| Truro, Royal Institution | 29.70 | 754.4 | 29.75 | 755.6 | 53 | 11.7 | ..... | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | W. Newcombe. |
| Valencia, Observatory | 29.46 | 748.3 | 29.49 | 749.0 | 51.9 | 11.1 | ..... | SSW | 42 | 18.8 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | The Meteorological Of. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.95 | 760.7 | 29.99 | 761.7 | 68 | 20.0 | 68 | NW | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.07 | 763.8 | 62.0 | 16.7 | 83 | NW | ..... | ..... | 2 | ..... | 10k | ..... | ..... | 0 | 0 | Cloudy..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.54 | 750.3 | 50.1 | 10.1 | ..... | SW | ..... | ..... | 4 | ..... | 10k | ..... | ..... | 0 | 0 | Cloudy..... | Andrew Gibb. |
| Mauritius, Observatory | 29.91 | 759.7 | 30.10 | 764.6 | 77.0 | 25.0 | 78 | ESE | 18.0 | 8.0 | ..... | 1 | 4 | ..... | ESE | 0 | 0 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 30.06 | 763.5 | 30.15 | 765.8 | 67.0 | 19.4 | 52 | NE | 7 | 3.1 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| MonachLt-house, (Hebrides) | ..... | ..... | 29.23 | 742.4 | 47 | 8.3 | ..... | SSW | ..... | ..... | 6 | 5 | 5 | SW | ..... | 0.1 | 2. | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.39 | 746.5 | 43 | 6.1 | ..... | SW | ..... | ..... | 4 | 4 | 6 | SW | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

| BRITISH MARINE SERIES. VESSELS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 44′, E. 29° 31′ | ..... | ..... | 29.80‡ | 756.9‡ | 65.2 | 18.4 | ..... | WSW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | Showery..... | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda, N. 43° 46′, W. 9° 02′ | ..... | ..... | 29.99‡ | 761.7‡ | 60.8 | 16.0 | ..... | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. B. Boyes. |
| Barque Belle-Isle, N. 45° 19′, W. 23° 11′ | ..... | ..... | 29.80‡ | 756.9‡ | 58 | 14.4 | ..... | SSW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 6 | WNW | Overcast..... | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra, N. °48 26′ W. 25° 10′ | ..... | ..... | 29.69‡ | 754.1‡ | 54 | 12.2 | ..... | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 7 | Confused | Threatening | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina, N. 13° 05′, W. 55° 35′ | ..... | ..... | 29.98‡ | 761.5‡ | 79 | 26.1 | ..... | ENE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 2 | Confused. | Showery..... | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.24 | 666.5 | 29.96 | 761.0 | 67.6 | 19.8 | ..... | SE | ..... | ..... | 2 | ..... | 10s | ..... | E | 0 | 0 | ..... | Federico Maison |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.6 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.85 | 758.3 | 29.90 | 759.5 | 37.8 | 3.2 | 90 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 29.83 | 757.7 | 29.85 | 758.2 | 37.6 | 3.1 | 90 | SW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Foggy | ..... |
| Godthaab, (Greenland) | 29.40 | 746.7 | 29.44 | 747.8 | 20.7 | — 6.3 | 84 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 29.24 | 742.8 | 29.28 | 743.7 | 43.9 | 6.6 | 98 | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | ..... |
| Vestervig | 29.59 | 751.5 | 29.76 | 755.8 | 37.9 | 3.3 | 98 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.43 | 747.4 | 29.98 | 761.4 | 51.1 | 10.6 | 95 | SW | ..... | ..... | 1 | ..... | 8 | ..... | S | 0 | 0 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 29.85 | 758.1 | 29.96 | 760.9 | 57.2 | 14.0 | 80 | SW | ..... | ..... | 3 | ..... | 2 | ..... | NE | 0.118 | 3.0 | Slightly cl'dy | Bonvallet, Director. |
| Avignon, Normal School | 29.81 | 757.1 | 29.89 | 759.1 | 61.5 | 16.4 | 47 | N | ..... | ..... | 3 | ..... | ..... | E | N | 0 | 0 | ..... | M. Giraud, Directo. |
| Bar-sur-Seine | 29.41 | 746.9 | 29.96 | 761.0 | 53.4 | 11.9 | 47 | NE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.65 | 753.2 | 29.92 | 759.9 | 55.9 | 13.3 | 67 | SW | ..... | ..... | 2 | ..... | 8 | ..... | WSW | 0 | 0 | Very cloudy | Frere Eugene Marie, Dir |
| Besançon, Normal School | 29.08 | 738.5 | 29.97 | 761.3 | 52.7 | 11.5 | 45 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.15 | 740.5 | 30.06 | 763.6 | 54.9 | 12.7 | 45 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Marlot, Director. |
| Bourges, Normal School | 29.39 | 746.5 | 29.94 | 760.4 | 56.1 | 13.4 | 59 | S | ..... | ..... | 1 | ..... | cn | SW | SW | 0 | 0 | ..... | A. Waquet, Director |
| Brest, Naval Observatory | 29.54 | 750.2 | 29.78 | 756.4 | 54.3 | 11.4 | 86 | SW | ..... | ..... | 3 | ..... | 10 | ..... | SW | 0.010 | 0.25 | Raining | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.60 | 751.8 | 30.01 | 762.3 | 58.3 | 14.6 | 55 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | September, Director. |
| Caen, Normal School | 29.78 | 756.4 | 29.81 | 757.2 | 53.6 | 12 | 69 | WSW | ..... | ..... | 1 | ..... | 8 | ..... | WSW | 0.110 | 2.8 | Very cloudy | M. Lair, Director. |
| Chartres, Normal School | 29.34 | 745.3 | 29.91 | 759.7 | 53.6 | 12 | 95 | SSE | ..... | ..... | 1 | ..... | 5 | ..... | E | 0 | 0 | Cloudy | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.67 | 753.6 | 29.99 | 761.7 | 55.8 | 13.2 | 47 | SW | ..... | ..... | 2 | ..... | 5 | SW | SW | ..... | ..... | Cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.61 | 726.8 | 29.97 | 761.2 | 54.1 | 12.3 | 50 | NE | ..... | ..... | 1 | ..... | 5 | ..... | N | 0 | 0 | ..... | Alluard, Director. |
| Commercy, Normal School | 29.09 | 738.9 | 29.96 | 760.9 | 50.5 | 10.3 | 68 | NNW | ..... | ..... | 1 | ..... | 5ck | ..... | NNW | 0 | 0 | Cloudy | Dr. Coulet, Director. |
| Commune de Grêasque* | 28.75 | 730.3 | 29.89 | 759.3 | 58.8 | 14.9 | 70 | SW | ..... | ..... | 2 | ..... | 2 | ..... | SW | 0 | 0 | ¼ covered | M. Kina, Director. |
| Grenoble, Normal School | 29.19 | 741.4 | 29.96 | 761.0 | 53.2 | 11.8 | 57 | NW | ..... | ..... | 1 | ..... | 8kn | ..... | E | 0 | 0 | Very cloudy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.78 | 756.4 | 30.00 | 762.0 | 54.7 | 12.6 | 76 | SW | ..... | ..... | 1 | ..... | 8 | ..... | SW | 0 | 0 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.67 | 753.6 | 29.98 | 761.5 | 50.2 | 10.1 | 86 | S | ..... | ..... | 3 | ..... | 8 | ..... | W | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.03 | 737.4 | 29.96 | 761.0 | 54.1 | 12.3 | 31 | SSW | ..... | ..... | 2 | 5ç | ..... | ..... | NNE | 0 | 0 | Cloudy | Baudry, Director. |
| Lorient, Naval Observatory | 29.80 | 756.9 | 29.90 | 759.4 | 52.9 | 11.6 | 93 | SSW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0.039 | 1.00 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director. |
| Marseilles, Observatory | ..... | ..... | 29.82 | 757.5 | 62.6 | 17.0 | 33 | WNW | ..... | ..... | 2-3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |
| Mirecourt, Normal School | 28.90 | 734.0 | 29.96 | 761.0 | 50.0 | 10 | 62 | NW | ..... | ..... | 1 | ..... | 5 | ..... | SE | 0 | 0 | Cloudy | M. Barbier, Director. |
| Nismes, Normal School | 29.69 | 754.0 | 29.89 | 759.2 | 61.5 | 16.4 | 40 | N | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Boyer, Director. |
| Privas, Normal School | 28.87 | 733.2 | 30.00 | 762.1 | 57.2 | 14 | 58 | N | ..... | ..... | 1 | ..... | ..... | N | N | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 25.06 | 636.4 | ..... | ..... | 31.1 | — 0.5 | 100 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Foggy | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.99 | 761.7 | 30.02 | 762.5 | 54.7 | 12.6 | 66 | SW | ..... | ..... | 1 | ..... | 8 | WSW | WSW | 0.04 | 1. | ¾ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.81 | 757.1 | 29.89 | 759.3 | 53.1 | 11.7 | 79 | WNW | ..... | ..... | 2 | ..... | 8 | ..... | S | 0.039 | 1.0 | Very cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.82 | 757.3 | 29.85 | 758.1 | 54.0 | 12.2 | 72 | SSW | ..... | ..... | 3 | ..... | 8 | SSW | SSW | 0.031 | 0.80 | Very cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.79 | 756.6 | 29.95 | 760.8 | 55.9 | 13.3 | 53 | SW | ..... | ..... | 3 | ..... | 10 | ..... | W; WNW | 0 | 0 | Covered | E. Renou, Director. |
| Tarbes, Normal School | 28.91 | 734.4 | 29.99 | 761.8 | 53.6 | 12 | 65 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | T. Huguet, Director. |
| Toulouse, Observatory | 29.32 | 744.8 | 30.05 | 763.2 | 53.4 | 11.9 | 62 | WNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | M. Mercadier Julier. |
| Versailles Observatory | 29.45 | 748.1 | 29.94 | 760.6 | 53.2 | 11.8 | 56 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | De A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.22 | 742.2 | 29.93 | 760.3 | 51.8 | 11 | 75 | N | ..... | ..... | 1 | ..... | 1 | ..... | NW | 0 | 0 | Clear | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.92 | 759.9 | 29.94 | 760.6 | 77.0 | 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.39 | 10. | ..... | L'Abbé Marcl ési. |
| Lyons Obs'y, (Park Station) | 29.34 | 745.3 | 29.96 | 760.9 | 55.8 | 13.2 | 35 | NW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | Mr. Jays. |
| Mont-Louis | 24.51 | 622.5 | 29.82 | 757.5 | 42.8 | 6.0 | 49 | SW | 18.6 | 8.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.87 | 758.6 | 61.2 | 16.2 | 73 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0.063 | 1.6 | Clear | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.67 | 753.5 | ..... | ..... | 55.2 | 12.9 | 56 | SW | ..... | ..... | 3 | ..... | 8 | ..... | SW | 0 | 0 | ..... | Marié Davy, Director. |
| Perpignan | 29.84 | 758.0 | 29.95 | 760.7 | 59.5 | 15.3 | 30 | NE | 13.0 | 5.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.39 | 568.7 | ..... | ..... | 30.7 | — 0.7 | ..... | N | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | Clear | Gen'l de Nansouty. |
| Tours | 29.78 | 756.5 | 29.98 | 761.5 | 57.2 | 14.0 | 45 | NNW | ..... | ..... | 1 | ..... | 5 | ..... | N | 0 | 0 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 29.80 | 757.0 | 29.83 | 757.6 | 55.8 | 13.2 | 87 | SE | 9.4 | 4.2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grêasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. | | Barometer. Reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. Direction. | Wind. Velocity. | | Wind. Force. | Clouds. Amount. | | Clouds. Direction. | | Rain-fall or melted snow in the past 24 hours. | | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | Up'er | Low'r | Upper | Lower. | | | | |
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0–10 | 0–10 | 0–10 | From— | From— | Inches. | Millimeters. | | |
| Bamberg | 29.12 | 739.6 | 29.96 | 761.0 | 51.1 | 10.6 | 50 | SE | | | 4 | | 5 | W | | 0.039 | 1.0 | Raining | Prof. Dr. Hoh. |
| Berlin | 29.79 | 756.7 | 29.96 | 761.1 | 47.3 | 8.5 | 57 | S | | | 1 | | 8 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.41 | 747.0 | 29.94 | 760.4 | 43.3 | 6.3 | 72 | WNW | | | 3 | | 10 | | | 0.002 | 0.04 | | Royal University Obs'y |
| Carlsruhe | 29.52 | 749.9 | 29.95 | 760.8 | 53.2 | 11.8 | 44 | W | | | 1 | | 1 | NW | | 0 | 0 | | Albert Senx. |
| Cassel | 29.33 | 745.0 | 29.94 | 760.4 | 51.1 | 10.6 | 47 | SE | | | 3 | | 5 | SW | | 0.018 | 0.46 | Raining | Dr. H. Möhl. |
| Crefeld | 29.76 | 755.9 | 29.92 | 760.0 | 55.0 | 12.8 | 53 | SW | | | 2 | | 8 | | | 0.04 | 1. | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.60 | 751.7 | 29.96 | 761.0 | 52.7 | 11.5 | | S | | | 1 | | 3 | | | 0 | 0 | | Physical Society. |
| Freienwalde on the Oder | | | | | | | | | | | | | | | | | | | Assmann., M. D. |
| Friedrichshafen | 28.50 | 723.8 | 29.94 | 760.6 | 48.9 | 9.4 | 52 | SSW | | | 1 | | 5 | WSW | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.86 | 758.5 | 29.93 | 760.3 | 48.9 | 9.4 | 56 | SW | | | 2 | | 9k | | | 0.004 | 0.1 | Pleasant | Captain F. Hegemann. |
| Kiel | 29.88 | 759.0 | 29.90 | 759.4 | 47.7 | 8.7 | 63 | SW | | | 2 | | 5 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.90 | 759.4 | 29.98 | 761.5 | 49.1 | 9.5 | 59 | SE | | | 4 | | 2 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 29.89 | 759.2 | 42.4 | 5.8 | | NW | | | 2 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.53 | 750.0 | 29.95 | 760.8 | 50.4 | 10.2 | 48 | SW | | | 4 | | 8 | SW | | 0.039 | 1.0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.96 | 761.1 | 30.01 | 762.3 | 42.6 | 5.9 | 65 | SSE | | | 3 | | 7s | | | | | | Skalweit. |
| Neufahrwasser | 29.96 | 761.0 | 29.98 | 761.4 | 45.9 | 7.7 | 67 | SSW | | | 2 | | 10 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.64 | 752.9 | 29.94 | 760.4 | 45.7 | 7.6 | 67 | NW | | | 2 | | 10 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.43 | 747.5 | 29.98 | 761.5 | 53.6 | 12.0 | 41 | Calm | | | 0 | | 1 | | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 28.98 | 736.2 | 29.93 | 760.1 | 52.7 | 11.5 | 44 | NE | | | 1 | | 2 | W | | 0 | 0 | Foggy | Prof. Schoder. |
| Treves, (Trier) | 29.44 | 747.8 | 29.96 | 761.0 | 56.3 | 13.5 | 38 | SW | | | 6 | | 10 | | | 0 | 0 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.44 | 722.4 | 29.96 | 761.0 | 48.2 | 9.0 | 45 | W | 2 | 1 | | 7ck | | N | | 0 | 0 | Foggy | Dr. Van Bebber. |
| Wustrow, Naval School | 29.91 | 759.6 | 29.93 | 760.2 | 36.1 | 2.3 | 89 | W | | | 3 | | Fog | S | | 0 | 0 | Foggy | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.47 | 748.6 | 29.86 | 758.5 | 67.3 | 19.6 | | S | | | 2.0 | | | | | | | Clear | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.79 | 756.6 | 29.84 | 757.9 | 83.0 | 28.3 | 46 | SW | 12 | 5.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.24 | 742.6 | 29.69 | 754.2 | 98.6 | 37.0 | 13 | W | 7.4 | 3.3 | | | 8 | SW | | 0 | 0 | D. clouds | |
| Bombay | 29.73 | 755.0 | 29.76 | 755.9 | 83.0 | 28.3 | 75 | WNW | 8 | 3.6 | | | 3 | WSW | | 0 | 0 | D. clouds | |
| Poona | | | | | | | | | | | | | | | | | | | |
| Lahore | 28.93 | 734.8 | 29.65 | 753.0 | 95.2 | 35.1 | 26 | Calm | 1.5 | 0.7 | | | 0 | | | 0 | 0 | | |
| Belgaum | 27.28 | 693.0 | 29.78 | 756.5 | 82.6 | 28.1 | 65 | SW | 22 | 9.8 | | | 1 | E | E | 0 | 0 | | |
| Roorkee | 28.75 | 730.1 | 29.61 | 752.1 | 96.9 | 36.1 | 11 | NW | 2.3 | 1.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Agra | 29.12 | 739.7 | 29.66 | 753.4 | 101.6 | 38.7 | 15 | NW | | | | | | | | 0 | 0 | | |
| Nagpur | 28.67 | 728.3 | 29.67 | 753.6 | 102.2 | 39.0 | 5 | Calm | 3.4 | 1.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.30 | 744.2 | 29.66 | 753.4 | 97.6 | 36.4 | 8 | NNW | 1.0 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.36 | 745.6 | 29.66 | 753.3 | 96.2 | 35.7 | 26 | Calm | 2.0 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.48 | 748.7 | 29.65 | 753.2 | 95.8 | 35.4 | 22 | NW | 0.5 | 0.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.71 | 703.7 | 29.65 | 753.1 | 94.0 | 34.4 | 18 | NW | 17.2 | 7.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.66 | 753.2 | 29.73 | 755.2 | 93.1 | 33.9 | 40 | S | 3.8 | 1.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.68 | 753.8 | 29.70 | 754.3 | 89.9 | 33.2 | 34 | SSW | 4.0 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.35 | 746.1 | 29.72 | 755.0 | 90.9 | 32.7 | 24 | Calm | 2.7 | 1.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.63 | 752.6 | 29.72 | 754.9 | 85.3 | 29.6 | 82 | SSW | 4.3 | 1.9 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.38 | 746.1 | 29.71 | 754.6 | 81.3 | 27.4 | 70 | ENE | 2.1 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.41 | 721.6 | 29.73 | 755.1 | 97.1 | 36.2 | 20 | Calm | 2.3 | 1.0 | | | 0 | | | 0 | 0 | Blue sky | |
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Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.41 | 747.0 | 29.82 | 757.5 | 58.8 | 14.9 | 49 | SW | 3.1 | 1.4 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.28 | 743.7 | 29.80 | 756.9 | 59.2 | 15.1 | 46 | WSW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.70 | 754.4 | 29.81 | 757.2 | 59.7 | 15.4 | 47 | SSE | 2.5 | 1.1 | ..... | ..... | 2 | ESE | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.89 | 733.7 | 29.79 | 756.7 | 54.7 | 12.6 | 45 | SW | 1.8 | 0.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.63 | 752.5 | 29.82 | 757.4 | 59.4 | 15.2 | 59 | SW | 4.9 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0.028 | 0.7 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.90 | 708.7 | 29.82 | 757.3 | 53.2 | 11.8 | 44 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0.165 | 4.2 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.76 | 755 8 | 29.81 | 757.1 | 55.4 | 13.0 | 77 | NW | 9.8 | 4.4 | ..... | ..... | 10 | SW | ..... | 0.366 | 9.3 | ..... | Prof. Luigi Guidi. |
| Florence | 29.55 | 750.6 | 29.81 | 757.1 | 60.8 | 16.0 | 38 | NE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.220 | 5.6 | ..... | Cav. F. Meucci |
| Leghorn | 29.71 | 754.5 | 29.79 | 756.6 | 58.5 | 14.7 | 71 | NW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 29.63 | 752.5 | 29.80 | 757.0 | 53.2 | 11.8 | 73 | N | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.039 | 1.0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.52 | 749.7 | 29.77 | 756.1 | 55.6 | 13.1 | 77 | WNW | 15.4 | 6.9 | ..... | ..... | 7 | NW | ..... | 0.020 | 0.5 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.91 | 734.2 | 29.79 | 756.6 | 55.4 | 13.0 | 77 | NW | 2.5 | 1.1 | ..... | ..... | 10 | ..... | ..... | 0.374 | 9.5 | ..... | Prof. D. Conti. |
| Cagliari | 29.62 | 752.4 | 29.82 | 757.3 | 58.3 | 14.6 | 64 | NW | ..... | ..... | 4 | ..... | 5 | NW | ..... | 0.984 | 25.0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.56 | 750.8 | 29.81 | 757.2 | 50.7 | 10.4 | 88 | N | 4.9 | 2.2 | ..... | ..... | 10 | ..... | ..... | 0.134 | 3.4 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.77 | 756.2 | 29.84 | 758.0 | 61.9 | 16.6 | 43 | WNW | 1.3 | 0.6 | ..... | ..... | 8 | S | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.24 | 742.8 | 29.80 | 756.9 | 55.4 | 13.0 | 66 | SSW | 3.1 | 1.4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.04 | 763.0 | 30.06 | 763.5 | 52.2 | 11.2 | 88 | N | 1.6 | 0.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.84 | 757.9 | 30.05 | 763.3 | 58.4 | 14.7 | 79 | ESE | 6.6 | 3.0 | ..... | ..... | 1cs | ..... | ..... | 0 | 0 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.99 | 761.7 | 30.05 | 763.3 | 51.3 | 10.7 | 89 | S | 4.9 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.10 | 637.6 | 30.23 | 767.9 | 48.2 | 9.0 | 41 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Fine | Prof. L. Perez. |
| Leon | 24.48 | 622.0 | 30.15 | 765.9 | 61.3 | 16.3 | 80 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.16 | 588.2 | 30.23 | 767.7 | 51.4 | 10.8 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 57.7 | 14.3 | 60 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | M. V. de Leon, M. E. |
| Tlacotalpam | 30.06 | 763.5 | 30.07 | 763.8 | 73.6 | 23.1 | 89 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. M. Chàzaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.49 | 596.5 | 30.25 | 768.3 | 45.5 | 7.5 | 70 | N | 1.3 | 0.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. |
| Colima | 28.39 | 721.2 | 30.04 | 763.0 | 75.2 | 24 0 | 46 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft., San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coopera..on of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.89 | 759.3 | 29.89 | 759.3 | 49.6 | 9.8 | ..... | W | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.83 | 737.6 | 29.88 | 759.0 | 48.9 | 9.4 | ..... | SW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.87 | 758.6 | 29.87 | 758.6 | 44.1 | 6.7 | ..... | S | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.012 | 0.3 | ..... | |
| Hellevoetsluis | 29.87 | 758.8 | 29.87 | 758.8 | 54.5 | 12.5 | 70 | SW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.85 | 758.2 | 29.90 | 759.4 | 52.3 | 11.3 | 63 | WSW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.016 | 0.4 | Very cloudy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.63 | 752.6 | 29.69 | 754.0 | 43.2 | 6.2 | 91 | SSE | 17.2 | 7.7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.50 | 749.3 | 29.54 | 750.3 | 39.9 | 4.4 | 82 | SW | 18 | 8 | ..... | ..... | 9 | ..... | ..... | 0.056 | 1.4 | ..... | |
| Christiania | 29.63 | 752.7 | 29.78 | 756.5 | 36.5 | 2.5 | 91 | SW | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.193 | 4.9 | Foggy | |
| Tromsö | 29.17 | 741.0 | 29.22 | 742.1 | 38.8 | 3.8 | 64 | W | 25 | 11 | ..... | ..... | 10 | ..... | ..... | 0.075 | 1.9 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.10 | 764.5 | 30.29 | 769.4 | 62.2 | 16.8 | 88 | WNW | 8.1 | 3.6 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.06 | 738.1 | 30.08 | 764.1 | 62.1 | 16.7 | 46 | SW | 3.1 | 1.4 | ..... | ..... | 4 | WNW | ..... | 0 | 0 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.11 | 764.9 | 30.20 | 767.1 | 66.6 | 19.2 | 54 | SW | 6.3 | 2.8 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.78 | 756.3 | 30.14 | 765.5 | 58.3 | 14.6 | 63 | SSE | 3.8 | 1.7 | ..... | ..... | 9 | WSW | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.27 | 768.8 | 30.34 | 770.6 | 66.2 | 19.0 | 75 | WNW | 9.4 | 4.2 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd.t. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| Duque da Terceira, Santiago, Cape Verd I. | ..... | ..... | 30.03 | 762.8 | 72.5 | 22.5 | ..... | NE | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 3 | ..... | D. clouds | C.C.da Fonseca Ferreira, Comd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, St. Thomas, Gulf of Guinea | ..... | ..... | 29.85 | 758.3 | 83 8 | 28 8 | ..... | SSE | ..... | ..... | 3 | ..... | 8 | ..... | SE | 2 | SE | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt S. C. da Silva Costa. Arcos Island, Senegambia | ..... | ..... | 29.95 | 760.8 | 75.2 | 24.0 | ..... | SW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | A. Ferreira, 2d Lt. |
| Sá da Bandeira. Ambrizette, S.7° 13', E. 12°52' | ..... | ..... | 29.74 | 755.4 | 85.1 | 29.5 | ..... | SSW | ..... | ..... | 2 | ..... | 5 | ..... | E | 2 | SW | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 29.82 | 757.5 | 75.4 | 24.1 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | SW | 1 | SW | Raining | J. M. F. Guimarães, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.50 | 749.4 | 29.93 | 760.2 | 47.8 | 8.8 | 50 | ESE | 11 | 5 | ..... | ..... | 6k;ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.71 | 754.5 | 30.14 | 765.5 | 40.6 | 4.8 | 55 | SE | 11 | 5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds | Astronomical Obs. |
| Dorpat | 29.92 | 760.0 | 30.17 | 766.4 | 39.4 | 4.1 | 69 | S | 9 | 4 | ..... | ..... | 8k | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.15 | 765.8 | 30.17 | 766.2 | 41.5 | 5.3 | 63 | SSE | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.44 | 747.7 | 30.09 | 764.3 | 43.0 | 6.1 | 69 | E | 11 | 5 | ..... | ..... | 7k;ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.89 | 759.2 | 29.96 | 761.0 | 41.2 | 5.1 | 86 | E | 31 | 14 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Kurdakof. |
| Kertch | 29.93 | 760.1 | 29.94 | 760.6 | 46.8 | 8.2 | 82 | E | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Lagorio. |
| Moscow | 29.87 | 758.7 | 30.45 | 773.4 | 35.4 | 1.9 | 73 | S | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.93 | 760.2 | 30.14 | 765.5 | 42.3 | 5.7 | 57 | ENE | 18 | 8 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.96 | 761.0 | 29.98 | 761.5 | 45.3 | 7.4 | 61 | SSW | 9 | 4 | ..... | ..... | 3ks | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.61 | 726.7 | 30.05 | 763.2 | 50.4 | 10.2 | 75 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.28 | 769.0 | 30.19 | 766.9 | 43.2 | 6.2 | 56 | ENE | 18 | 8 | ..... | ..... | 10s;n | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.91 | 759.7 | 30.41 | 772.5 | 28.6 | — 1.9 | 66 | S | 4 | 2 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 30.02 | 762.4 | 30.30 | 769.6 | 35.4 | 1.9 | 98 | SW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.14 | 740.1 | 30.15 | 765.8 | 28.4 | — 2.0 | 88 | E | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.90 | 759.5 | 30.13 | 765.4 | 56.3 | 13.5 | 42 | NE | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.54 | 724.9 | 30.11 | 764.7 | 59.7 | 15.4 | 66 | NW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Teich, A. M. |
| Barnaul | 29.90 | 759.5 | 30.45 | 773.4 | 15.8 | — 9.3 | 44 | N | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.28 | 769.2 | 30.60 | 777.3 | 15.1 | — 9.4 | 42 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking, (China) | 29.68 | 753.9 | 29.82 | 757.5 | 51.3 | 10.7 | 89 | Calm | 0 | 0 | ..... | ..... | 9n | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.80 | 757.0 | 29.90 | 759.5 | 27.7 | — 2.4 | 79 | N | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ?m., or 2,165.4 ? ft. *N. 53° 47', E. 48° 34'.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.84 | 757.8 | 29.94 | 760.5 | 59.0 | 15 | 45 | SSW | 3.9 | 1.75 | ..... | ..... | 1c | ..... | ..... | 0 | 0 | Clear | Antonio Rave, Directon. |
| Bilbao, Met. Obs'y | 29.95 | 760.6 | 30.01 | 762.2 | 65.7 | 18.7 | 63 | NW | 2.2 | 0.98 | ..... | 3 | 4 | SW | ..... | 0 | 0 | Cloudy | Prof. Manuel de Navera |
| Burgos, Met. Obs'y | 27.03 | 686.5 | ..... | ..... | 57.2 | 14.0 | 52 | SW | 4.2 | 1.88 | ..... | ..... | 4 | ..... | ..... | 0.020 | 0.5 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.77 | 705.3 | ..... | ..... | 61.3 | 16.3 | 55 | S | 9.7 | 4.34 | ..... | 0 | 3 | ..... | ..... | 0 | 0 | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 29.85 | 758.1 | 29.99 | 761.8 | 75.2 | 24.0 | 49 | SE | 3 0 | 1.33 | ..... | 3 | 5 | SE | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.12 | 739.5 | 30.02 | 762.6 | 50 5 | 10.3 | 95 | SW | 3.1 | 1.4 | ..... | ..... | 10 | ..... | ..... | 0.051 | 1.3 | Misty | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.03 | 762 8 | 30.10 | 764 5 | 70.9 | 21.6 | 62 | N | 6.3 | 2.8 | ..... | 0 | 3k | ..... | N | 0 | 0 | Fair | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.83 | 757.8 | 29.88 | 759.1 | 84.7 | 29.1 | 65 | ESE | 5.1 | 2.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.00 | 761.9 | 30.10 | 764.4 | 59.7 | 15.4 | 64 | WNW | 9.4 | 4.2 | ..... | 0 | 6 | ..... | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W I | 29.93 | 760.3 | 30.02 | 762.6 | 78.8 | 26.0 | 84 | SE | 2.2 | 1.00 | ..... | 2s | 2k | E | E | 0 | 0 | Clear | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.52 | 749.8 | 29.56 | 750.8 | 35.6 | 2.0 | ..... | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.079 | 2.0 | ..... | |
| Umea | 29.63 | 752.7 | 29.69 | 754.0 | 38.8 | 3.8 | 83 | SW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.70 | 754.3 | 29.75 | 755.6 | 39.2 | 4.0 | 80 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.71 | 754.5 | 29.88 | 759.0 | 41.0 | 5 0 | 84 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.81 | 757.2 | 29.87 | 758.7 | 42.1 | 5.6 | 79 | SSE | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.76 | 755.9 | 29.84 | 757.8 | 42.4 | 5.8 | 77 | S | 13.9 | 6.2 | ..... | ..... | 10 | ..... | SW | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.50 | 724.0 | 29.04 | 760.4 | 51.1 | 10.6 | 87 | NNE | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | Clear. ..... | The Observatory. |
| Zurich | 28.31 | 719.2 | 29.07 | 761.2 | 51.3 | 10.7 | 44 | NE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy ..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —0.2 mm.; Thermometer, +0.1 Cent.; Relative Humidity, —21 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.82 | 757.3 | 65.5 | 18.6 | 58 | SW | 4 | 2.0 | ..... | ..... | 4 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.39 | 772.0 | 78.8 | 26.0 | ..... | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.80 | 756.9 | 56.3 | 13.5 | ..... | SW | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0.010 | 0.26 | Covered ..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.84 | 757.9 | 29.96 | 761.0 | 74.7 | 23.7 | 65 | NE | ..... | ..... | '2 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Prof. C.V. A. Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.68 | 753.9 | 29.75 | 755.6 | 26.7 | — 2.9 | ..... | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.69 | 754.1 | 30.02 | 762.5 | 20 | — 6.7 | ..... | W | 1 | 0.4 | ..... | ..... | 10s | ..... | W | 0.01 | 0.3 | Cloudy..... | W. R. Bigg. |
| *Chatham, N B | 29.67 | 753.6 | 29.73 | 755.1 | 18 | — 7.8 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.22 | 5.6 | Clear ..... | G. A. Blair. |
| Charlottetown, P. E. Island. | 29.69 | 754.1 | 29.74 | 755.4 | 28 | — 2.2 | 80 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.425 | 10.90 | Clear..... | H. J. Cundall, C. E |
| Cornwall, Ontario | 29.72 | 754.9 | 29.92 | 760.0 | 21.0 | — 6.1 | 80 | W | ..... | ..... | 1 | ..... | 9s | ..... | ..... | 0 | 0 | Cloudy..... | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | 29.71 | 754.6 | 29.76 | 755.9 | 44.3 | 6.8 | 100 | Calm | 0 | 0 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Overcast..... | W. H. Bevis. |
| *Father Point, Quebec | 29.72 | 754.9 | 29.74 | 755.4 | 29 | — 1.7 | 87 | S | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0 | 0 | Threatening | J. McWilliams. |
| Fredericton, N. B | 29.70 | 754.4 | 29.77 | 756.1 | 18.3 | — 7.6 | 100 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear ..... | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.23 | 742.4 | 30.09 | 764.3 | 28 | — 2.2 | 77 | S | 8 | 3.6 | ..... | 2ck | 5ks | S | S | 0 | 0 | Fair ..... | James Stewart. |
| Granton, Ontario | 28.90 | 734.0 | 30.08 | 764.0 | 20 | — 6.7 | ..... | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | Inap. | Inap. | Snowing..... | James Grant |
| *Halifax, N. S | 29.68 | 753.6 | 29.77 | 756.1 | 32 | 0.0 | 92 | W | 8 | 1.3 | ..... | ..... | 10ks | ..... | W | 0.140 | 3.56 | Cloudy..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.70 | 754.4 | 30.10 | 764.5 | 21.7 | — 5.7 | 98 | SW | ..... | ..... | 1 | 10cs | 0 | SW | ..... | 0 | 0 | Cloudy..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.63 | 752.6 | 29.99 | 761.7 | 20 | — 6.7 | 75 | N | 6 | 2.7 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy ..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.69 | 754.1 | 29.78 | 756.3 | 32.7 | 0.4 | 93 | W | 8 | 3.6 | ..... | 4k | 0 | W | ..... | 0.40 | 10.2 | Fair ..... | C. H. Rigby. |
| Moose Factory, Ontario | 30.03 | 762.8 | 30.07 | 763.8 | 10.2 | —12.1 | 96 | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.05 | 1.3 | Snowy..... | J. R. Nason. |
| *Montreal, Quebec | 29.71 | 754.6 | 29.92 | 760 0 | 21 | — 6.1 | 74 | W | 10 | 4.5 | ..... | 8k | 2s | ..... | ..... | 0 | 0 | Cloudy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.33 | 745.0 | 30.08 | 764.0 | 15 | — 9.4 | 91 | NW | 4 | 1.8 | ..... | ..... | 10n | ..... | NW | 0.04 | 1.0 | Light snow.. | Rev. R. Mosley. |
| Peterboro, Ontario | 29.22 | 742.2 | 30.03 | 762.8 | 18.8 | — 7.3 | 75 | NW | ..... | ..... | 1 | ..... | 10k | ..... | ..... | 0 | 0 | Overcast..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.54 | 745.2 | 30.08 | 764.0 | 20 | — 6.7 | 85 | NW | 3 | 1.3 | ..... | ..... | 10n | ..... | ..... | 0.05 | 1.3 | Threatening | H. Morgan. |
| Port Hastings, N. S | 29.63 | 752.6 | 29.68 | 753.9 | 33.4 | 0.8 | ..... | W | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine..... | Peter Grant. |
| Port Stanley, Ontario | 29.39 | 746.5 | 30.08 | 764.0 | 22 | — 5.6 | 86 | NW | 3 | 1.3 | ..... | ..... | 10n | ..... | NW | 0.10 | 2.5 | Light snow. | M. Payne. |
| *Quebec, Quebec | 29.49 | 749.0 | 29.83 | 757.7 | 24 | — 4.4 | 93 | NW | ..... | ..... | 3 | ..... | 10n | ..... | Calm | 0 | 0 | Cloudy..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.53 | 750.0 | 30.02 | 762.5 | 17 | — 8.3 | 71 | NW | 6 | 2.7 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair ..... | W. H. McIntyre. |
| St. Andrews, N. B | 29.70 | 754.4 | 29.75 | 755.6 | 28 | — 2.2 | 70 | N? | ..... | ..... | 0? | ..... | 10n | ..... | ..... | 0.15 | 3.8 | Cloudy..... | Dr. Gove. |
| St. John, N. B | 29.59 | 751.6 | 29.70 | 754.4 | 26 | — 3.3 | 87 | SW | 1 | 0.4 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Overcast..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.33 | 745.0 | 30.09 | 764.3 | 22 | — 5.6 | 90 | N | 8 | 3.6 | ..... | 5cs | 5ks | ..... | ..... | 0.12 | 3.4 | Light snow.. | K. Stewart. |
| Stayner, Ontario | 29.22 | 742.2 | 30.05 | 763.3 | 18 | — 7.8 | 90 | N | 6 | 2.7 | ..... | ..... | 10n | ..... | N | 0.05 | 1.3 | Light snow. | R. J. Cole. |
| Stratford, Ontario | 28.69 | 728.7 | 30.06 | 763.5 | 20.0 | — 6.7 | 92 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0.07 | 1.8 | Overcast..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.67 | 753.6 | 29.71 | 754.6 | 39 | 3.9 | 68 | W | 8 | 3.6 | ..... | 0 | 2ks | ..... | W | 0.38 | 9.7 | Clear..... | T. C. Hill. |
| *Toronto, Ontario | 29.67 | 753.6 | 30.08 | 764.0 | 20 | — 6.7 | 81 | NW | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Light snow.. | Magnetic Observatory |
| Windsor, N. S | 29.66 | 753.4 | 29.75 | 755.6 | 28.0 | — 2.2 | 88 | W | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.20 | 5.1 | Overcast..... | Prof. John E Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | 29.30 | 744.2 | ..... | ..... | 34.0 | 1.1 | 79 | SW | ..... | ..... | ..... | 10k;s | 10s | ..... | ..... | 0.30 | 7.6 | Cloudy..... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Cloud. Amount. Up'er 0—10. | Cloud. Amount. Low'r 0—10. | Cloud. Direction. Upper. From— | Cloud. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.72 | 754.9 | 29.96 | 761.0 | 22 | — 5.6 | 72 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Alpena, Michigan | 29.43 | 747.5 | 30.12 | 765.0 | 24 | — 4.4 | 74 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Atlanta, Georgia | 28.95 | 735.3 | 30.14 | 765.5 | 37 | 2.8 | 54 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 29.98 | 761.5 | 30.00 | 762.0 | 30 | — 1.1 | 57 | N | 9 | 4.0 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Augusta, Georgia | 29.96 | 761.0 | 30.15 | 765.8 | 37 | 2.8 | 71 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 29.96 | 761.0 | 30.01 | 762.2 | 36 | 2.2 | 71 | W | 8 | 3.6 | ..... | 5k | 5s | NW | NW | Inap. | Inap. | Cloudy | |
| Barnegat, New Jersey | 29.96 | 761.0 | 29.98 | 761.5 | 28 | — 2.2 | 58 | N | 14 | 6.3 | ..... | ..... | 10s | ..... | NW | 0.01 | 0.3 | Cloudy | |
| Bismarck, Dakota | 28.11 | 714.0 | 29.96 | 761.0 | 32 | 0.0 | 50 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boerne, Texas | 28.67 | 728.2 | 29.97 | 761.2 | 60 | 15.6 | 94 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Boise City, Idaho | 26.94 | 684.3 | 29.90 | 759.4 | 52 | 11.1 | 86 | SE | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.30 | 7.6 | Cloudy | |
| Boston, Massachusetts | 29.72 | 754.9 | 29.88 | 758.9 | 24 | — 4.4 | 74 | W | 12 | 5.4 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Brackettville, Texas | 28.94 | 735.1 | 29.96 | 761.0 | 63 | 17.2 | 83 | E | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 29.08 | 738.6 | 30.13 | 765.3 | 27 | — 2.8 | 76 | E | 8 | 3.6 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Brownsville, Texas | 30.03 | 762.8 | 30.07 | 763.8 | 70 | 21.1 | 80 | E | 4 | 1.8 | ..... | 0 | 8ks | ..... | SE | 0 | 0 | Fair | |
| Buffalo, New York | 29.29 | 744.0 | 30.04 | 763.0 | 20 | — 6.7 | 78 | W | 7 | 3.1 | ..... | ..... | 10n | ..... | NW | 0.03 | 0.8 | Light snow | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 53 | 11.7 | 19 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.64 | 752.8 | 29.94 | 760.5 | 23.5 | — 4.7 | 67 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.90 | 759.4 | 30.31 | 769.9 | 39 | 3.9 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.18 | 639.6 | 29.98 | 761.5 | 50 | 10.0 | 32 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 45 | S | ..... | ..... | 4 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.53 | 699.2 | 30.10 | 764.5 | 41 | 5.0 | 91 | SW | 4 | 1.8 | ..... | 5k | 0 | SW | ..... | 0.12 | 3.0 | Fair | |
| Cape Hatteras, N. Carolina | 30.00 | 762.0 | 30.01 | 762.2 | 43 | 6.1 | 59 | NE | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Henry, Virginia | 30.01 | 762.2 | 30.02 | 762.5 | 40 | 4.4 | 56 | SW | 4 | 1.8 | ..... | 5cs | 5s | Calm | Calm | 0 | 0 | Cloudy | |
| Cape Lookout, N. Carolina | 29.98 | 761.5 | 30.00 | 762.0 | 43 | 6.1 | 67 | N | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape May, New Jersey | 29.94 | 760.5 | 29.98 | 761.5 | 35 | 1.7 | 62 | NW | 18 | 8.0 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Castroville, Texas | 29.32 | 744.7 | 30.02 | 762.5 | 64 | 17.8 | 83 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 30.00 | 762.0 | 30.06 | 763.5 | 44 | 6.7 | 43 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 23.93 | 607.8 | 29.87 | 758.7 | 36 | 2.2 | 61 | SW | 4 | 1.8 | ..... | 2ck | 8ks | W | SW | 0 | 0 | Cloudy | |
| Chicago, Illinois | 29.48 | 748.8 | 30.20 | 767.1 | 34 | 1.1 | 70 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cincinnati, Ohio | 29.53 | 750.0 | 30.21 | 767.3 | 33 | 0.6 | 70 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cleveland, Ohio | 29.33 | 745.0 | 30.09 | 764.3 | 29 | — 1.7 | 78 | NW | 11 | 4.9 | ..... | ..... | 10s | ..... | W | 0.03 | 0.8 | Cloudy | |
| Coleman City, Texas | 28.28 | 718.3 | 29.97 | 761.2 | 49 | 9.4 | 85 | SE | 6 | 2.7 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Columbus, Ohio | 29.26 | 743.2 | 30.14 | 765.5 | 30 | — 1.1 | 57 | NW | 6 | 2.7 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Concho, Texas | 28.15 | 715.0 | 29.77 | 756.1 | 50 | 10.0 | 79 | SW | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Corsicana, Texas | 29.69 | 754.1 | 30.17 | 766.3 | 49 | 9.4 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.58 | 751.3 | 30.25 | 768.3 | 30 | — 1.1 | 57 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.27 | 641.8 | ..... | ..... | 42 | 5.6 | 66 | Calm | 0 | 0 | ..... | 5k | 0 | S | ..... | 0 | 0 | Fair | |
| Decatur, Texas | 29.96 | 761.0 | 30.16 | 766.1 | 45 | 7.2 | 68 | SE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.35 | 745.5 | 30.16 | 766.1 | 48 | 8.9 | 56 | E | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.67 | 626.6 | 29.89 | 759.2 | 44 | 6.7 | 68 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Des Moines, Iowa | 29.32 | 744.7 | 30.26 | 768.6 | 26 | — 3.3 | 75 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Detroit, Michigan | 29.39 | 746.5 | 30.10 | 764.5 | 27 | — 2.8 | 88 | NW | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Dodge City, Kansas | 27.35 | 694.7 | 29.65 | 753.1 | 43 | 6.1 | 51 | SE | 16 | 7.2 | ..... | 2ck | 0 | W | ..... | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.43 | 747.5 | 30.18 | 766.6 | 26 | — 3.3 | 63 | N | 1 | 0.4 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Duluth, Minnesota | 29.49 | 749.0 | 30.22 | 767.6 | 22 | — 5.6 | 58 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.27 | 743.4 | 30.00 | 762.0 | 63 | 17.2 | 83 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.69 | 754.1 | 29.76 | 755.9 | 29 | — 1.7 | 67 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Cloudy | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 69 | 20.6 | 75 | S | ..... | ..... | 4 | ..... | 8s | ..... | S | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.21 | 665.7 | ..... | ..... | 61 | 16.1 | 30 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.32 | 744.7 | 30.07 | 763.8 | 25 | — 3.9 | 75 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.06 | 1.5 | Cloudy | |
| Escanaba, Michigan | 29.51 | 749.5 | 30.20 | 767.1 | 25 | — 3.9 | 50 | NW | 8 | 3.6 | ..... | 2cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Florence, Arizona | 28.56 | 725.4 | 30.16 | 766.1 | 56 | 13.3 | 40 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.93 | 709.4 | ..... | ..... | 34 | 1.1 | 79 | NE | 2 | 0.9 | ..... | 1ck | 0 | Calm | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.48 | 647.2 | 29.54 | 750.3 | 43 | 6.1 | 30 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.22 | 640.6 | 30.18 | 766.6 | 59 | 15.0 | 76 | SW | 4 | 1.8 | ..... | 5c | 0 | NE | ..... | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.63 | 752.6 | 30.18 | 766.6 | 48 | 8.9 | 23 | E | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.81 | 731.8 | 30.10 | 764.5 | 49 | 9.4 | 64 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.29 | 693.2 | ..... | ..... | 44 | 6.7 | 75 | NW | 20 | 8.9 | ..... | 2k | Sm'e | NW | ..... | 0 | 0 | Fair | |
| Fort McKavett, Texas | 27.79 | 705.8 | 29.69 | 754.1 | 57 | 13.9 | 81 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Sill, Indian Territory | 28.88 | 733.5 | 30.00 | 762.0 | 48 | 8.9 | 43 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Stevenson, Dakota | 28.12 | 714.2 | ..... | ..... | 28 | — 2.2 | 67 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fredericksburg, Texas | 28.36 | 720.3 | 29.92 | 760.0 | 60 | 15.6 | 82 | S | 4 | 1.8 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 30.14 | 765.5 | 30.18 | 766.6 | 64 | 17.8 | 53 | SE | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Graham, Texas | 29.00 | 736.6 | 30.06 | 763.5 | 55 | 12.8 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.49 | 749.0 | 30.17 | 766.3 | 31 | — 0.6 | 69 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.38 | 746.2 | 30.19 | 766.8 | 31 | — 0.6 | 58 | NW | 3 | 1.3 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Indianola, Texas | 30.12 | 765.0 | 30.15 | 765.8 | 67 | 19.4 | 84 | SE | 11 | 4.9 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 28.93 | 734.8 | 30.03 | 762.8 | 65 | 18.3 | 49 | SE | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.11 | 764.8 | 30.14 | 765.5 | 47 | 8.3 | 34 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.57 | 751.1 | 30.22 | 767.6 | 31 | — 0.6 | 74 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Key West, Florida | 30.08 | 764.0 | 30.11 | 764.8 | 66 | 18.9 | 69 | N | 18 | 8.0 | ..... | 5k | 0 | N | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 29.98 | 761.5 | 30.00 | 762.0 | 41 | 5.0 | 49 | NE | 12 | 5.4 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Knoxville, Tennessee | 29.15 | 740.4 | 30.20 | 767.1 | 35 | 1.7 | 70 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Smoky | |
| La Crosse, Wisconsin | 29.46 | 748.3 | 30.24 | 768.1 | 27 | — 2.8 | 64 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.05 | 661.7 | 30.20 | 767.1 | 43 | 6.1 | 83 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Leavenworth, Kansas | 29.33 | 745.0 | 30.22 | 767.6 | 32 | 0.0 | 59 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.79 | 756.7 | 30.14 | 765.5 | 51.5 | 10.8 | 86 | NE | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0.69 | 17.5 | Fair | |
| Louisville, Kentucky | 29.63 | 752.6 | 30.21 | 767.3 | 36 | 2.2 | 45 | NW | 4 | 1.8 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.31 | 744.5 | 30.01 | 762.2 | 39 | 3.9 | 39 | SW | 2 | 0.9 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Madison, Wisconsin | 29.19 | 740.4 | 30.23 | 767.8 | 28 | — 2.2 | 66 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.43 | 747.5 | 30.17 | 766.3 | 28 | — 2.2 | 66 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.46 | 722.9 | 30.22 | 767.6 | 57 | 13.9 | 81 | E | 2 | 0.9 | ..... | 1cs | 0 | W | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.96 | 761.0 | 30.30 | 769.6 | 42 | 5.6 | 42 | N | 3 | 1.3 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.44 | 747.8 | 30.21 | 767.3 | 28 | — 2.2 | 88 | NW | 7 | 3.1 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Mobile, Alabama | 30.24 | 768.1 | 30.28 | 769.1 | 43.5 | 6.4 | 63 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 30.01 | 762.2 | 30.26 | 768.6 | 39 | 3.9 | 55 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.97 | 735.8 | 30.08 | 764.0 | 27 | — 2.8 | 76 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | Light snow | |
| Mt. Washington, N. H. | 23.26 | 590.8 | 29.62 | 752.3 | 3 | —16.1 | 100 | NE | 36 | 16.1 | ..... | ..... | 10n | ..... | NE | 0.06 | 1.5 | Light snow | |
| Nashville, Tennessee | 29.71 | 754.6 | 30.27 | 768.8 | 40 | 4.4 | 56 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 29.82 | 757.4 | 29.94 | 760.5 | 28 | — 2.2 | 66 | NW | 10 | 4.5 | ..... | 5ck | 2s | NW | Calm | 0 | 0 | Fair | |
| New London, Connecticut | 29.88 | 758.9 | 29.93 | 760.2 | 26 | — 3.3 | 69 | NW | 6 | 2.7 | ..... | 7ck | 0 | NW | ..... | 0.02 | 0.5 | Fair | |
| New Orleans, Louisiana | 30.18 | 766.6 | 30.25 | 768.3 | 53 | 11.7 | 54 | NE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.84 | 757.9 | 29.90 | 759.4 | 26 | — 3.3 | 75 | W | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| New York, New York | 29.80 | 756.9 | 29.98 | 761.5 | 27 | — 2.8 | 55 | W | 9 | 4.0 | ..... | 5ck | 1s | W | Calm | 0 | 0 | Fair | |
| Norfolk, Virginia | 29.95 | 760.7 | 30.01 | 762.2 | 43 | 6.1 | 58 | W | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.02 | 686.3 | 29.63 | 752.6 | 36 | 2.2 | 61 | SE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.79 | 756.7 | 29.83 | 757.7 | 49.0 | 9.4 | 85 | E | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 29.00 | 736.6 | 30.13 | 765.3 | 37 | 2.8 | 53 | E | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Oswego, New York | 29.68 | 753.9 | 30.01 | 762.2 | 26 | — 3.3 | 75 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Pembina, Dakota | 29.20 | 741.7 | 30.07 | 763.8 | 25 | — 3.9 | 87 | S | 6 | 2.7 | ..... | 0 | 2s | ..... | NW | 0 | 0 | Clear | |
| Philadelphia, Pa | 29.94 | 760.5 | 30.00 | 762.0 | 26 | — 3.3 | 75 | NE | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.87 | 733.3 | 30.69 | 779.5 | 54 | 12.2 | 55 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.78 | 451.6 | 29.99 | 761.7 | 20 | — 6.7 | 27 | SW | 22 | 9.8 | ..... | 1cs | 0 | Calm | ..... | 0.04 | 1.0 | Fair | |
| Pioche, Nevada | 23.88 | 606.5 | 29.65 | 753.1 | 31 | — 0.6 | 89 | S | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | 0.31 | 7.9 | Light snow. | |
| Pittsburg, Pennsylvania | 29.23 | 742.4 | 30.08 | 764.0 | 27 | — 2.8 | 76 | NW | 8 | 3.6 | ..... | ..... | 10n | ..... | NW | 0.05 | 1.3 | Light snow. | |
| Port Huron, Michigan | 29.38 | 746.2 | 30.08 | 764.0 | 23 | — 5.0 | 86 | NW | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light snow. | |
| Portland, Maine | 29.77 | 756.1 | 29.82 | 757.4 | 30 | — 1.1 | 57 | NW | 4 | 1.8 | ..... | 1k | 0 | Calm | ..... | 0 | 0 | Clear. | |
| Portland, Oregon | 29.83 | 757.7 | 29.93 | 760.2 | 52.0 | 11.1 | 86 | S | 8 | 3.6 | ..... | ..... | 10n | ..... | S | 0.07 | 1.8 | Light rain | |
| Prescott, Arizona | 24.69 | 627.1 | 30.05 | 763.3 | 37 | 2.8 | 71 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.15 | 740.4 | 29.96 | 761.0 | 62 | 16.7 | 67 | SE | 12 | 5.4 | ..... | 2k | 0 | S | ..... | 0 | 0 | Fair | |
| Punta Rassa, Florida | 30.14 | 765.5 | 30.16 | 766.1 | 53 | 11.7 | 36 | N | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Red Bluff, California | 29.65 | 753.1 | 30.01 | 762.2 | 53 | 11.7 | 86 | SE | 16 | 7.2 | ..... | ..... | 10n | ..... | Calm | 0.30 | 7.6 | Light rain | |
| Rio Grande City, Texas | 29.88 | 758.9 | 30.10 | 764.5 | 69 | 20.6 | 80 | SE | ..... | ..... | 1 | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Rochester, New York | 29.38 | 746.2 | 30.03 | 762.8 | 20 | — 6.7 | 70 | NW | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0.11 | 2.8 | Cloudy | |
| Roseburg, Oregon | 29.44 | 747.8 | 30.01 | 762.2 | 50.0 | 10.0 | 86 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0.07 | 1.8 | Cloudy | |
| Sacramento, California | 29.98 | 761.5 | 30.06 | 763.5 | 52.5 | 11.4 | 93 | SE | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0.56 | 14.2 | Light rain | |
| St. Louis, Missouri | 29.67 | 753.6 | 30.28 | 769.1 | 33 | 0.6 | 61 | NW | 3 | 1.3 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| St. Marks, Florida | 30.19 | 766.8 | 30.21 | 767.3 | 40 | 4.4 | 65 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.30 | 744.2 | 30.18 | 766.6 | 25 | — 3.9 | 75 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.48 | 647.2 | 29.81 | 757.2 | 42 | 5.6 | 74 | SE | 24 | 10.7 | ..... | ..... | 10n | ..... | S | 0.02 | 0.5 | Light rain | |
| San Antonio, Texas | 29.44 | 747.8 | 30.02 | 762.5 | 64 | 17.8 | 83 | SE | 3 | 1.3 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Cloudy | |
| San Diego, California | 30.06 | 763.5 | 30.16 | 766.1 | 51 | 10.6 | 93 | NE | 5 | 2.2 | ..... | 0 | 5s | ..... | Calm | 0.06 | 1.5 | Fair | |
| Sandusky, Ohio | 29.43 | 747.5 | 30.13 | 765.3 | 28 | — 2.2 | 77 | NW | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandy Hook, New Jersey | 29.94 | 760.5 | 29.97 | 761.2 | 26 | — 3.3 | 52 | NW | 16 | 7.2 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Clearing | |
| San Francisco, California | 30.04 | 763.0 | 30.10 | 764.5 | 54.7 | 12.6 | 87 | NW | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.09 | 2.3 | Light rain | |
| Santa Fé, New Mexico | 23.23 | 590.0 | 29.77 | 756.1 | 45 | 7.2 | 46 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.00 | 762.0 | 30.10 | 764.5 | 43 | 6.1 | 43 | NW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Shreveport, Louisiana | 30.00 | 762.0 | 30.23 | 767.8 | 49 | 9.4 | 85 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Silver City, New Mexico | 24.28 | 616.7 | 30.52 | 775.2 | 41 | 5.0 | 48 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.01 | 762.2 | 30.04 | 763.0 | 41 | 5.0 | 49 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.79 | 756.7 | 29.93 | 760.2 | 26 | — 3.3 | 75 | N | 5 | 2.2 | ..... | ..... | 10ks | ..... | NW | 0 | 0 | Cloudy | |
| Stockton, Texas | 29.94 | 684.3 | 29.94 | 760.5 | 53 | 11.7 | 61 | S | 9 | 4.0 | ..... | 5c | 0 | S | ..... | 0 | 0 | Fair | |
| Thatcher's Island, Mass | 29.80 | 756.9 | 29.86 | 758.4 | 25 | — 3.9 | 38 | NW | 12 | 5.4 | ..... | 8k | 0 | W | ..... | 0 | 0 | Fair | |
| Toledo, Ohio | 29.40 | 746.7 | 30.12 | 765.0 | 30 | — 1.1 | 68 | NW | 6 | 2.7 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Tucson, Arizona | 27.57 | 700.3 | 30.12 | 765.0 | 55 | 12.8 | 34 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.40 | 746.7 | 29.88 | 758.9 | 55.0 | 12.8 | 81 | W | 2 | 0.9 | ..... | ..... | 10ks | ..... | W | 0.01 | 0.3 | Cloudy | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 33 | 0.6 | 89 | SW | ..... | ..... | 6 | ..... | 10s | ..... | SW | 0.37 | 9.4 | Cloudy | |
| Uvalde, Texas | 29.19 | 741.4 | 30.00 | 762.0 | 64 | 17.8 | 78 | E | 5 | 2.2 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 30.03 | 762.8 | 30.30 | 769.6 | 45 | 7.2 | 39 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Virginia City, Montana | 24.08 | 611.6 | 29.56 | 750.8 | 47 | 8.3 | 62 | SE | 8 | 3.6 | ..... | 0 | 5s | ..... | Calm | 0.16 | 4.1 | Fair | |
| Visalia, California | 29.74 | 755.4 | 30.12 | 765.0 | 50 | 10.0 | 93 | E | 2 | 0.9 | ..... | 0 | 1s | ..... | Calm | 0.25 | 6.3 | Clear | |
| Washington, D. C. | 29.90 | 759.4 | 30.02 | 762.5 | 32 | 0.0 | 79 | W | 4 | 1.8 | ..... | ..... | 10n;s | ..... | WNW | 0.02 | 0.5 | Cloudy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 58 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 29.95 | 760.7 | 30.03 | 762.8 | 41 | 5.0 | 33 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.47 | 646.9 | 29.83 | 757.7 | 43 | 6.1 | 92 | SW | 8 | 3.6 | ..... | ..... | 10n | ..... | SW | 0.30 | 7.6 | Light rain | |
| Wood's Holl, Mass | 29.86 | 758.4 | 29.90 | 759.4 | 27 | — 2.8 | 88 | NW | 14 | 6.3 | ..... | ..... | 10ks | ..... | NW | 0 | 0 | Cloudy | |
| Yankton, Dakota | 28.80 | 731.5 | 30.14 | 765.5 | 32 | 0.0 | 50 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yuma, Arizona | 29.89 | 759.2 | 30.06 | 763.5 | 56 | 13.3 | 57 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.60 | 726.4 | 30.06 | 763.5 | 42 | 5.6 | 20 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.05 | 763.3 | 30.10 | 764.5 | 62 | 16.7 | 52 | NW | 9.6 | 4.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.21 | 640.3 | ..... | ..... | 67.5 | 19.7 | 83 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0.02 | 0.5 | ..... | Thomas Herran. |
| Navassa, W. I | 29.90 | 759.4 | 29.98 | 761.5 | 81 | 27.2 | ..... | NE | 3.5 | 1.6 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Partly clo'dy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 29.98 | 761.5 | 29.98 | 761.5 | 82 | 27.8 | 83 | E | ..... | ..... | 2 | 3c | 5k | E | ..... | 0.025 | 0.64 | Fair | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | 29.98 | 761.5 | 30.04 | 763.0 | — 6.0 | —21.1 | 81 | NW | 7 | 3.1 | ..... | 1c | 0 | NW | ..... | 0 | 0 | Fair | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKayett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.02 | 762.5 | 56 | 13.3 | 54 | 12.2 | 80 | WSW | 7 | 3.1 | ..... | ..... | 10 | ..... | ..... | 0.012 | 0.30 | ..... | ..... | Overcast..... | |
| Navy Yard, Pensacola, Fla. | 30.30 | 769.6 | 45 | 7.2 | 45 | 7.2 | 61 | N | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear. ..... | |
| Navy Yard, Portsmouth, N.H | 29.88 | 758.9 | 60 | 15.6 | 26 | — 3.3 | 89 | W | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan.....* | 30.08‡ | 764.0‡ | ..... | ..... | 55 | 12.8 | 84 | SW | ..... | ..... | 1 | ..... | 1ck | ..... | Calm | 0 | 0 | ..... | ..... | Fair ..... | |
| Adams, Panama .....* | 29.94 | 760.5 | 79 | 26.1 | 78 | 25.6 | 95 | NW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Fair ..... | |
| Alaska, Sitka, Alaska..... | 29.78‡ | 756.4‡ | ..... | ..... | 36 | 2.2 | 81 | NNW | ..... | ..... | 5 | ..... | 2 | ..... | SE | 0 | 0 | Smooth | ..... | D. clouds..... | |
| Alliance, Naples, Italy..... | 29.77‡ | 756.1‡ | ..... | ..... | 57 | 13.9 | 63 | SW | ..... | ..... | 1–2 | ..... | 9 | ..... | S; W | ..... | ..... | Light | SSE | Threatening | |
| Ashuelot, Hong-Kong, China. ...* | 29.90‡ | 759.4‡ | ..... | ..... | 67 | 19.4 | 95 | E | ..... | ..... | 3 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Misty..... | |
| Canonicus, New Orleans, La.....* | 30.19 | 766.8 | 43 | 6.1 | 54 | 12.2 | 100 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Colorado, New York, N. Y..... | 29.92 | 760.0 | 32 | 0.0 | 31 | — 0.6 | 100 | NW | 16 | 7.2 | ..... | ..... | 2 | ..... | NW | 0 | 0 | ..... | ..... | Clear..... | |
| Constitution Lisbon, Portugal..... | 30.11‡ | 764.8‡ | ..... | ..... | 65 | 18.3 | 73 | SE | ..... | ..... | 2 | ..... | 7 | ..... | SE | ..... | ..... | ..... | ..... | Pleasant..... | |
| Despatch, Genoa, Italy..... | 29.80‡ | 756.9‡ | ..... | ..... | 65 | 18.3 | 63 | NW | ..... | ..... | 2 | ..... | 2 | ..... | NW | ..... | ..... | Smooth | ..... | Clear. ..... | |
| Franklin, Norfolk, Va.....* | 30.14 | 765.5 | 60 | 15.6 | 43 | 6.1 | 60 | WSW | ..... | ..... | 3 | ..... | 8 | ..... | N | 0 | 0 | ..... | ..... | Hazy..... | |
| Gettysburg, Genoa, Italy ..... | 29.78‡ | 756.4‡ | ..... | ..... | 65 | 18.3 | 89 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0.1 | 2. | ..... | ..... | Clear..... | |
| Hartford, Montevideo, Uruguay.* | 30.03 | 762.8 | 67 | 19.4 | 67 | 19.4 | 60 | ESE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair... ..... | |
| Michigan, Erie, Pa.....† | 30.00‡ | 762.0‡ | ..... | ..... | 24 | — 4.4 | 89 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Monocacy. Shanghai, China.....* | 29.83‡ | 757.7‡ | ..... | ..... | 57 | 13.9 | 81 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | SSE | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Monongahela Yokohama, Japan .....* | 30.00‡ | 762.0‡ | ..... | ..... | 57 | 13.9 | 69 | SSW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C.....* | 30.00 | 763.5 | 45 | 7.2 | 45 | 7.2 | 48 | NNW | 14 | 6.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Onward, Callao, Peru.....†* | 30.00 | 762.0 | ..... | ..... | 66 | 18.9 | 94 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | ..... | ..... | Long | WNW | Fair ..... | |
| Palos, Tientsin, China.....* | 29.86 | 758.4 | 76 | 24.4 | 47 | 8.3 | 70 | ESE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 38 | 3.3 | 68 | SW | ..... | ..... | 2 | ..... | 5 | ..... | N | ..... | ..... | ..... | ..... | Fair..... | |
| Pensacola, S. 27° 24′, W. 71° 17′..... | 29.99‡ | 761.7 | ..... | ..... | 61 | 16.1 | 88 | SW | 3 | 1.3 | ..... | ..... | 10 | ..... | SW | 0 | 0 | Long | SW | Cloudy..... | |
| Plymouth, Wood's Holl, Mass..... | 29.90‡ | 759.4‡ | ..... | ..... | 32 | 0.0 | 100 | WNW | ..... | ..... | 0–1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Powhatan, Norfolk, Va..... | 30.00‡ | 762.0‡ | ..... | ..... | 42 | 5.6 | 54 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Quinnebaug, Gibraltar, Med..... | 30.06‡ | 763.5‡ | ..... | ..... | 61 | 16.1 | 71 | NW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Ranger, Amoy, China.....* | 29.98‡ | 761.5‡ | ..... | ..... | 64 | 17.8 | 89 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Overcast... . | |
| Richmond, N. 11° 47′, E. 62° 11′..... | 29.85‡ | 758.2‡ | ..... | ..... | 83 | 28.3 | 75 | NNE | ..... | ..... | 2 | ..... | 2 | ..... | NNE | 0 | 0 | Smooth | ..... | Fair..... | |
| Rio Bravo, Brownsville, Texas..... | 30.06 | 763.5 | 69 | 20.6 | 69 | 20.6 | 95 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Santee, Annapolis, Md... ..... | 30.01‡ | 762.2‡ | ..... | ..... | 35 | 1.7 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | W | Blank | Blank | ..... | ..... | Overcast..... | |
| Saratoga, N. 35° 53′, W. 69° 10′... . | 29.94‡ | 760.5‡ | ..... | ..... | 48 | 8.9 | 70 | NW | ..... | ..... | 4 | ..... | 8 | ..... | SSE | Blank | Blank | Mod'ate | NNW | Squally..... | |
| St. Louis, League Island, Pa..... | 30.05‡ | 763.3‡ | ..... | ..... | 30 | — 1.1 | ..... | Calm | 0 | 0 | ..... | ..... | 10 | ..... | NE | 0 | 0 | ..... | ..... | Cloudy ..... | |
| Supply, New York, N. Y..... | 29.98‡ | 761.5‡ | ..... | ..... | 29 | — 1.7 | 100 | NW | ..... | ..... | 3 | ..... | 2 | ..... | NW | ..... | ..... | ..... | ..... | Fair ..... | |
| Trenton, Genoa, Italy.....* | 29.79‡ | 756.7‡ | ..... | ..... | 65 | 18.3 | 52 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0.04 | 1.0 | Mod'ate | S | Clear..... | |
| Tuscarora, Taugolataugola, Mexico* | 29.89‡ | 759.2‡ | ..... | ..... | 76 | 24.4 | 68 | NNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Long | SW | Clear ..... | |
| Vandalia Boston, Mass.....† | 30.04‡ | 763.0‡ | ..... | ..... | 33 | 0.6 | 100 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Wabash, Boston, Mass..... | 29.93‡ | 760.2‡ | ..... | ..... | 25 | — 3.9 | 82 | W | 7 | 3.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Wyoming, Alexandria, Egypt ....* | 29.89‡ | 759.2‡ | ..... | ..... | 70 | 21.1 | 95 | NE | ..... | ..... | 2–3 | ..... | 2 | ..... | NE | ..... | ..... | Smooth | NE | Clear..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From — | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | |
| S. S. Colima, N. 8° 48′, W. 79° 31′ † | | 29.95‡ | 760.7‡ | 80 | 26.7 | 96 | N | | | 3 | | 9 | | SSE | 0 | | | Misty | Capt. R. Searle. |
| S. S. Costa Rica | * | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota, Capt. H. G. Morse, Tacoma, Washington Ter. | | 30.07‡ | 763.8‡ | | | | NE | | | 2 | | 4 | | W | 0 | None | | Fine | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Granada, Capt. Austin. | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, S. 22° 45′, W. 174° 50′ | | 29.94 | 760.5‡ | | | | SE | | | 2 | | 2 | | NW | | Long; slow | SE | Fine | R. C. Ghest, 1st Officer |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic, N. 41° 50′, W. 62° 28′ * | | 30.00 | 762.0 | 36 | 2.2 | | W | | | 6 | | 3 | | W | | High | W | Squally | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, N. 44° 46′, W. 164° 35′ * | | 29.96‡ | 761.0‡ | 48 | 8.9 | 100 | SW | | | 7 | | n | | SW | | Rough | SW | Raining | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 31° 22′, E. 133° 22′ * | | 29.87‡ | 758.7‡ | 70 | 21.1 | ?? | NE | | | 4 | | s | | Var. | Blank | Smooth | N | Overcast | Capt. W. H. Kidley |
| § S. S. Oceanic, Capt. J. Metcalf, N. 34° 55′, W. 169° 52′ | | 30.23‡ | 767.8‡ | 53 | 11.7 | 100 | N | | | 3–4 | | 6 | | NNW | | | NNE | Showery | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. §The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the date may be in error one day; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 33° 25′, W. 76° 43′ | | 30.01‡ | 762.2‡ | 58.0 | 14.4 | 70 | NNW | | | 3 | | 5 | | NW | 0 | Mod'ate | N | Clear | Capt. C. Undütsch. |
| S. S. Leipzig, Off the Lizards, England | | 29.75‡ | 755.6‡ | 54.5 | 12.5 | 71 | SSW | | | 4 | | 10 | | | 4 hours | Mod'ate | WSW | Drizzling | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, Capt. G. Meyer, N. 38°06′ W. 74° 06′ | | 29.89‡ | 759.2‡ | | | | NW | | | 3 | | 5 | | WNW | | Smooth | WNW | Cloudy | G. Risius, 3rd Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | Character. | Direction from— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Philadelphia, Pa | | 30.15‡ | 765.8‡ | 32 | 0.0 | | NE | | | 5 | | 6 | | N | 0 | | | Fair | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher, & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| Peruvian, N. 45° 30′, W. 56° 30′ | † | 29.64‡ | 752.8‡ | 34 | 1.1 | 82 | W | | | 5 | | 5? | | W | | Heavy | W. | Clear? | J. Powell, 4th Officer. |
| **MARINE SERIES. (Miscellaneous.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
| Brigantine "George," of Halifax | | | | | | | | | | | | | | | | | | | Willard N. Pratt. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

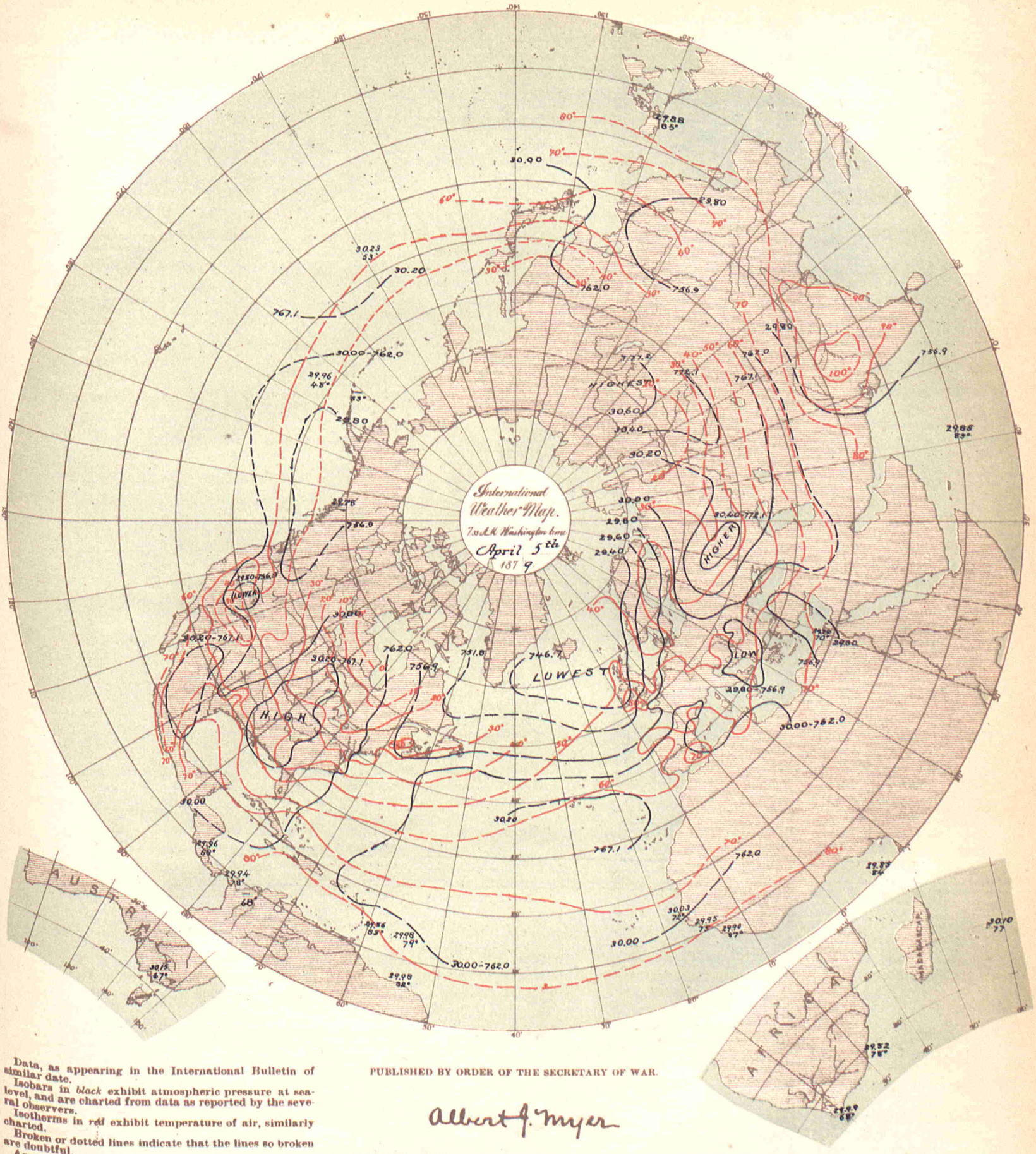
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg'd.) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIOAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 6, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGEGIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer, corrected for instrum'tal error and temperature. Inches. | Barometer, corrected for instrum'tal error and temperature. Millimeters. | Barometer, reduced to sea-level. Inches. | Barometer, reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 29.98 | 761.6 | 64.9 | 18.3 | 75 | WNW | | | 1 | | 0 | | | 0 | 0 | Clear | Kesxuche. |
| Algiers | | | 29.88 | 759.0 | 65.1 | 18.4 | 72 | NNE | | | 1 | | 0 | | | 0 | 0 | Clear | Tourillere. |
| La Calle | | | 29.96 | 761.0 | 60.4 | 15.8 | 77 | ENE | | | 2 | | 2 | | | 0 | 0 | Fair | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 30.13 | 765.2 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 30.01 | 762.3 | 71.6 | 22.0 | 22 | E | | | 1 | | 0 | | | 0 | 0 | Clear | Herbin. |
| Tebessa | | | 30.06 | 763.4 | 68.0 | 20.0 | 41 | SW | | | 2 | | 2 | | | 0 | 0 | Fair | Watrin. |
| Geriville | | | 30.04 | 762.9 | 64.6 | 18.1 | 92 | S | | | 3 | | 0 | | | 0 | 0 | Clear | Brugnlaux. |
| Laghouat | | | 30.04 | 763.1 | 65.5 | 18.6 | 80 | S | | | 1 | | 0 | | | 0 | 0 | Clear | Bertrand. |
| Biskra | | | 30.02 | 762.6 | 72.1 | 22.3 | 21 | NW | | | 1 | | 0 | | | 0 | 0 | Clear | Chanvaux. |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.32 | 744.7 | 29.87 | 758.6 | 54.5 | 12.5 | 59 | SW | | | 2 | | 7 | | | 0 | 0 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.10 | 739.1 | 29.87 | 758.8 | 47.8 | 8.8 | 68 | NE | | | 1 | | 10 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 28.91 | 734.2 | 29.79 | 756.6 | 48.9 | 9.4 | 50 | Calm | | | 0 | | 10s | | | 0.031 | 0.80 | | Julius Mikolik. |
| Gratz | 28.58 | 726.0 | 29.82 | 757.3 | 56.8 | 13.8 | 44 | S | | | 3 | | 7 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.36 | 720.4 | 29.81 | 757.2 | 43.9 | 6.6 | 85 | E | | | 1 | | 10 | | | 0.057 | 1.45 | | Prof. A. Gottschling. |
| Kremsmünster | 28.43 | 722.1 | 29.76 | 755.6 | 54.3 | 12.4 | 40 | NE | | | 2 | | 2 | | | 0 | 0 | | Prof. C. Wagner. |
| Lemberg | 28.87 | 733.4 | 29.89 | 759.3 | 36.9 | 2.7 | 82 | SE | | | 1 | | 10 | | | 0.008 | 0.2 | | Dr. T. Stanecki. |
| Pola | 29.78 | 756.4 | 29.89 | 759.2 | 57.7 | 14.3 | 59 | WSW | | | 1 | | 0 | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.35 | 745.5 | 29.82 | 757.3 | 51.8 | 11.0 | 39 | S | | | 3 | | 8 | | | 0 | 0 | | Julius Csics, S. J. |
| Szegedin | 29.53 | 750.0 | 29.81 | 757.2 | 50.4 | 10.2 | 76 | W | | | 1 | | 10 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 29.80 | 756.9 | 29.90 | 759.5 | 56.1 | 13.4 | 62 | NW | | | 1 | | 3 | | | 0 | 0 | Almost clear | P. Busin. |
| Vienna | 29.12 | 739.6 | 29.84 | 757.8 | 52.2 | 11.2 | 50 | NNE | | | 1 | | 8 | | | 0.043 | 1.1 | | I. R. Central Met. Obs'y |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment o observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.42 | 747.2 | 29.62 | 752.3 | 51.3 | 10.7 | 77 | S | | | 3 | | 10 | | SSW | 0.035 | 0.90 | | Royal Observatory. |
| Furnes | 29.56 | 750.7 | 29.68 | 751.3 | 55.0 | 12.8 | 72 | SSW | | | 6 | | 8 | | | 0.220 | 5.6 | | M. E. de Cae. |
| Maeseyck | 29.56 | 750.7 | 29.68 | 753.9 | 54.1 | 12.3 | 66 | S | | | 4 | | 10 | | | 0.024 | 0.6 | | M. Pierrot. |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0; instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m., Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Upper. 0–10. | Clouds. Amount. Low'r. 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.20 | 741.7 | 29.29 | 744.0 | 42.5 | 5.8 | ..... | SSE | 20 | 8.9 | ..... | ..... | 9 | ..... | ..... | 0.095 | 2.42 | Overcast..... | W. Boswell. |
| Ardrossan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.00 | 736.6 | 45.2 | 7.3 | ..... | SE | 12 | 5.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.12 | 739.9 | 48.3 | 9.1 | ..... | SE | 32 | 14.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.18 | 741.2 | 46.8 | 8.2 | ..... | S | 24 | 10.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Showery ..... | Thomas Mackereth. |
| Bradford, Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.96 | 761.0 | 29.99 | 761.7 | 82 | 27.8 | ..... | NE | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | Gloomy..... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.39 | 746.5 | 55.0 | 12.8 | ..... | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. Todd. [O. |
| Cardington | ..... | ..... | 29.35 | 745.5 | 51.0 | 10.6 | ..... | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John McLare. |
| Chatham, School M. E. | 29.36 | 745.7 | 29.49 | 749.0 | 51.3 | 10.7 | ..... | SW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | J. Carmell, Sapper, R. E. |
| Dartmoor | 27.79 | 705.8 | 29.24 | 742.7 | 47.8 | 8.8 | ..... | SW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | Showery ..... | Alexander Watt. |
| Donaghadee | 29.01 | 736.8 | 29.05 | 737.9 | 45 | 7.2 | ..... | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | J. Mac Gowan. |
| Dover | 29.43 | 747.5 | 29.45 | 748.0 | 46 | 7.8 | ..... | SW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | J. Costello. |
| Falmouth, Observatory | 29.05 | 737.9 | 29.27 | 743.4 | 52.2 | 11.2 | ..... | WSW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.62 | 701.5 | 29.94 | 760.5 | 76.4 | 24.7 | ..... | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 87 | 30.6 | ..... | E? | ..... | ..... | 0? | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's college | ..... | ..... | 29.00 | 736.6 | 50 | 10.0 | ..... | SW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 29.98 | 761.5 | 30.03 | 762.8 | 67.4 | 19.7 | ..... | W | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.94 | 760.5 | 30.14 | 765.5 | 49.7 | 9.8 | ..... | ESE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. [O. |
| Great Yarmouth | 29.47 | 748.5 | 29.47 | 748.5 | 45 | 7.2 | ..... | SSE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Foggy ..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.25 | 742.9 | 29.42 | 747.2 | 48.3 | 9.1 | ..... | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | The staff, for G.B. Airy. |
| Guernsey | 29.14 | 740.1 | 29.37 | 746.0 | 48 | 8.9 | ..... | SSW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | Blank | Blank | D. clouds..... | Dr. S.E.Hoskins, F.R.S. |
| Helston | 29.36 | 745.7 | 29.43 | 747.5 | 55 | 12.8 | ..... | SW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0.20 | 5.1 | Fine..... | M. P. Moyle. |
| Holyhead | 28.88 | 733.5 | 28.94 | 735.1 | 45 | 7.2 | ..... | SSW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | John Tilston. |
| Jersey | 29.13 | 739.9 | 29.42 | 747.2 | 48.3 | 9.1 | ..... | S | ..... | ..... | 5 | ..... | 10 | ..... | ..... | Blank | Blank | Gloomy..... | J. Fisher. |
| Kew, Observatory | 29.38 | 746.2 | 29.41 | 747.0 | 48.7 | 9.3 | ..... | S | 25 | 11.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | The Meteorological Of. |
| Leicester, Museum | 29.05 | 737.9 | 29.30 | 744.2 | 49.2 | 9.7 | ..... | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.90 | 759.4 | 29.98 | 761.5 | 64 | 17.8 | ..... | NW | ..... | ..... | 2 | ..... | 3k | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.09 | 738.9 | 29.18 | 741.2 | 50 | 10.0 | ..... | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.15 | 765.8 | 67.5 | 19.7 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 29.11 | 739.4 | 29.30 | 744.2 | 49.0 | 9.4 | ..... | S | ..... | ..... | 6 | ..... | 10d | ..... | SSE | 0.115 | 2.92 | Raining ..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 28.73 | 729.7 | 29.25 | 742.9 | 45.9 | 7.7 | ..... | SSE | ..... | ..... | 5–6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.95 | 760.7 | 47 | 8.3 | ..... | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | H. E. Bellamy. |
| Plymouth | 29.20 | 741.7 | 29.27 | 743.4 | 52.5 | 11.4 | ..... | SSW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds.... | John Merrifield. |
| Roche's Point | 29.04 | 737.6 | 29.11 | 739.4 | 50 | 10.0 | ..... | NW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | Wm. Kennedy, |
| Saint Ann's Head | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 47 | 8.3 | ..... | SSE | 28 | 12.5 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | Rev C.Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.62 | 752.3 | 29.69 | 754.1 | 48.8 | 9.3 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | W. H.Lyne. |
| Sheffield | 29.02 | 737.1 | 29.29 | 744.0 | 48.5 | 9.2 | ..... | S | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.80 | 7.6 | Raining..... | W. F. Cooper. |
| Silloth Rectory | 29.09 | 738.9 | 29.12 | 739.6 | 50.5 | 10.3 | 72 | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.014 | 0.36 | Overcast..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 28.80 | 731.5 | 29.10 | 739.1 | 47.8 | 8.8 | ..... | SE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling.... | Rev. S. J. Perry. |
| Straitfield, Turgiss | 29.14 | 740.1 | 29.36 | 745.7 | 47.6 | 8.8 | ..... | S | ..... | ..... | 3–4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | C. H. Griffith, F. M. S. |
| Thurso | 29.14 | 740.1 | 29.21 | 741.9 | 50 | 10.0 | ..... | SSE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Trotter. |
| Truro, Royal Institution | 29.18 | 741.2 | 29.23 | 742.4 | 56 | 13.3 | ..... | SW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | 29.09 | 738.9 | 29.11 | 739.4 | 50.3 | 10.2 | ..... | SW | 17 | 7.6 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | The Meteorological Of. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.97 | 761.2 | 30.01 | 762.2 | 70.7 | 21.5 | 65 | WNW | 10 | 4.5 | ..... | 2 | 4 | ..... | ..... | 0 | 0 | Fine..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania). | ..... | ..... | 29.94 | 760.5 | 68.0 | 20.0 | 83 | SE | ..... | ..... | 2 | ..... | 6k | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.21 | 741.9 | 52.0 | 11.1 | ..... | SW | ..... | ..... | 3 | ..... | 10k | ..... | ..... | 0.01 | 0.3 | Cloudy ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.87 | 758.7 | 30.06 | 765.5 | 78.5 | 25.8 | 68 | ESE | 16.0 | 7.2 | ..... | 1 | 4 | ..... | ESE | 0.05 | 1.3 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 29.94 | 760.5 | 30.03 | 762.7 | 72.2 | 22.3 | 53 | NNE | 9 | 4.0 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | R. L. J. Ellery. |
| Monach Lt-house, (Hebrides) | ..... | ..... | 29.04 | 737.6 | 45 | 7.2 | ..... | S | ..... | ..... | 4 | 10 | 0 | ..... | ..... | 0.3 | 7.6 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.35 | 745.5 | 42 | 5.6 | ..... | SSE | ..... | ..... | 7 | 5 | 7 | SE | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| BRITISH MARINE SERIES. VESSELS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Upper. 0–10. | Clouds. Amount. Low'r. 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 44′, E. 29° 31′ | ..... | ..... | 29.79‡ | 756.7‡ | 55.2 | 12.9 | ..... | NNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda, N. 46° 48′, W. 7° 40′ | ..... | ..... | 29.40‡ | 746.7‡ | 54.5 | 12.5 | ..... | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Capt. B. Boyes. |
| Barque Belle-Isle, N. 46° 19′, W. 19° 32′ | ..... | ..... | 29.20‡ | 741.7‡ | 55 | 12.8 | ..... | W | ..... | ..... | 9 | ..... | 8 | ..... | ..... | 8 | WNW | Showery..... | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra, N. °49 09′ W. 10° 08′ | ..... | ..... | 29.22‡ | 742.2‡ | 54.2 | 12.3 | ..... | S | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina, N. 11° 55′, W. 58° 10′ | ..... | ..... | 29.97 | 761.2 | 81 | 27.2 | ..... | E | ..... | ..... | 4 | ..... | 5 | S | ..... | 2 | E | D. clouds..... | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W.R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.27 | 667.2 | 29.99 | 761.7 | 66.2 | 19.0 | ..... | Calm | ..... | ..... | 0 | 10s | ..... | ..... | ..... | 0 | 0 | ..... | Federico Maison |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.6 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.78 | 756.4 | 29.83 | 757.6 | 45.0 | 7.2 | 82 | SSE. | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 29.67 | 753.5 | 29.69 | 754.0 | 51.3 | 10.7 | 56 | SE | ..... | ..... | 6 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.67 | 753.5 | 29.71 | 754.6 | 18.3 | — 7.6 | 75 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 29.10 | 739.2 | 29.14 | 740.1 | 46.8 | 8.2 | 82 | SE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.53 | 750.0 | 29.70 | 754.3 | 50.0 | 10.0 | 92 | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.06 | 738.1 | 29.61 | 752.1 | 50.4 | 10.2 | 95 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.059 | 1.5 | Raining | Collignon, Director. |
| Amiens, Normal School | 29.54 | 750.2 | 29.65 | 753.0 | 55.0 | 12.8 | 75 | S | ..... | ..... | 3 | ..... | 8 | ..... | NE | 0 | 0 | Very cloudy | Bonvallet, Director. |
| Avignon, Normal School | 29.81 | 757.1 | 29.89 | 759.1 | 63.5 | 17.5 | 47 | SW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | M. Giraud, Director. |
| Bar-sur-Seine | 29.17 | 741.0 | 29.72 | 755.0 | 54.5 | 12.5 | 59 | S | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0 | 0 | Covered | C. Saillard, Director. |
| Beauvais, Normal School | 29.36 | 745.7 | 29.60 | 751.9 | 54.5 | 12.5 | 61 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.030 | 0.75 | Covered | Frere Eugene Marie, Dir |
| Besançon, Normal School | 28.91 | 734.2 | 29.79 | 756.6 | 58.1 | 14.5 | 38 | SW | ..... | ..... | 1 | ..... | 2 | ..... | SW | 0 | 0 | Slightly cl'dy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.94 | 735.0 | 29.84 | 758.0 | 59.4 | 15.2 | 41 | SE | ..... | ..... | 3 | ..... | 5cn | S | SE | 0 | 0 | Cloudy | M. Marlot, Director. |
| Bourges, Normal School | 29.19 | 741.3 | 29.73 | 755.1 | 56.8 | 13.8 | 57 | SW | ..... | ..... | 1 | ..... | s | SW | SW | 0 | 0 | ..... | A. Waquet, Director |
| Brest, Naval Observatory | 29.11 | 739.4 | 29.35 | 745.5 | 57.6 | 14.2 | 82 | SW | ..... | ..... | 3 | ..... | 10 | ..... | SW | 0.217 | 5.50 | ..... | M. de Rermaree, Director |
| Carcassonne, Normal School | 29.41 | 746.9 | 29.81 | 757.1 | 65.8 | 18.8 | 39 | NNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | September, Director. |
| Caen, Normal School | 29.40 | 746.8 | 29.44 | 747.7 | 51.8 | 11 | 73 | SE | ..... | ..... | 6 | ..... | 8 | ..... | SSW | 0.024 | 0.6 | Very cloudy | M. Lair, Director. |
| Chartres, Normal School | 29.02 | 737.1 | 29.58 | 751.3 | 51.8 | 11 | 95 | SE | ..... | ..... | 1 | ..... | 10 | ..... | N | 0.28 | 7. | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.43 | 747.6 | 29.75 | 755.7 | 50.7 | 10.4 | 74 | WSW | ..... | ..... | 2 | ..... | 8 | SW | SW | ..... | ..... | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.39 | 721.1 | 29.72 | 754.9 | 57.6 | 14.2 | 47 | S | ..... | ..... | 1 | ..... | 8 | ..... | SW | 0 | 0 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.89 | 733.7 | 29.74 | 755.4 | 52.2 | 11.2 | 59 | W | ..... | ..... | 1 | ..... | 10 | ..... | W | 0 | 0 | Covered | Dr. Coulet, Director. |
| Commune de Gréasque* | 28.79 | 731.3 | 29.93 | 760.3 | 58.8 | 14.9 | 64 | NW | ..... | ..... | 3 | ..... | 5 | ..... | NW | 0 | 0 | ⅜ covered | M. Kina, Director. |
| Grenoble, Normal School | 29.02 | 737.2 | 29.78 | 756.4 | 59.0 | 15.0 | 50 | N | ..... | ..... | 1 | ..... | 5ks;n | ..... | W | 0 | 0 | Cloudy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.45 | 748.0 | 29.67 | 753.5 | 49.3 | 9.6 | 95 | SW | ..... | ..... | 3 | ..... | 10 | ..... | SW | 0 | 0 | Covered | Mouillot, Director |
| Le Mans, Normal School | 29.30 | 744.3 | 29.61 | 752.0 | 52.9 | 11.6 | 86 | S | ..... | ..... | 4 | ..... | 8 | ..... | S | 0.012 | 0.3 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.92 | 734.5 | 29.84 | 757.9 | 58.5 | 14.7 | 52 | SSW | ..... | ..... | 2 | 5c | ..... | ..... | W | 0 | 0 | Cloudy | Baudry, Director. |
| Lorient, Naval Observatory | 29.38 | 746.2 | 29.48 | 748.7 | 52.9 | 11.6 | 90 | SSW | ..... | ..... | 6 | ..... | ..... | ..... | ..... | 0.236 | 6.00 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Marseilles, Observatory | ..... | ..... | 29.89 | 759.2 | 61.3 | 16.3 | 47 | WSW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Slightly cl'dy | The Staff. |
| Mirecourt, Normal School | 28.72 | 729.4 | 29.74 | 755.4 | 56.5 | 13.6 | 43 | SSW | ..... | ..... | 3 | ..... | 10 | ..... | NE | 0 | 0 | Covered | M. Barbier, Director. |
| Nismes, Normal School | 29.66 | 753.4 | 29.86 | 758.5 | 65.5 | 18.6 | 47 | S | ..... | ..... | 2 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 28.80 | 731.5 | 29.85 | 758.2 | 60.8 | 16 | 41 | NW | ..... | ..... | 1 | ..... | ..... | NW | NW | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.86 | 631.5 | ..... | ..... | 33.4 | 0.8 | 86 | SW | ..... | ..... | 4 | ..... | 10 | ..... | NW | 0 | 0 | Covered | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.68 | 753.8 | 29.71 | 754.6 | 54.7 | 12.6 | 79 | SSW | ..... | ..... | 3 | ..... | 10 | SSW | SSW | 0.24 | 6. | Raining | Lt. Decante, Director. |
| Rouen, Normal School | 29.49 | 749.0 | 29.58 | 751.2 | 50.9 | 10.5 | 77 | S | ..... | ..... | 1 | ..... | 10 | ..... | SW | 0.024 | 0.6 | Covered | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.39 | 746.4 | 29.42 | 747.2 | 50.0 | 10.0 | 86 | SSW | ..... | ..... | 5 | ..... | 8 | SSW | SSW | 0.082 | 2.08 | Raining | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.49 | 749.1 | 29.66 | 753.3 | 54.1 | 12.3 | 61 | SSW | ..... | ..... | 3 | ..... | 10 | ..... | SSW;SW | 0.012 | 0.3 | Covered | E. Renou, Director. |
| Tarbes, Normal School | 28.80 | 731.5 | 29.88 | 758.9 | 53.6 | 12 | 65 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | T. Huguet, Director. |
| Toulouse, Observatory | 29.10 | 739.2 | 29.82 | 757.4 | 62.8 | 17.1 | 61 | SSE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | M. Mercadier Julier. |
| Versailles Observatory | 29.15 | 740.4 | 29.64 | 752.9 | 52.5 | 11.4 | 61 | SW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.005 | 0.13 | ..... | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.06 | 738.2 | 29.76 | 756.0 | 62.6 | 17 | 74 | SE | ..... | ..... | 3 | ..... | 8 | ..... | N | 0 | 0 | Very cloudy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.84 | 758.0 | 29.87 | 758.7 | 78.8 | 26 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.28 | 7. | ..... | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 29.17 | 740.9 | 29.77 | 756.1 | 62.2 | 16.8 | 32 | S | ..... | ..... | 3 | ..... | 4 | ..... | SW | 0 | 0 | Cloudy | Mr. Jays. |
| Mont-Louis | 24.67 | 626.5 | 29.98 | 761.5 | 46.8 | 8.2 | 60 | SW | 31.8 | 14.2 | ..... | ..... | 2 | ..... | W | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.90 | 759.4 | 61.2 | 16.2 | 67 | WNW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | Fair | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.37 | 746.0 | ..... | ..... | 52.9 | 11.6 | 64 | SSW | ..... | ..... | 3 | ..... | 10 | ..... | SSW | 0.012 | 0.3 | ..... | Marié Davy, Director. |
| Perpignan | 29.73 | 755.1 | 29.84 | 757.8 | 60.8 | 16.0 | 72 | SE | 16.8 | 7.5 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.28 | 566.0 | ..... | ..... | 32.7 | 0.4 | ..... | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | Gen'l de Nansouty. |
| Tours | 29.45 | 748.0 | 29.65 | 753.0 | 55.0 | 12.8 | 59 | SSW | ..... | ..... | 6 | ..... | 10 | ..... | WSW | 0.051 | 1.3 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 29.81 | 757.1 | 29.84 | 757.8 | 63.0 | 17.2 | 94 | ENE | 7.2 | 3.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a.m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:58 p.m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–1 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.96 | 735.6 | 29.80 | 756.8 | 53.6 | 12.0 | 47 | E | | | 4 | | 6 | W | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.65 | 753.1 | 29.82 | 757.5 | 48.4 | 9.1 | 66 | S | | | 1 | | 10 | | | | | | |
| Breslau | 29.34 | 745.2 | 29.87 | 758.6 | 49.8 | 9.9 | 62 | ESE | | | 3 | | 9 | | | | | Raining | Prof. Arndt. |
| Carlsruhe | 29.30 | 744.3 | 29.72 | 755.0 | 57.9 | 14.4 | 40 | S | | | 1 | | 1 | S | | Blank | Blank | | Royal University Obs'y |
| Cassel | 29.08 | 738.7 | 29.69 | 754.0 | 54.9 | 12.7 | 56 | SE | | | 2 | | 7 | SW | | 0 | 0 | | Albert Senz. |
| Crefeld | 29.50 | 749.4 | 29.67 | 753.5 | 59.9 | 15.5 | 48 | S | | | 2 | | 9 | | | 0.042 | 1.08 | Raining | Dr. H. Möhl. |
| Emden | | | | | | | | | | | | | | | | 0.04 | 1. | | Director Lose. |
| Frankfort on the Main | 29.39 | 746.4 | 29.75 | 755.6 | 60.4 | 15.8 | | SSW | | | 2 | | 4 | | | | | | Prof. Prestel. |
| Freienwalde on the Oder | | | | | | | | | | | | | 8 | | | Inap. | Inap. | | Physical Society. |
| Friedrichshafen | 28.36 | 720.4 | 29.79 | 756.7 | 52.0 | 11.1 | 50 | S | | | 2 | | 4 | SSW | | 0 | 0 | | Assmann., M. D. |
| Hamburg | 29.67 | 753.5 | 29.74 | 755.3 | 50.7 | 10.4 | 69 | SE | | | 3 | | 9k | | | 0 | 0 | | M. Wilhelm. |
| Kiel | 29.72 | 754.9 | 29.74 | 755.4 | 50.9 | 10.5 | 78 | SE | | | 1 | | 0 | | | 0 | 0 | Light haze. | Captain F. Hegemann. |
| Königsberg, (Prussia) | 29.87 | 758.8 | 29.96 | 760.9 | 49.8 | 9.9 | 47 | E | | | 2 | | 6 | | | 0 | 0 | | Prof. G. Karsten. |
| Köslin | | | 29.82 | 757.4 | 47.3 | 8.5 | | Calm | | | 0 | | 4 | | | 0 | 0 | | Prof. E. Luther. |
| Leipsic, Observatory | 29.37 | 746.0 | 29.79 | 756.7 | 55.8 | 12.1 | 57 | NW | | | 1 | | 4 | W | | 0 | 0 | | H. Müller. |
| Memel, Naval School | 29.95 | 760.7 | 30.00 | 761.9 | 46.0 | 7.8 | 61 | S | | | 2 | | 10ck | | | 0.001 | 0.1 | Hazy | Prof. Bruhns, Privy Counselor. |
| Neufahrwasser | 29.91 | 759.7 | 29.93 | 760.1 | 44.8 | 7.1 | 74 | E | | | 1 | | 10 | | | | | | Skalweit. |
| Posen | 29.59 | 751.5 | 29.88 | 758.9 | 47.8 | 8.8 | 64 | ESE | | | 5 | | 10 | | | 0 | 0 | | A. Lothes. |
| Strassburg (in Alsace) | 29.22 | 742.1 | 29.76 | 755.8 | 59.4 | 15.2 | 28 | S | | | 4 | | 4 | SW | | 0.059 | 1.5 | | Dr. Magener. |
| Stuttgart | 28.80 | 731.5 | 29.72 | 755.0 | 58.1 | 14.5 | 34 | S | | | 1 | | 8 | E | | 0 | 0 | | Imp. University Observatory. |
| Treves, (Trier) | 29.16 | 740.7 | 29.68 | 753.8 | 58.3 | 14.6 | 38 | SW | | | 6 | | 10 | | | 0 | 0 | | Prof. Schoder. |
| Weissenburg, (Bavaria) | 28.30 | 718.7 | 29.80 | 757.0 | 52.5 | 11.4 | 37 | W | 2 | 1 | | 7ck | 0 | W | | 0 | 0 | | Prof. Flesch. |
| Wustrow, Naval School | 29.78 | 756.3 | 29.80 | 756.9 | 48.9 | 9.4 | 67 | ENE | | | 1 | | 10ks | | | 0 | 0 | Light fog | Dr. Van Bebber. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | E. Schütz, Dir. |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.45 | 745.4 | 29.74 | 755.3 | 62.8 | 17.1 | | SW | | | 3.5 | | | | | | | Covered | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the cooperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.79 | 756.6 | 29.84 | 758.0 | 83.3 | 28.5 | 52 | WSW | 12 | 5.4 | | | 2 | | | 0 | 0 | D. clouds | |
| Deesa | 29.24 | 742.7 | 29.70 | 754.4 | 94.3 | 34.6 | 17 | WSW | 5.6 | 2.5 | | | 5 | SW | | 0 | 0 | D. clouds | |
| Bombay | 29.74 | 755.3 | 29.77 | 756.2 | 82.3 | 27.9 | 81 | WNW | 10 | 4.5 | | | 7 | W | | 0 | 0 | D. clouds | |
| Poona | | | | | | | | | | | | | | | | | | | |
| Lahore | 28.85 | 732.8 | 29.56 | 750.9 | 97.6 | 36.4 | 18 | Calm | 2.8 | 1.2 | | | 4 | | | | | | |
| Belgaum | 27.26 | 692.3 | 29.76 | 755.9 | 81.5 | 27.5 | 67 | W | 15 | 6.7 | | | 2 | E | E | 0 | 0 | | |
| Roorkee | 28.73 | 729.8 | 29.60 | 751.8 | 95.9 | 35.5 | 13 | NW | 2.0 | 0.9 | | | 6 | | | 0 | 0 | D. clouds | |
| Agra | 29.08 | 738.7 | 29.62 | 752.4 | 102.1 | 38.9 | 18 | W | | | | | | | | 0 | 0 | D. clouds | |
| Nagpur | 28.61 | 726.6 | 29.60 | 752.0 | 100.7 | 38.2 | 9 | Calm | 3 | 1.3 | | | 0 | | | 0 | 0 | | |
| Lucknow | 29.28 | 743.7 | 29.64 | 752.9 | 98.1 | 36.7 | 8 | NNW | 1.7 | 0.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.34 | 745.2 | 29.64 | 752.8 | 96.6 | 35.9 | 26 | Calm | 1.3 | 0.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.46 | 748.2 | 29.63 | 752.7 | 95.8 | 35.4 | 23 | Calm | 0.1 | 0.04 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.68 | 703.1 | 29.62 | 752.4 | 94.6 | 34.8 | 19 | W | 9.4 | 4.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.62 | 752.4 | 29.70 | 754.4 | 93.6 | 34.2 | 35 | S | 5.0 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.67 | 753.7 | 29.69 | 754.2 | 87.3 | 30.7 | 35 | SSW | 5.0 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.26 | 743.2 | 29.64 | 752.7 | 92.8 | 33.8 | 25 | Calm | 4.0 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.65 | 753.0 | 29.74 | 755.4 | 83.1 | 28.4 | 86 | Calm | 6.1 | 2.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Sibsagar | 29.37 | 746.0 | 29.70 | 754.5 | 82.0 | 27.8 | 66 | ENE | 1.6 | 0.7 | | | 0 | | | 0 | 0 | Misty | |
| Jubbulpore | 28.32 | 719.2 | 29.63 | 752.6 | 97.5 | 36.4 | 19 | Calm | 1.4 | 0.6 | | | 0 | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.51 | 749.6 | 29.93 | 760.1 | 53.1 | 11.7 | 71 | E | 1.3 | 0.6 | ..... | ..... | 10 | .. ..... | ..... | 0.067 | 1.7 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.33 | 745.0 | 29.85 | 758.2 | 58.3 | 14.6 | 54 | NW | ..... | ..... | 2 | ..... | 5 | SW | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.76 | 755.8 | 29.87 | 758.6 | 59.7 | 15.4 | 59 | SE | 6.9 | 3.1 | ..... | ..... | 7 | W | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.93 | 734.7 | 29.83 | 757.6 | 57.2 | 14.0 | 51 | NW | 4.9 | 2.2 | ..... | ..... | 5 | NNW | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.70 | 754.4 | 29.89 | 759.2 | 58.1 | 14.5 | 56 | SE | 11.2 | 5.0 | ..... | ..... | 4 | SE | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.93 | 709.3 | 29.84 | 757.9 | 53.4 | 11.9 | 51 | WNW | ..... | ..... | 2 | ..... | 2 | W | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.84 | 758.0 | 29.89 | 759.2 | 54.9 | 12.7 | 64 | NE | 13.0 | 5.8 | ..... | ..... | 5 | W | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.66 | 753.3 | 29.91 | 759.8 | 60.4 | 15.8 | 57 | S | ..... | ..... | 2 | ..... | 9 | SW | ..... | 0 | 0 | ..... | Cav. F. Meucci |
| Leghorn | 29.82 | 757.4 | 29.91 | 759.7 | 61.0 | 16.1 | 60 | WSW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 29.76 | 755.8 | 29.93 | 760.3 | 62.4 | 16.9 | 58 | W | 5.6 | 2.5 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.65 | 753.1 | 29.90 | 759.5 | 57.9 | 14.4 | 53 | NNE | 18.6 | 8.3 | ..... | ..... | 5 | N | ..... | 0.020 | 0.5 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.06 | 738.0 | 29.94 | 760.4 | 59.4 | 15.2 | 72 | NW | 7.4 | 3.3 | ..... | ..... | 2 | ..... | ..... | 0.028 | 0.7 | ..... | Prof. D. Conti. |
| Cagliari | 29.78 | 756.3 | 29.97 | 761.2 | 61.3 | 16.3 | 38 | W | ..... | ..... | 2 | ..... | 2 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.75 | 755.6 | 30.00 | 762.0 | 59.9 | 15.5 | 59 | N | 11.2 | 5.0 | ..... | ..... | 2 | N | ..... | 0.205 | 5.2 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.93 | 760.2 | 30.00 | 762.0 | 62.2 | 16.8 | 59 | W | 6.3 | 2.8 | ..... | ..... | 4 | W | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.41 | 747.1 | 29.97 | 761.2 | 60.3 | 15.7 | 65 | SSE | 3.1 | 1.4 | ..... | ..... | 2 | ..... | ..... | 1.854 | 47.1 | ..... .. ... | Prof. F. Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 29.84 | 757.9 | 29.86 | 758.4 | 58.9 | 14.9 | 83 | W | 1.0 | 0.4 | ..... | ..... | 10s | ..... | ..... | 0.225 | 5.71 | Cloudy..... | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.63 | 752.6 | 29.83 | 757.7 | 65.9 | 18.8 | 84 | S | 3.3 | 1.5 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy..... | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.80 | 756.9 | 29.86 | 758.4 | 56.4 | 13.6 | 91 | S | 4.9 | 2.2 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy..... | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bârcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.08 | 637.0 | 30.17 | 766.4 | 50.9 | 10.5 | 41 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy..... | Prof. L. Perez. |
| Leon | 24.44 | 621.0 | 30.12 | 765.2 | 60.1 | 15.6 | 65 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy..... | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.14 | 587.9 | 30.21 | 767.2 | 51.8 | 11.0 | 45 | Calm | 0 | 0 | .. ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine... ..... | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 55.2 | 12.9 | 47 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... ... | 0 | 0 | Clear..... | M. V. de Leon, M. E. |
| Tlacotalpam | 30.00 | 762.1 | 30.02 | 762.4 | 74.3 | 23.5 | 85 | S | ..... | ..... | 2 | 0 | 3 | ..... | S | 0 | 0 | Foggy ..... | M. M. Châzaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.47 | 596.0 | 30.23 | 767.8 | 42.8 | 6.0 | 57 | N | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. |
| Colima | 28.39 | 721.2 | 30.03 | 762.7 | 77.5 | 25.3 | 61 | NE | ..... | ..... | 2 | ..... | 10 | ..... .. | S | 0 | 0 | Covered.... | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guer |

NOTE.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.59 | 751.6 | 29.59 | 751.6 | 51.6 | 10.9 | ..... | S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.59 | 751.5 | 29.64 | 752.9 | 52.9 | 11.6 | ..... | S | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.57 | 751.0 | 29.57 | 751.0 | 49.8 | 9.9 | ..... | SSE | ..... | ... .. | 4 | ..... | ..... | ..... | ..... | 0.043 | 1.1 | ..... | |
| Hellevoetsluis | 29.60 | 751.7 | 29.60 | 751.7 | 50.9 | 10.5 | 81 | S | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.59 | 751.5 | 29.63 | 752.6 | 51.6 | 10.9 | 75 | SSW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.020 | 0.5 | Very cloudy | H. v. d. Brink. |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.60 | 751.8 | 29.65 | 753.2 | 50.0 | 10.0 | 62 | S | 14.1 | 6.3 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.69 | 754.0 | 29.72 | 755.0 | 46.4 | 8.0 | 64 | NW | 4 | 2 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.71 | 754.7 | 29.86 | 758.5 | 34.7 | 1.5 | 96 | S | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.051 | 1.2 | ..... | |
| Tromsö | 29.75 | 755.1 | 29.77 | 756.2 | 38.8 | 3.8 | 64 | SW | 7 | 3 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.91 | 759.8 | 30.11 | 764.7 | 63.0 | 17.2 | 92 | W | 21.0 | 9.4 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.00 | 736.6 | 30.04 | 763.0 | 54.5 | 12.5 | 77 | SSW | 9.8 | 4.4 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.14 | 765.6 | 30.23 | 767.8 | 66 2 | 19.0 | 64 | SW | 6.9 | 3.1 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.67 | 753.6 | 30.03 | 762.8 | 56.5 | 13.6 | 90 | SSW | 23.7 | 10.6 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.11 | 764.7 | 30.18 | 766.5 | 64.4 | 18.0 | 82 | W | 11.9 | 5.3 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa. Com'd.t. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| Duque da Terceira, Santiago, Cape Verd I. | ..... | ..... | 30.04 | 763.0 | 73.4 | 23 | ..... | NE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 3 | ..... | D. clouds..... | C.C.da Fonseca Ferreira, Comd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, St. Thomas, Gulf of Guinea | ..... | ..... | 29.88 | 759.0 | 85.1 | 29.5 | ..... | ..... | ..... | ..... | 3 | ..... | 7 | ..... | SE | 1 | SE | D. clouds..... | A.J.de Mattos, Com'd't, |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Rio Grande, Senegambia | ..... | ..... | 29.91 | 759.6 | 91.8 | 33.2 | ..... | SSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | A. Ferreira, 2d Lt. |
| Sá da Bandeira, Ambrizette, S.7° 13′, E. 12°52′ | ..... | ..... | 29.76 | 756.0 | 83.7 | 28.7 | ..... | SW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 3 | SW | D. clouds..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 29.89 | 759.2 | 73.6 | 23.1 | ..... | N | ..... | ..... | 2 | ..... | 6 | ..... | N | 1 | N | D. clouds..... | J. M. T. Guimaraes, Com'd't. |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.48 | 748.9 | 29.91 | 759.7 | 48.9 | 9.4 | 55 | SE | 13 | 6 | ..... | ..... | 10ks;n | ..... | ..... | ..... | ..... | Light rain... | Astronomical Obs. |
| Wilna | 29.65 | 753.2 | 30.08 | 764.1 | 42.8 | 6.0 | 66 | SE | 4 | 2 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | Heavy clouds... | Astronomical Obs. |
| Dorpat | 29.88 | 758.9 | 30.13 | 765.2 | 43.2 | 6.2 | 67 | SE | 4 | 2 | ..... | ..... | 3c;ck | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.12 | 765.1 | 30.14 | 765.5 | 42.6 | 5.9 | 57 | SSW | 9 | 4 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.26 | 743.2 | 29.93 | 760.1 | 32.7 | 0.4 | 100 | ENE | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing..... | Physical Cabinet. |
| Nikolaiev | 29.73 | 755.1 | 29.80 | 756.9 | 50.5 | 10.3 | 78 | ESE | 18 | 8 | ..... | ..... | 10kn | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.78 | 756.3 | 29.80 | 756.8 | 46.8 | 8.2 | 83 | ENE | 9 | 4 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.75 | 755.7 | 30.33 | 770.3 | 35.2 | 1.8 | 67 | S | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.78 | 756 5 | 29.99 | 761.7 | 54.7 | 12.6 | 39 | ESE | 31 | 14 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.91 | 759.7 | 29.93 | 760.2 | 34.2 | 1.2 | 89 | SW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.58 | 726.0 | 29.97 | 761.2 | 67.1 | 19.5 | 51 | SE | 22 | 10 | ..... | ..... | 5n | ..... | ..... | ..... | ..... | Heavy clouds.... | Physical Observatory. |
| Astrakhan | 30.34 | 770.5 | 30.25 | 768.4 | 45.3 | 7.4 | 48 | E | 13 | 6 | ..... | ..... | 1s | ..... | ..... | ..... | ..... | Light clouds | Capt. Wisganow. |
| Krotkowo* | 29.93 | 760.1 | 30.42 | 772.6 | 43.2 | 6.2 | 55 | S | 2 | 1 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 30.06 | 763.5 | 30.34 | 770.6 | 39.2 | 4.0 | 61 | S | 4 | 2 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.34 | 745.2 | 30.34 | 770.7 | 35.8 | 2.1 | 66 | SW | 7 | 3 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.86 | 758.4 | 30.09 | 764.3 | 59.2 | 15.1 | 36 | E | 20 | 9 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.56 | 725.5 | 30.13 | 765.3 | 59.7 | 15.4 | 42 | N | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.70 | 754.4 | 30.24 | 768.2 | 49.67 | 9.87 | 46 | NE | 9 | 4 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeniseisk | 30.16 | 766.0 | 30.47 | 774.0 | 15.1 | — 9.4 | 37 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking, (China) | 29.88 | 758.9 | 30.02 | 762.5 | 46.8 | 8.2 | 70 | SE | 11 | 5 | ..... | ..... | 8n | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.89 | 759.1 | 29.98 | 761.6 | 31.5 | — 0.3 | 98 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.74 | 755.4 | 29.85 | 758.1 | 59.5 | 15.3 | 70 | S | 2.9 | 1.28 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | Antonio Rave, Directon. |
| Bilbao, Met. Obs'y | 29.69 | 754.0 | 29.74 | 755.4 | 62.6 | 17.0 | 79 | S | 3.0 | 1.36 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | Prof. Manuel de Navera |
| Burgos, Met. Obs'y | 26.87 | 682.6 | ..... | ..... | 52.7 | 11.5 | 53 | SW | 9.7 | 4.32 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | Cloudy..... | Domingo Martin y Perez. |
| Madrid, Royal Oservatory | 27.69 | 703.3 | ..... | ..... | 60.1 | 15.6 | 60 | SW | 24.6 | 11.00 | ..... | 7 | 3 | ..... | ..... | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.76 | 755.9 | 29.91 | 759.6 | 78.8 | 26.0 | 51 | NNE | 8.0 | 1.33 | ..... | 1 | 0 | SE | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.75 | 730.2 | 29.65 | 753.0 | 49.5 | 9.7 | 93 | SSW | 27.3 | 12.2 | ..... | ..... | 10 | ..... | ..... | 0.378 | 9.6 | Raining..... | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.09 | 764.4 | 30.16 | 766.1 | 69.3 | 20.7 | 65 | NNE | 7.8 | 3.5 | ..... | 0 | 5k | ..... | ..... | 0 | 0 | Fair ..... | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.78 | 756 5 | 29.84 | 757.9 | 86.8 | 29.9 | 70 | SE | 6.3 | 2.8 | ..... | 2cs | 2s | E | E | 0 | 0 | Cloudy..... | Federico Faura, S. J. |
| San Fernando, Naval Obs'y. | 29.99 | 761.7 | 30.09 | 764.2 | 61.2 | 16.2 | 76 | W | 4.7 | 2.1 | ..... | 0 | 10 | ..... | W | 0.005 | 0.1 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W I | 29.96 | 760.7 | 30.04 | 763.0 | 77.4 | 25.2 | 90 | NE | 0 | 0 | ..... | 8kn | 7kn | NE | NE | 0.502 | 12.75 | Cloudy ..... | Leonardo de Tejeda, Ch'f Eng'r. |

Note.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,160.6ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.89 | 759.1 | 29.93 | 760.1 | 32.4 | 0.2 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.87 | 758 8 | 29.93 | 760.1 | 35.6 | 2.0 | 89 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.80 | 757.0 | 29.85 | 758.3 | 36.0 | 2.2 | 82 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.024 | 0.6 | ..... | |
| Stockholm | 29.76 | 755.9 | 29.94 | 760.4 | 42.3 | 5.7 | 76 | S | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.83 | 757.7 | 29.89 | 759.2 | 40.6 | 4.8 | 84 | WSW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.83 | 757.6 | 29.90 | 759.5 | 42.1 | 5.6 | 76 | SSW | 6.5 | 2.9 | ..... | ..... | 10 | ..... | SSW | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.37 | 720.7 | 29.79 | 756.6 | 58.8 | 14.9 | 33 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | The Observatory. |
| Zurich | 28.17 | 715.4 | 29.80 | 756.9 | 54.9 | 12.7 | 39 | W | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | Bright | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —3.5 mm.; Thermometer, +4.3 Cent.; Relative Humidity, —25 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,549 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.77 | 756.1 | 48.6 | 9.2 | 86 | N | 11 | 5.0 | ..... | ..... | 10 | ..... | N | 0.315 | 8.0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.29 | 769.3 | 78.8 | 26.0 | ..... | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| Valona | ..... | ..... | 29.97 | 761.3 | 59.4 | 15.2 | ..... | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.091 | 0.23 | Cloudy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.63 | 752.6 | 29.74 | 755.5 | 81.9 | 27.7 | 51 | SW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. C. V. A. Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.71 | 754.6 | 30.04 | 763.0 | 27 | — 2.8 | ..... | SW | 5 | 2.2 | ..... | ..... | 8s | ..... | SW | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 29.89 | 759.2 | 29.95 | 760.7 | 30 | — 1.1 | 83 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 29.92 | 760.0 | 29.96 | 761.0 | 33 | 0.6 | 85 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.78 | 756.4 | 29.98 | 761.5 | 29.5 | — 1.4 | 79 | W | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | 30.00 | 762.0 | 30.05 | 763.3 | 41.1 | 5.1 | 100 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | W. H. Bevis. |
| *Father Point, Quebec | 29.85 | 758.2 | 29.87 | 758.7 | 31 | — 0.6 | 97 | SW | 15 | 6.7 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light snow. | J. McWilliams. |
| Fredericton, N. B | 29.91 | 759.7 | 29.97 | 761.2 | 32.0 | 0.0 | 74 | SE | 2 | 0.9 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Snowing | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.32 | 744.7 | 30.19 | 766.8 | 29 | — 1.7 | 83 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Stewart. |
| Granton, Ontario | 28.93 | 734.8 | 30.09 | 764.3 | 25 | — 3.9 | ..... | W | ..... | ..... | 1 | 2cs | 0 | W | ..... | 0 | 0 | Fine | James Grant. |
| *Halifax, N. S | 29.81 | 757.2 | 29.95 | 760.7 | 32 | 0.0 | 88 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | F. Allison, M. A. |
| Hamilton, Ontario | 29.74 | 755.4 | 30.13 | 765.3 | 30.7 | — 0.7 | 93 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.71 | 754.6 | 30.06 | 763.5 | 26 | — 3.3 | 75 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.94 | 760.5 | 29.98 | 761.5 | 36.2 | 2.5 | 78 | SW | 3 | 1.3 | ..... | 7k | 0 | SW | ..... | 0 | 0 | Cloudy | C. H. Rigby. |
| Moose Factory, Ontario | 29.64 | 752.8 | 29.68 | 753.9 | 25.8 | — 3.7 | 64 | S | ..... | ..... | 2 | 7c | 0 | ..... | ..... | 0 | 0 | Fair | J. R. Nason. |
| *Montreal, Quebec | 29.77 | 756 1 | 29.98 | 761.5 | 28 | — 2.2 | 87 | W | 22 | 9.8 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.31 | 744.5 | 30.04 | 763.0 | 22 | — 5.6 | 86 | SE | 4 | 1.8 | ..... | 2ck | 0 | W | ..... | 0.01 | 0.3 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 29.28 | 743.7 | 30.08 | 764.0 | 24.3 | — 4.3 | 67 | W | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.38 | 746.2 | 30.11 | 764.8 | 26 | — 3.3 | 88 | SW | 10 | 4.5 | ..... | 2k | 0 | W | ..... | 0.07 | 1.8 | Fair | H. Morgan. |
| Port Hastings, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Peter Grant. |
| Port Stanley, Ontario | 29.43 | 747.5 | 30.11 | 764.8 | 30 | — 1.1 | 83 | SW | 6 | 2.7 | ..... | 2ck | 0 | NW | ..... | 0.03 | 0.8 | Clear | M. Payne. |
| *Quebec, Quebec | 29.02 | 752.3 | 29.96 | 761.0 | 26 | — 3.3 | 94 | W | ..... | ..... | 1 | ..... | 10n | ..... | W | 0.03 | 0.8 | Light snow. | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.62 | 749.8 | 30.01 | 762.2 | 18 | — 7.8 | 83 | Calm | 0 | 0 | ..... | ..... | 8s | ..... | NW | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.88 | 758.9 | 29.94 | 760.5 | 31 | — 0.6 | 85 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| St. John, N. B | 29.78 | 756.4 | 29.96 | 761.0 | 29 | — 1.7 | 94 | S | 2 | 0.9 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Overcast | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.28 | 743.7 | 30.04 | 763.0 | 24 | — 4.4 | 89 | S | 8 | 3.6 | ..... | 5cs | 2ks | ..... | ..... | 0 | 0 | Cloudy | K. Stewart. |
| Stayner, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Inap. | Inap. | ..... | R. J. Cole. |
| Stratford, Ontario | 28.70 | 729.0 | 30.07 | 763.8 | 27.2 | — 0.0 | 89 | Calm | 0 | 0 | ..... | 0 | 7s | ..... | ..... | 0 | 0 | Cloudy | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.95 | 760.7 | 29.99 | 761.7 | 39 | 3.9 | 70 | SW | 9 | 4.0 | ..... | 2c | 2ks | SE | SW | 0 | 0 | Fair | T. C. Hill. |
| *Toronto, Ontario | 29.69 | 754.1 | 30.10 | 764.5 | 25 | — 3.9 | 83 | SW | 2 | 0.9 | ..... | 8ck | 0 | NW | ..... | 0.03 | 0.8 | Fair | Magnetic Observatory. |
| Windsor, N. S | 29.86 | 758.4 | 29.96 | 761.0 | 31.5 | — 0.3 | 84 | E | 4 | 1.8 | ..... | ..... | 10nk | ..... | ..... | 0 | 0 | Overcast | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | 29.98 | 761.5 | ..... | ..... | 33.0 | 0.6 | 89 | NE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Overcast | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.87 | 758.7 | 30.11 | 764.8 | 27 | — 2.8 | 70 | NW | 14 | 6.3 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Alpena, Michigan | 29.27 | 743.4 | 29.94 | 760.5 | 31 | — 0.6 | 79 | SW | 4 | 1.8 | ..... | 8ck | 0 | W | ..... | 0 | 0 | Fair | |
| Atlanta, Georgia | 29.02 | 737.1 | 30.21 | 767.3 | 40 | 4.4 | 40 | N | 8 | 3.6 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 30.18 | 766.6 | 30.20 | 767.1 | 29 | — 1.7 | 56 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Augusta, Georgia | 30.07 | 763.8 | 30.26 | 768.6 | 40 | 4.4 | 73 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 30.17 | 766.3 | 30.22 | 767.6 | 37 | 2.8 | 63 | W | 6 | 2.7 | ..... | 5k | 5s | NW | NW | Inap. | Inap. | Cloudy | |
| Barnegat, New Jersey | 30.13 | 765.3 | 30.16 | 766.1 | 30 | — 1.1 | 78 | NW | 12 | 5.4 | ..... | 2k | 0 | NW | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 28.21 | 716.5 | 30.07 | 763.8 | 33 | 0.6 | 69 | NE | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boerne, Texas | 28.50 | 723.9 | 29.78 | 756.4 | 65 | 18.3 | 100 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.23 | 691.6 | 30.19 | 766.8 | 48 | 8.9 | 85 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | W | 0.25 | 6.3 | Cloudy | |
| Boston, Massachusetts | 29.85 | 758.2 | 30.01 | 762.2 | 29 | — 1.7 | 67 | W | 8 | 3.6 | ..... | 5ck | 0 | NW | ..... | Inap. | Inap. | Fair | |
| Brackettville, Texas | 28.85 | 732.8 | 29.86 | 758.4 | 67 | 19.4 | 89 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 28.93 | 734.8 | 29.96 | 761.0 | 32 | 0.0 | 79 | NW | 15 | 6.7 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| Brownsville, Texas | 29.94 | 760.5 | 29.98 | 761.5 | 73 | 22.8 | 81 | SE | 4 | 1.8 | ..... | 0 | 2s | ..... | SE | 0 | 0 | Clear | |
| Buffalo, New York | 29.37 | 746.0 | 30.11 | 764.8 | 25 | — 3.9 | 87 | SW | 3 | 1.3 | ..... | 1cs | 0 | NW | ..... | Inap. | Inap. | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 56 | 13.3 | 24 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Burlington, Vermont | 29.74 | 755.4 | 30.04 | 763.0 | 27 | — 2.8 | 64 | S | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.79 | 756.7 | 30.19 | 766.8 | 47 | 8.3 | 41 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Camp Apache, Arizona | .... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.13 | 638.3 | 29.93 | 760.2 | 54 | 12.2 | 32 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 39 | 3.9 | 38 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.48 | 698.0 | 30.05 | 763.3 | 30 | — 1.1 | 78 | E | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.24 | 768.1 | 30.25 | 768.3 | 43 | 6.1 | 67 | NE | 12 | 5.4 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Cape Henry, Virginia | 30.22 | 767.6 | 30.24 | 768.1 | 38 | 3.3 | 54 | NW | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.22 | 767.6 | 30.24 | 768.1 | 45 | 7.2 | 68 | NE | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Cape May, New Jersey | 30.14 | 765.5 | 30.17 | 766.3 | 34 | 1.1 | 70 | NW | 18 | 8.0 | ..... | 0 | 2s | ..... | NW | Inap. | Inap. | Fair | |
| Castroville, Texas | 29.20 | 741.7 | 29.88 | 758.9 | 69 | 20.6 | 85 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 30.16 | 766.1 | 30.22 | 767.6 | 49 | 9.4 | 51 | NW | 2 | 0.9 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 23.87 | 606.3 | 29.81 | 757.2 | 33 | 0.6 | 100 | N | 28 | 12.5 | ..... | ..... | 10n | ..... | N | 0.40 | 10.2 | Light rain | |
| Chicago, Illinois | 29.35 | 745.5 | 30.06 | 763.5 | 39 | 3.9 | 45 | S | 5 | 2.2 | ..... | 5ck | 0 | SW | ..... | 0 | 0 | Fair | |
| Cincinnati, Ohio | 29.54 | 750.3 | 30.22 | 767.6 | 34 | 1.1 | 61 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cleveland, Ohio | 29.40 | 746.7 | 30.16 | 766.1 | 30 | — 1.1 | 68 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| Coleman City, Texas | 28.14 | 714.7 | 29.76 | 755.9 | 66 | 18.9 | 84 | S | 9 | 4.0 | ..... | 0 | 2ks | ..... | S | 0 | 0 | Fair | |
| Columbus, Ohio | 29.30 | 744.2 | 30.18 | 766.6 | 34 | 1.1 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Concho, Texas | 28.01 | 711.4 | 29.63 | 752.6 | 64 | 17.8 | 68 | SW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.53 | 750.0 | 29.99 | 761.7 | 65 | 18.3 | 84 | SE | 7 | 3.1 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.37 | 746.0 | 30.02 | 762.5 | 40 | 4.4 | 48 | S | 5 | 2.2 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.41 | 645.4 | ..... | ..... | 37 | 2.8 | 63 | Calm | 0 | 0 | ..... | 8c | 0 | NW | ..... | 0 | 0 | Fair | |
| Decatur, Texas | 28.79 | 731.3 | 29.94 | 760.5 | 60 | 15.6 | 65 | SW | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.12 | 739.6 | 29.88 | 758.9 | 65 | 18.3 | 78 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.58 | 624.3 | 29.80 | 756.9 | 43 | 6.1 | 67 | NW | 24 | 10.7 | ..... | ..... | 10n | ..... | NW | 0.02 | 0.5 | Light rain | |
| Des Moines, Iowa | 28.99 | 736.3 | 29.88 | 758.9 | 41 | 5.0 | 57 | SE | 2 | 0.9 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Fair | |
| Detroit, Michigan | 29.41 | 747.0 | 30.11 | 764.8 | 29 | — 1.7 | 78 | SW | 7 | 3.1 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Dodge City, Kansas | 27.09 | 688.1 | 29.36 | 745.7 | 41 | 5.0 | 82 | NW | 12 | 5.4 | ..... | 0 | 1s | ..... | S | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.28 | 743.7 | 30.00 | 762.0 | 37 | 2.8 | 63 | S | 3 | 1.3 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Duluth, Minnesota | 29.19 | 741.4 | 29.88 | 758.9 | 39 | 3.9 | 55 | NW | 2 | 0.9 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.14 | 740.1 | 29.85 | 758.2 | 71 | 21.7 | 80 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.87 | 758.7 | 29.94 | 760.5 | 31 | — 0.6 | 89 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.05 | 1.3 | Cloudy | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 70 | 21.1 | 90 | SE | ..... | ..... | 6 | ..... | 8s | ..... | SE | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.26 | 667.0 | ..... | ..... | 46 | 7.8 | 26 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.38 | 746.2 | 30.13 | 765.3 | 32 | 0.0 | 79 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Escanaba, Michigan | 29.23 | 742.4 | 29.89 | 759.2 | 36 | 2.2 | 45 | SW | 4 | 1.8 | ..... | 10ck | 0 | W | ..... | 0 | 0 | Cloudy | |
| Florence, Arizona | 28.56 | 725.4 | 30.16 | 766.1 | 46 | 7.8 | 33 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Craig, New Mexico | 25.53 | 648.4 | 29.60 | 751.8 | 47 | 8.3 | 27 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.20 | 640.1 | 30.16 | 766.1 | 56 | 13.3 | 17 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.32 | 744.7 | 29.84 | 757.9 | 61 | 16.1 | 55 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort Griffin, Texas | 28.60 | 726.4 | 29.84 | 757.9 | 62 | 16.7 | 88 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.56 | 700.0 | ..... | ..... | 40 | 4.4 | 82 | N | 4 | 1.8 | ..... | 8k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort McKavett, Texas | 27.67 | 702.8 | 29.53 | 750.0 | 65 | 18.3 | 84 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | 29.40 | 746.7 | 29.44 | 747.8 | 30 | — 1.1 | 100 | W | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 28.58 | 725.9 | 29.65 | 753.1 | 64 | 17.8 | 83 | S | 24 | 10.7 | ..... | 0 | 8ks | ..... | S | 0 | 0 | Cloudy | |
| Fort Stevenson, Dakota | 28.27 | 718.6 | ..... | ..... | 30 | — 1.1 | 78 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fredericksburg, Texas | 28.25 | 717.5 | 29.77 | 756.1 | 65 | 18.3 | 94 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 30.04 | 763.0 | 30.08 | 764.0 | 69 | 20.6 | 85 | SE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Graham, Texas | 28.80 | 731.5 | 29.81 | 757.2 | 67 | 19.4 | 84 | SE | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.39 | 746.5 | 30.06 | 763.5 | 37 | 2.8 | 71 | SW | 16 | 7.2 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| Indianapolis, Indiana | 29.34 | 745.2 | 30.15 | 765.8 | 34 | 1.1 | 52 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianola, Texas | 30.01 | 762.2 | 30.04 | 763.0 | 70 | 21.1 | 85 | S | 15 | 6.7 | ..... | 10c | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 28.70 | 729.0 | 29.79 | 756.7 | 65 | 18.3 | 84 | S | 14 | 6.3 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Jacksonville, Florida | 30.24 | 768.1 | 30.26 | 768.6 | 50 | 10.0 | 52 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.33 | 745 0 | 29.96 | 761.0 | 40 | 4.4 | 48 | SE | 8 | 3.6 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Key West, Florida | 30.14 | 765.5 | 30.18 | 766.6 | 66 | 18.9 | 54 | NE | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 30.21 | 767.3 | 30.23 | 767.8 | 39 | 3.9 | 64 | NE | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.24 | 742.7 | 30.29 | 769.4 | 36 | 2.2 | 75 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | |
| La Crosse, Wisconsin | 29.19 | 741.4 | 29.94 | 760.5 | 43 | 6.1 | 51 | S | 10 | 4.5 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| La Mesilla, New Mexico | 26.10 | 662.9 | 30.25 | 768.3 | 41 | 5.0 | 65 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Laredo, Texas | 29.55 | 750.6 | 29.88 | 758.9 | 75 | 23.9 | 56 | SE | 5 | 2.2 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 28.91 | 734.3 | 29.73 | 755.1 | 56 | 13.3 | 46 | S | 15 | 6.7 | ..... | ..... | 10n | ..... | SW | Inap. | Inap. | Light rain | |
| Los Angeles, California | 29.74 | 755.4 | 30.09 | 764.3 | 49.0 | 9.4 | 85 | NE | 2 | 0.9 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.62 | 752.3 | 30.20 | 767.1 | 38 | 3.3 | 63 | SW | 2 | 0.9 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Lynchburg, Virginia | 29.49 | 749.0 | 30.19 | 766.8 | 42 | 5.6 | 57 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Madison, Wisconsin | 28.98 | 736.1 | 29.99 | 761.7 | 39 | 3.9 | 64 | S | 7 | 3.1 | ..... | 10ck | 0 | W | ..... | 0 | 0 | Cloudy | |
| Marquette, Michigan | 29.08 | 738.6 | 29.79 | 756.7 | 41 | 5.0 | 57 | SW | 16 | 7.2 | ..... | 5c | 5s | S | Calm | 0 | 0 | Cloudy | |
| Mason, Texas | 28.32 | 719.3 | 30.04 | 763.0 | 66 | 18.9 | 89 | SE | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| Memphis, Tennessee | 29.85 | 758.2 | 30.18 | 766.6 | 48 | 8.9 | 48 | SE | 8 | 3.6 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.27 | 743 4 | 30.01 | 762.2 | 39 | 3.9 | 64 | SW | 9 | 4.0 | ..... | 8ck | 1s | W | Calm | 0 | 0 | Cloudy | |
| Mobile, Alabama | 30.21 | 767.3 | 30.26 | 768.6 | 46 | 7.8 | 92 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 30.04 | 763.0 | 30.29 | 769.4 | 42 | 5.6 | 82 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Morgantown, West Virginia | 29.10 | 739.1 | 30.19 | 766.8 | 38 | 3.3 | 63 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Mt. Washington, N. H. | 23.48 | 596.4 | 29.84 | 757.9 | 15 | —10.6 | 81 | NW | 42 | 18.8 | ..... | 5ck | 5ks | NW | NW | 0.14 | 3.6 | Cloudy | |
| Nashville, Tennessee | 29.68 | 753.9 | 30.24 | 768.1 | 40 | 4.4 | 65 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 29.98 | 761.5 | 30.10 | 764.5 | 31 | — 0.6 | 63 | NW | 14 | 6.3 | ..... | 2ck | 0 | Calm | ..... | 0 | 0 | Clear | |
| New London, Connecticut | 30.02 | 762.5 | 30.07 | 763.8 | 31 | — 0.6 | 69 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Orleans, Louisiana | 30.14 | 765.5 | 30.20 | 767.1 | 52 | 11.1 | 79 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.98 | 761.5 | 30.04 | 763.0 | 31 | — 0.6 | 58 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New York, New York | 29.97 | 761.2 | 30.16 | 766.1 | 28 | — 2.2 | 67 | NW | 11 | 4.9 | ..... | 0 | 1ks | ..... | Calm | 0 | 0 | Clear | |
| Norfolk, Virginia | 30.19 | 766.8 | 30.25 | 768.3 | 39 | 3.9 | 55 | N | 6 | 2.7 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 26.73 | 678.9 | 29.22 | 742.2 | 49 | 9.4 | 85 | SE | 12 | 5.4 | | 8k | 2s | SE | SE | Inap. | Inap. | Cloudy | |
| Olympia, Washington Ter. | 30.02 | 762.5 | 30.06 | 763.5 | 39.2 | 4.0 | 91 | SW | 1 | 0.4 | | | 10s | | Calm | 0.14 | 3.6 | Cloudy | |
| Omaha, Nebraska | 28.65 | 727.7 | 29.73 | 755.1 | 50 | 10.0 | 65 | SE | 12 | 5.4 | | | 10n | | SE | Inap | Inap. | Light rain | |
| Oswego, New York | 29.78 | 756.4 | 30.12 | 765.0 | 36 | 2.2 | 80 | SW | 5 | 2.2 | | | 10s | | NW | Inap. | Inap. | Cloudy | |
| Pembina, Dakota | 29.26 | 743.2 | 30.13 | 765.3 | 29 | — 1.7 | 89 | NW | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Philadelphia, Pa | 30.12 | 765.0 | 30.18 | 766.6 | 30 | — 1.1 | 68 | NW | 16 | 7.2 | | | 10ks | | NW | Inap. | Inap. | Cloudy | |
| Phœnix, Arizona | 28.87 | 733.3 | 30.72 | 780.3 | 48 | 8.9 | 70 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.45 | 443.2 | 29.66 | 753.4 | 7 | —13.9 | 100 | N | 44 | 19.7 | | | 10s | | N | 0.04 | 1.0 | Cloudy | |
| Pioche, Nevada | 24.09 | 611.9 | 29.86 | 758.4 | 85 | 1.7 | 80 | S | 2 | 0.9 | | 0 | 0 | | | 0.19 | 4.8 | Clear | |
| Pittsburg, Pennsylvania | 29.35 | 745.5 | 30.20 | 767.1 | 32 | 0.0 | 69 | Calm | 0 | 0 | | 0 | 0 | | | 0.01 | 0.3 | Clear | |
| Port Huron, Michigan | 29.39 | 746.5 | 30.08 | 764.0 | 30 | — 1.1 | 78 | SW | 6 | 2.7 | | 0 | 0 | | | 0.03 | 0.8 | Clear | |
| Portland, Maine | 29.90 | 759.4 | 29.95 | 760.7 | 34 | 1.1 | 70 | NW | 6 | 2.7 | | | 10s | | Calm | 0.07 | 2.3 | Cloudy | |
| Portland, Oregon | 30.01 | 762.2 | 30.11 | 764.8 | 48.5 | 9.2 | 89 | NE | 4 | 1.8 | | | 10s | | | 0.16 | 4.1 | Cloudy | |
| Prescott, Arizona | 24.79 | 629.6 | 30.15 | 765.8 | 31 | — 0.6 | 69 | SW | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.02 | 737.1 | 29.84 | 757.9 | 55 | 12.8 | 87 | S | 17 | 7.6 | | 5k | 5s | SE | S | 0 | 0 | Cloudy | |
| Punta Rassa, Florida | 30.22 | 767.6 | 30.24 | 768.1 | 53 | 11.7 | 61 | N | 10 | 4.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Red Bluff, California | 29.72 | 754.9 | 30.08 | 764.0 | 52 | 11.1 | 86 | SE | 1 | 0.4 | | | 10s | | Calm | 0.01 | 0.3 | Cloudy | |
| Rio Grande City, Texas | 29.77 | 756.1 | 29.99 | 761.7 | 70 | 21.1 | 85 | SE | | | 2 | 0 | 5ks | | SE | 0 | 0 | Fair | |
| Rochester, New York | 29.48 | 748.8 | 30.13 | 765.3 | 28 | — 2.2 | 77 | W | 9 | 4.0 | | 5k | 0 | SW | | 0 | 0 | Fair | |
| Roseburg, Oregon | 29.48 | 748.8 | 30.05 | 763.3 | 50.0 | 10.0 | 90 | NW | 3 | 1.3 | | | 10s | | | Inap. | Inap. | Cloudy | |
| Sacramento, California | 29.99 | 761.7 | 30.08 | 764.0 | 50.5 | 10.3 | 90 | Calm | 0 | 0 | | | 10ks | | SE | 0.14 | 3.6 | Cloudy | |
| St. Louis, Missouri | 29.51 | 749 5 | 30.10 | 764.5 | 40 | 4.4 | 32 | S | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| St. Marks, Florida | 30.24 | 768.1 | 30.26 | 768.6 | 39 | 3.9 | 91 | N | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.01 | 736.8 | 29.84 | 757.9 | 41 | 5.0 | 48 | SE | 3 | 1.3 | | 0 | 8s | | NW | 0 | 0 | Fair | |
| Salt Lake City, Utah | 25.72 | 653.3 | 30.05 | 763.3 | 47 | 8.3 | 62 | Calm | 0 | 0 | | | 10ks | | SW | 0.03 | 0.8 | Cloudy | |
| San Antonio, Texas | 29.30 | 744.2 | 29.87 | 758.7 | 71 | 21.7 | 75 | S | 8 | 3.6 | | | 10s | | S | 0 | 0 | Cloudy | |
| San Diego, California | 30.03 | 762.8 | 30.10 | 764.5 | 46 | 7.8 | 92 | NE | 5 | 2.2 | | 0 | 2s | | Calm | 0.02 | 0.5 | Fair | |
| Sandusky, Ohio | 29.46 | 748.3 | 30.16 | 766.1 | 34 | 1.1 | 79 | SW | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Sandy Hook, New Jersey | 30.12 | 765.0 | 30.16 | 766.1 | 29 | — 1.7 | 45 | NW | 16 | 7.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| San Francisco, California | 30.02 | 762.5 | 30.09 | 764.3 | 54.3 | 12.4 | 79 | SW | 5 | 2.2 | | | 10ks | | SW | 0.02 | 0.5 | Cloudy | |
| Santa Fé, New Mexico | 23.20 | 589.3 | 29.74 | 755.4 | 35 | 1.7 | 53 | NW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Savannah, Georgia | 30.15 | 765.8 | 30.24 | 768.1 | 49 | 9.4 | 51 | NW | 4 | 1.8 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Shreveport, Louisiana | 29.85 | 758.2 | 30.07 | 763.8 | 60 | 15.6 | 88 | S | 8 | 3.6 | | | 10s | | S | 0 | 0 | Cloudy | |
| Silver City, New Mexico | 24.31 | 617.5 | 30.65 | 778.5 | 35 | 1.7 | 70 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.20 | 767.1 | 30.24 | 768.1 | 48 | 8.9 | 70 | NE | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.93 | 760.2 | 30.06 | 763.5 | 30 | — 1.1 | 68 | N | 6 | 2.7 | | 2cs | 2ks | N | NW | 0 | 0 | Fair | |
| Stockton, Texas | 27.05 | 687.1 | 30.05 | 763.3 | 48 | 8.9 | 70 | S | 9 | 4.0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.93 | 760.2 | 29.98 | 761.5 | 30 | — 1.1 | 68 | NW | 14 | 6.3 | | 8k | 0 | NW | | 0 | 0 | Fair | |
| Toledo, Ohio, | 29.41 | 747.0 | 30.12 | 765.0 | 38 | 3.3 | 63 | W | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Tucson, Arizona | 27.60 | 701.0 | 30.15 | 765.8 | 46 | 7.8 | 54 | S | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.74 | 755.4 | 30.24 | 768.1 | 43.0 | 6.1 | 83 | E | 4 | 1.8 | | 0 | 0 | | | 0.03 | 0.8 | Clear | |
| Unalashka, Aleutian Islands | | | | | 31 | — 0.6 | 89 | SW | | | 6 | | 10s | | SW | 0.25 | 6.3 | Cloudy | |
| Uvalde, Texas | 29.07 | 738.4 | 29.87 | 758.7 | 69 | 20.6 | 80 | E | 6 | 2.7 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.96 | 761.0 | 30.22 | 767.6 | 49 | 9.4 | 57 | SE | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Virginia City, Montana | 24.27 | 616.4 | 29.75 | 755.6 | 45 | 7.2 | 46 | SE | 4 | 1.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Visalia, California | 29.69 | 754.1 | 30.06 | 763.5 | 48.5 | 9.2 | 89 | SW | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Washington, D. C. | 30.10 | 764.5 | 30.22 | 767.6 | 35 | 1.7 | 61 | NW | 5 | 2.2 | | 0 | Sm'e | | | Inap. | Inap. | Clear | |
| Wickenburg, Arizona | | | | | 46 | 7.8 | 62 | N | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.14 | 765.5 | 30.22 | 767.6 | 44 | 6.7 | 44 | NE | 4 | 1.8 | | 0 | Fog | | Calm | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.70 | 652.8 | 30.06 | 763.5 | 40 | 4.4 | 91 | NE | 12 | 5.4 | | 1k | 0 | SW | | 0.26 | 6.6 | Clear | |
| Wood's Holl, Mass | 29.98 | 761.5 | 30.02 | 762.5 | 31 | — 0.6 | 89 | NW | 16 | 7.2 | | 5cs | 0 | NW | | 0 | 0 | Fair | |
| Yankton, Dakota | 28.52 | 724.4 | 29.80 | 756.9 | 44 | 6.7 | 52 | SE | 3 | 1.3 | | | 10s | | SE | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.89 | 759.2 | 30.06 | 763.5 | 52 | 11.1 | 60 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.38 | 720.8 | 29.76 | 755.9 | 57 | 13.9 | 46 | | | | | | | | | | | | J. B. Gordon. |
| Havana, Cuba, W. I | 30.09 | 764.3 | 30.14 | 765.5 | 70 | 21.1 | 56 | NE | 3.6 | 1.6 | | 3k | 0 | NE | | 0 | 0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | | | | | | | | | | | | | | | | | | | James Gall. |
| Medellin, Colombia, S. A | 25.22 | 640.6 | | | 68.5 | 20.3 | 83 | Calm | 0 | 0 | | | 8s;ks | | | 0 | 0 | | Thomas Herran. |
| Navassa, W. I | 29.92 | 760.0 | 30.00 | 762.0 | 80 | 26.7 | | NE | 10 | 4.5 | | | | | | 1.00 | 25.4 | Partly cl'dy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.00 | 762.0 | 30.00 | 762.0 | 79 | 26.1 | 91 | E | | | 2 | | 8ks | E | | 0.120 | 3.05 | Cloudy | C. J. Hering. |
| Santiago de Cuba, W. I | | | | | | | | | | | | | | | | | | | Robert Mason. |
| St. Thomas, W. I | | | | | | | | | | | | | | | | | | | G. O. Gellich. |
| York Factory, B. A | 30.05 | 763.3 | 30.10 | 764.5 | 2.0 | —16.7 | 86 | NW | 12 | 5.4 | | 2c | 0 | S | | 0 | 0 | Fair | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m., Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.8 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

*Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.10 | 764.5 | 52 | 11.1 | 53 | 11.7 | 76 | SSW | 13 | 5.8 | ..... | ..... | 8 | ..... | SSW | 0 | 0 | ..... | ..... | Clearing..... | |
| Navy Yard, Pensacola, Fla. | 30.32 | 770.1 | 50 | 10.0 | 50 | 10.0 | 72 | NE | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 29.99 | 761.7 | 57 | 13.9 | 31 | — 0.6 | 90 | W | 4 | 1.8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan.....* | 29.88‡ | 758.9‡ | ..... | ..... | 59.8 | 15.4 | 88 | SW | ..... | ..... | 1 | ..... | 10s | ..... | Calm | 0 | 0 | ..... | ..... | Overcast..... | |
| Adams, Panama .....* | 29.94 | 760.5 | 79 | 26.1 | 78 | 25.6 | 91 | NW | ..... | ..... | 3 | ..... | 5 | ..... | NW | ..... | ..... | ..... | ..... | Fair..... | |
| Alaska, Sitka, Alaska..... | 29 77‡ | 756.1‡ | ..... | ..... | 40 | 4.4 | 91 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | SE | 0.013 | 0.28 | Smooth | ..... | D. clouds..... | |
| Alliance, Naples, Italy..... | 29.97‡ | 761.2‡ | ..... | ..... | 60 | 15.6 | 71 | WSW | ..... | ..... | 0–1 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Ashuelot, Hong-Kong, China. ...*. | 29.89‡ | 759.2‡ | ..... | ..... | 69 | 20.6 | 100 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | Calm | ..... | ..... | Smooth | ..... | Fair..... | |
| Canonicus, New Orleans, La.....* | 30.20 | 767.1 | 43 | 6.1 | 52 | 11.1 | 93 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Colorado, New York, N. Y..... | 30.11 | 764.8 | 33 | 0.6 | 31 | — 0.6 | 100 | WNW | 15 | 6.7 | ..... | ..... | 2 | ..... | WNW | 0 | 0 | ..... | ..... | Hazy..... | |
| Constitution Lisbon, Portugal..... | 30.01‡ | 762.2‡ | ..... | ..... | 60 | 15.6 | 94 | SW | ..... | ..... | 6 | ..... | 10 | ..... | WSW | ..... | ..... | ..... | ..... | Overcast..... | |
| Despatch, Genoa, Italy..... | 29.89‡ | 759.2‡ | ..... | ..... | 60 | 15.6 | 71 | SE | ..... | ..... | 3 | ..... | 5 | ..... | SE | ..... | ..... | Smooth | ..... | Fair..... | |
| Franklin, Norfolk, Va.....* | 30.33 | 770.4 | 62 | 16.7 | 42 | 5.6 | 68 | W | 6 | 2.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Gettysburg, Genoa, Italy ..... | 29.88‡ | 758.9‡ | ..... | ..... | 58 | 14.4 | 82 | SSE | ..... | ..... | 4 | ..... | 5 | ..... | S;E | 0 | 0 | ..... | S | Fair..... | |
| Hartford, Montevideo, Uruguay.* | 30.04 | 763.0 | 65 | 18.3 | 72 | 22.2 | 62 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Michigan, Erie, Pa.....† | 30.04‡ | 763.0‡ | ..... | ..... | 30 | — 1.1 | 89 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monocacy. Shanghai, China.....* | 29.84‡ | 757.9‡ | ..... | ..... | 63 | 17.2 | 83 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monongahela Yokohama, Japan .....* | 29.83‡ | 757.7 | ..... | ..... | 61 | 16.1 | 77 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C.....* | 30.28 | 769.1 | 54 | 12.2 | 57 | 13.9 | 43 | NW | 8 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Onward, Callao, Peru.....†* | 30.02 | 762.5 | ..... | ..... | 64 | 17.8 | ? | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Palos, Tientsin, China.....* | 30.06 | 763.5 | 70 | 21.1 | 41 | 5.0 | 83 | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 34 | 1.1 | 75 | SSW | ..... | ..... | 4 | ..... | 2 | ..... | ESE | ..... | ..... | ..... | ..... | Clear..... | |
| Pensacola. Caldera, Chili ..... | 29.96‡ | 761.0‡ | ..... | ..... | 62 | 16.7 | 88 | NNW | 1 | 0.4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | NW | Cloudy..... | |
| Plymouth. Provincetown, Mass..... | 30.09‡ | 764.3‡ | ..... | ..... | 33 | 0.6 | 73 | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Powhatan, Norfolk, Va..... | 30.23‡ | 767.8‡ | ..... | ..... | 41 | 5.0 | 61 | NNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Quinnebaug, Tangier, Morroco..... | 30.06‡ | 763.5‡ | ..... | ..... | 64 | 17.8 | 73 | NW | ..... | ..... | 2 | ..... | 2 | ..... | WNW | ..... | ..... | ..... | ..... | Fair..... | |
| Ranger. Amoy, China.....* | 29.85‡ | 758.2‡ | ..... | ..... | 71 | 21.7 | 90 | S | ..... | ..... | 1 | ..... | 5 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Richmond. N. 11° 11′, E. 63° 08′..... | 29.85‡ | 758.2‡ | ..... | ..... | 82 | 27.8 | 79 | NNE | ..... | ..... | 1 | ..... | 2 | ..... | NNE | 0 | 0 | Smooth | ..... | Fair..... | |
| Rio Bravo, Brownsville, Texas..... | 29.99 | 761.7 | 72 | 22.2 | 70 | 21.1 | 100 | SE | ..... | ..... | 2 | ..... | 5 | ..... | S | ..... | ..... | ..... | ..... | Fair..... | |
| Santee, Annapolis, Md..... | 30.18‡ | 766.6‡ | ..... | ..... | 38 | 3.3 | 68 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Saratoga, N. 35° 46′, W. 66° 35′..... | 30.00‡ | 762.0‡ | ..... | ..... | 52 | 11.1 | 79 | NNW | ..... | ..... | 6 | ..... | 8 | ..... | SSE | Blank | Blank | Mod'ate | WNW | Squally..... | |
| St. Louis, League Island, Pa..... | 30.16‡ | 766.1‡ | ..... | ..... | 33 | 0.6 | 80 | NW | 12 | 5.4 | ..... | ..... | 8 | ..... | N | 0 | 0 | ..... | ..... | Cloudy..... | |
| Supply. New York, N. Y..... | 30.13‡ | 765.3‡ | ..... | ..... | 31 | — 0.6 | 91 | WNW | 4 | 1.8 | ..... | ..... | 2 | ..... | WNW | ..... | ..... | ..... | ..... | Fair..... | |
| Trenton Genoa, Italy.....* | 29.87‡ | 758.7‡ | ..... | ..... | 63 | 17.2 | 94 | SE | ..... | ..... | 2–3 | ..... | 2 | ..... | N | 0.03 | 0.8 | Smooth | ..... | Fair..... | |
| Tuscarora. N. 15° 50,′ W. 95° 51′. ...* | 29.89‡ | 759.2‡ | ..... | ..... | 73 | 22.8 | 76 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Long | SW | Clear..... | |
| Vandalia Boston, Mass.....† | 30.10‡ | 764.5‡ | ..... | ..... | 30 | — 1.1 | 100 | WNW | ..... | ..... | 3 | ..... | 2 | ..... | NNW | ..... | ..... | ..... | ..... | Fair..... | |
| Wabash, Boston, Mass..... | 30.02‡ | 762.5‡ | ..... | ..... | 28 | — 2.2 | 82 | NW | 4 | 1.8 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Wyoming, N. 32° 07′, E. 34° 02 .....* | 29.77‡ | 756.1‡ | ..... | ..... | 72 | 22.2 | 100 | ESE | ..... | ..... | 1–2 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | |
| S. S. City of Tokio N. 37° 45′, W. 125° 42′ | | 29.95‡ | 760.7‡ | 55 | 12.8 | | WSW | | | 5 | | 5ck | | | 0 | Heavy | NW | Squally | Capt. Maury. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebur |
| S. S. Dakota, Capt. H. G. Morse, Olympia, Washington Ter.,†,* | | 30.14‡ | 765.5‡ | | | | Calm | | | | | 10 | | | 0 | None | | Fine | B. Lawless. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, S. 27° 00′, W. 177° 40′ | | 29.94‡ | 760.5‡ | | | | ESE | | | 2 | | 6 | | W | | Long; slow | SE | Fine | R. C. Ghest, 1st Officer |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic N. 40° 40′, W. 70° 21′ * | | 30.00 | 762.0 | 36 | 2.2 | | W | | | 5 | | 1 | | W | | Smooth | | Fine | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, N. 44° 18′, W. 157° 10′ * | | 30.25‡ | 768.3‡ | 43 | 6.1 | 92 | NW | | | 5 | | k | | NW | 0 | Mod'ate | W | D. clouds | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, N. 33° 56′, E. 137° 20′ * | | 29.77‡ | 756.1‡ | 65 | 18.3 | ?? | Var. | | | 2 | | s | | Var. | Blank | Smooth | N | D. clouds | Capt. W. H. Kidley |
| §S. S. Oceanic, Capt. J. Metcalf, N. 34° 52′, W. 164° 54′ | | 30.17‡ | 766.3‡ | 60 | 15.6 | ?? | SSE | | | 4 | | 10 | | SW | | 2 | E | Rain & fog | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. §The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the date may be in error one day; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 36° 29′, W. 72° 04′ | | 30.22‡ | 767.6‡ | 43.0 | 6.1 | 68 | NNW | | | 6 | | 10 | | NW | 0 | Mod'ate | NW | Cloudy | Capt. C. Undütsch. |
| S. S. Leipzig, N. 49° 47′, W. 10° 42′ | | 29.26‡ | 743.2‡ | 56.0 | 13.3 | 65 | WNW | | | 5 | | 2 | | WNW | 6 hours | Rough | WNW | Fair | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, Capt. G. Meyer, Baltimore, Md | | 30.16‡ | 766.1‡ | | | | NW | | | 2 | | 5 | | NW | | | | Fair | G. Risius, 3rd Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Philadelphia, Pa. | | 30.33‡ | 770.4‡ | 33 | 0.6 | | NW | | | 3 | | 1 | | NW | 0 | | | Clear | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| Peruvian, N. 44° 30′, W. 62° 00′ | †* | 29.98‡ | 761.5‡ | 34 | 1.1 | 90 | W | | | 4 | | 5 | | W | | Smooth | | Clear | Capt. W. Richardson. |
| | | | | | | | | | | | | | | | | | | | J. Powell, 4th Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

**MARINE SERIES. (Miscellaneous.**

Furnished by the coöperation of the Observer named.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
| Brigantine "George," of Halifax, N. 31° 30′, W. 66° 20′ | † | 30.06‡ | 763.3‡ | 62 | 16.7 | | NW | | | | | | | | | Smooth | | Clearing | Willard N. Pratt. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

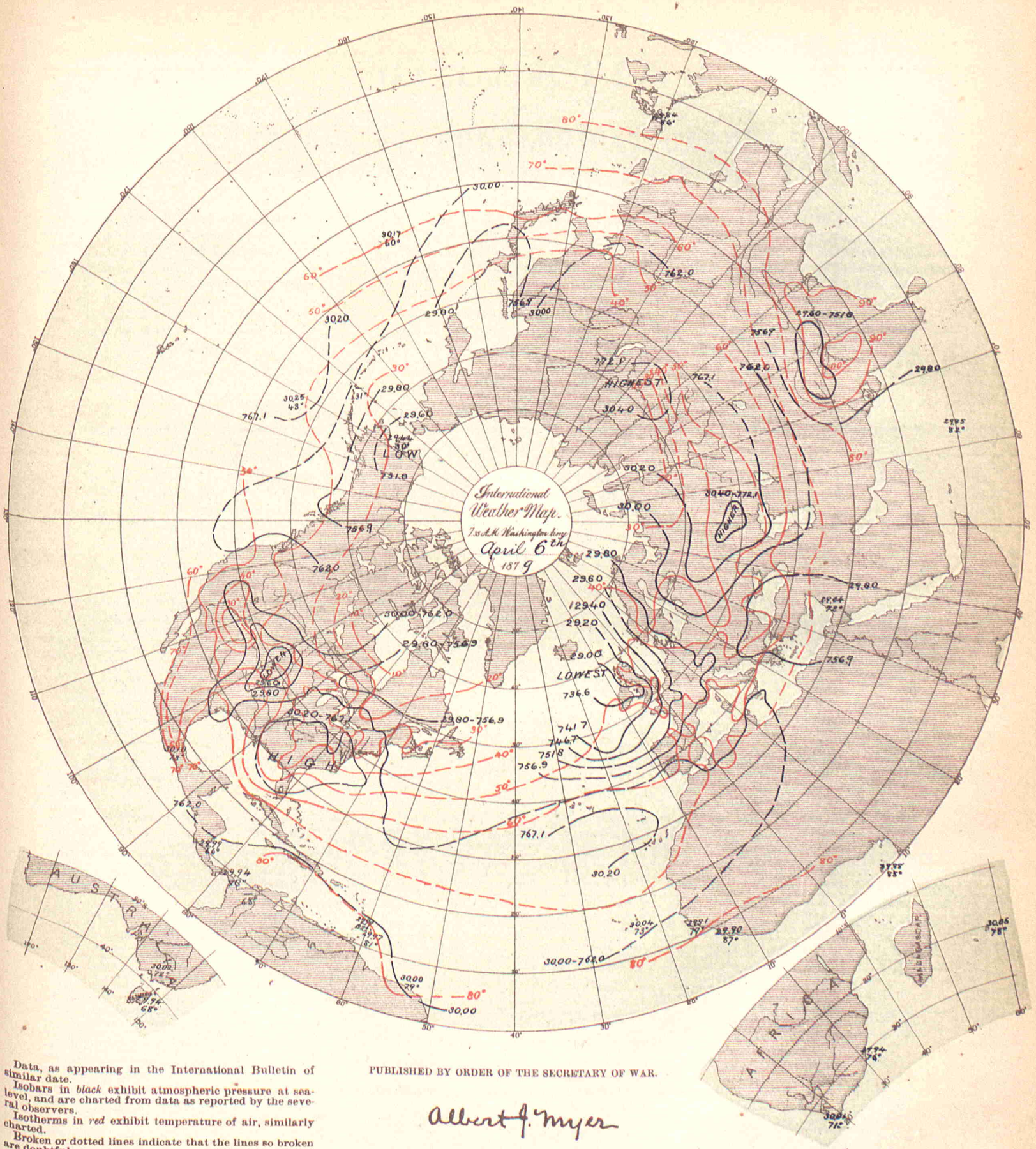
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIOAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 7, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGEGIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 29.87 | 758.7 | 65.1 | 18.4 | 72 | Calm | | | 0 | | 5 | | | 0.067 | 1.7 | Cloudy | Kesxuche. |
| Algiers | | | 29.70 | 754.5 | 72.0 | 22.2 | 43 | SW | | | 4 | | 10 | | | 0 | 0 | Covered | Tourilliere. |
| La Calle | | | 29.77 | 756.1 | 80.2 | 26.8 | 46 | SW | | | 1 | | 5 | | | 0 | 0 | Cloudy | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 29.92 | 760.0 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 29.91 | 759.6 | 73.8 | 23.2 | 25 | S | | | 5 | | 10 | | | 0 | 0 | Covered | Herbin. |
| Tebessa | | | 29.89 | 759.3 | 75.4 | 24.1 | 12 | W | | | 1 | | 2 | | | 0 | 0 | Fair | Watrin. |
| Geriville | | | 29.91 | 759.7 | 60.3 | 15.7 | 91 | S | | | 8 | | 0 | | | 0 | 0 | Clear | Brugniaux. |
| Laghouat | | | 29.90 | 759.4 | 74.5 | 23.6 | 14 | SSW | | | 5 | | 2 | | | 0 | 0 | Fair | Bertrand. |
| Biskra | | | 29.87 | 758.8 | 73.4 | 23.0 | 26 | NW | | | 1 | | 2 | | | 0 | 0 | Fair | Chanvaux. |

NOTE.—In the originals the amount of cloudiness is given by the scale 0-4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 830? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.14 | 740.2 | 29.68 | 753.8 | 60.8 | 16.0 | 45 | W | | | 5 | | 3 | | | 0 | 0 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 28.94 | 735.1 | 29.71 | 754.7 | 54.3 | 12.4 | 61 | ESE | | | 2 | | 8 | | | 0.047 | 1.2 | | Dr. Wierzbiski. |
| Eperies | 28.85 | 732.9 | 29.73 | 755.2 | 49.3 | 9.6 | 76 | Calm | | 0 | 0 | | 10s | | | Blank | Blank | | Julius Mikolik. |
| Gratz | 28.35 | 720.2 | 29.57 | 751.1 | 61.5 | 16.4 | 38 | SW | | | 4 | | 2 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.37 | 720.6 | 29.79 | 756.7 | 52.9 | 11.6 | 53 | NW | | | 2 | | 5 | | | 0 | 0 | | Prof. A. Gottschling. |
| Kremsmünster | 28.14 | 714.8 | 29.43 | 747.9 | 61.7 | 16.5 | 46 | NE | | | 2 | | 0 | | | 0 | 0 | | Prof. C. Wagner. |
| Lemberg | 28.76 | 730.4 | 29.75 | 755.6 | 46.0 | 7.8 | 69 | SE | | | 1 | | 9 | | | | | | Dr. T. Stanecki. |
| Pola | 29.66 | 753.4 | 29.78 | 756.3 | 59.0 | 15.0 | 75 | SSE | | | 3 | | 7 | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.86 | 745.6 | 29.82 | 757.3 | 56.5 | 13.6 | 42 | E | | | 2 | | 4 | | | 0 | 0 | | Julius Csics, S. J. |
| Szegedin | 29.47 | 748.5 | 29.75 | 755.6 | 55.0 | 12.8 | 66 | S | | | 3 | | 6 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 29.67 | 753.7 | 29.78 | 756.3 | 60.1 | 15.6 | 75 | W | | | 1 | | 9 | | | 0 | 0 | Cloudy | P. Busin. |
| Vienna | 28.88 | 733.5 | 29.58 | 751.3 | 58.8 | 14 9 | 56 | SE | | | 2 | | 0 | | | 0 | 0 | | I. R. Central Met. Obs'y |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 28.99 | 736.4 | 29.19 | 741.3 | 54 9 | 12.7 | 80 | SSE | | | 4 | 6 | 4 | | S | 0.035 | 0.90 | | Royal Observatory. |
| Furnes | 29.10 | 739.1 | 29.12 | 739.7 | 52.3 | 11.3 | 88 | S | | | 4 | | 9 | | | 0.051 | 1.3 | | M. E. de Cae. |
| Maeseyck | 29.13 | 740.0 | 29.26 | 743.2 | 58.1 | 14.5 | 72 | S | | | 4 | | 10 | | | 0.004 | 0.1 | | M. Pierrot. |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.10 | 739.1 | 29.20 | 741.7 | 40.2 | 4.6 | ..... | ESE | 32 | 14.3 | ..... | ..... | 10 | ..... | ..... | 1.485 | 37.72 | Raining..... | W. Boswell. |
| Ardrossan | 28.99 | 736.3 | 29.01 | 736.8 | 46 | 7.8 | ..... | ENE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 28.98 | 736.1 | 48.0 | 8.9 | ..... | NNE | 15 | 6.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy ..... | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 28.81 | 731.8 | 49.6 | 9.8 | ..... | ESE | 22 | 9.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 28.86 | 733.0 | 50.7 | 10.4 | ..... | S | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | Thomas Mackereth. |
| Bradford, Yorkshire | 28.52 | 724.4 | 28.92 | 734.6 | 50.5 | 10.3 | ..... | E | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.19 | 4.8 | D. clouds..... | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.93 | 760.2 | 29.96 | 761.0 | 82 | 27.8 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 28.96 | 735 6 | 59.0 | 15.0 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | H. Todd. [O. |
| Cardington | ..... | ..... | 28.93 | 734.8 | 58.0 | 14.4 | ..... | S | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John McLaren. |
| Chatham, School M. E. | 28.89 | 733.8 | 29.02 | 737.1 | 53.9 | 12.2 | ..... | SW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Raining ..... | J. Carmell, Sapper, R. E. |
| Dartmoor | 27.42 | 696.5 | 28.83 | 732.3 | 45.2 | 7.3 | ..... | S | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Rain & fog... | Alexander Watt. |
| Donaghadee | 28.94 | 735.1 | 28.98 | 736.1 | 44 | 6.7 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | J. Mac Gowan. |
| Dover | 29.01 | 736.8 | 29.04 | 737 6 | 49 | 9.4 | ..... | SW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | Showery..... | J. Costello. |
| Falmouth, Observatory | 28.65 | 727.7 | 28.87 | 733.3 | 47.9 | 8.8 | ..... | WNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | The Staff. |
| Fort Napier, (Natal) | 27.63 | 701.8 | 29.94 | 760.5 | 75.4 | 24.1 | ..... | NE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.. .. | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.69 | 754.1 | 29.92 | 760.0 | 86 | 30.0 | ..... | N | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's college | ..... | ..... | 29.92 | 760.0 | 51 | 10.6 | ..... | NNE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 29.62 | 752.3 | 29.67 | 753.6 | 61.6 | 16.4 | ..... | W | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 28.84 | 732.5 | 29.04 | 737.6 | 42.8 | 6.0 | ..... | NE | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | D. G. Maclean. [C. |
| Great Yarmouth | 29.05 | 737.9 | 29.06 | 738.1 | 44 | 6.7 | ..... | SE | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | Raining ..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 28.82 | 732.0 | 28.99 | 736.3 | 58.2 | 14.6 | ..... | SSW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | The staff, for G.B. Airy. |
| Guernsey | 28.71 | 729.2 | 28.93 | 734.8 | 54 | 12.2 | ..... | SSE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S.E.Hoskins, F.R.S. |
| Helston | 28.96 | 735.6 | 29.05 | 737.9 | 50 | 10.0 | ..... | W | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.40 | 10.2 | Raining..... | M. P. Moyle. |
| Holyhead | 28.75 | 730.2 | 28.80 | 731.5 | 44 | 6.7 | ..... | NNE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | John Tilston. |
| Jersey | 28.69 | 728.7 | 28.97 | 735.8 | 52.3 | 11.3 | ..... | S | ..... | ..... | 4 | ..... | 8 | ..... | ..... | Blank | Blank | Gloomy ..... | J. Fisher. |
| Kew, Observatory | 28.95 | 735.2 | 28.99 | 736 3 | 55.2 | 12.9 | ..... | S | 22 | 9.8 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | The Meteorological Of. |
| Leicester, Museum | 28.68 | 728.5 | 28.96 | 735.6 | 55.5 | 13.1 | ..... | SW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Wm, J. Harrison, F.G.S. |
| Malta, Mediterranean | 28.92 | 734.6 | 30.00 | 762.0 | 66 | 18.9 | ..... | NW | ..... | ..... | 1 | ..... | 3k | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.08 | 738.6 | 29.17 | 740.9 | 47 | 8.3 | ..... | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded.... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.14 | 765.5 | 72.0 | 22.2 | ..... | NE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 28.74 | 730.0 | 28.92 | 734.6 | 56.2 | 13.4 | ..... | SSE | ..... | ..... | 5 | ..... | 8k;d | ..... | SSE | 0.210 | 5.33 | D. clouds..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 28.36 | 720.3 | 28.86 | 733.0 | 55.8 | 13.2 | ..... | SSE | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds.. | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 28.93 | 734.8 | 53 | 11.7 | ..... | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. E. Bellamy. |
| Plymouth | 28.78 | 731.0 | 28.86 | 733.0 | 48.9 | 9.4 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Merrifield. |
| Roche's Point | 28.85 | 732.8 | 28.93 | 734.8 | 51 | 10.6 | ..... | N | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded... | Wm. Kennedy, |
| Saint Ann's Head | 28.60 | 726.4 | 28.76 | 730.5 | 43 | 6.1 | ..... | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 42.3 | 5.7 | ..... | SE | 34 | 15.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Rev C.Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | ..... | ..... | ..... | ..... | 52.2 | 11.2 | ..... | SE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | W. H.Lyne. |
| Sheffield | 28.66 | 728.0 | 28.93 | 734.8 | 54.6 | 12.6 | ..... | E | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.15 | 3.8 | D. clouds..... | W. F. Cooper. |
| Silloth Rectory | 28.91 | 734.3 | 28.94 | 735.1 | 48.0 | 8.9 | 80 | E | ..... | ..... | 6 | ..... | 9 | ..... | ..... | 0.060 | 1.52 | D. clouds..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 28.50 | 723.9 | 28.91 | 734.3 | 50.3 | 10.2 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. S. J. Perry. |
| Stratfield, Turgiss | 28.74 | 730.0 | 28.94 | 735.1 | 55.0 | 12.8 | ..... | S | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | Squally..... | C. H. Griffith, F. M.,S. |
| Thurso | 29.20 | 741.7 | 29.26 | 743.2 | 43 | 6.1 | ..... | SE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | John Trotter. |
| Truro, Royal Institution | 28.86 | 733.6 | 28.91 | 734.3 | 48 | 8.9 | ..... | NW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | W. Newcombe. |
| Valencia, Observatory | 28.95 | 735.3 | 28.97 | 735.8 | 44.3 | 6.8 | ..... | N | 9 | 4.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | The Meteorological Of. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.94 | 760.5 | 29.98 | 761.5 | 68.8 | 20.4 | 62 | NW | 24 | 10.7 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Fine..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.92 | 760.0 | 60.0 | 15.6 | 88 | Calm | ..... | ..... | 0 | ..... | 10k | ..... | ..... | 0 | 0 | Hazy..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.09 | 738.9 | 41.3 | 5.2 | ..... | E | ..... | ..... | 3 | ..... | 10k | ..... | ..... | 0.50 | 12.7 | Overcast ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.82 | 757.4 | 30.01 | 762.2 | 78.2 | 25.7 | 64 | ESE | 8.0 | 3.6 | ..... | 1 | 6 | ..... | SW | 0 | 0 | Cloudy ..... | C. Meldrum. |
| Melbourne, Observatory | 29 94 | 760.5 | 30.03 | 762.7 | 64.0 | 17.8 | 89 | N | 10 | 4.5 | ..... | ..... | 7 | ..... | ..... | 0.08 | 2.0 | Lightning.. | R. L. J. Ellery. |
| MonachLt-house, (Hebrides) | ..... | ..... | 29.12 | 739.6 | 46 | 7.8 | ..... | SSE | ..... | ..... | 4 | 5 | 5 | S | ..... | 0.3 | 8. | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.34 | 745.2 | 43 | 6.1 | ..... | SE | ..... | ..... | 7 | 8 | 10 | SE | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 42′, E. 29° 36′ | ..... | ..... | 29.93‡ | 760.2‡ | 53 | 11.7 | ..... | WNW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle-Isle, N. 46° 57′, W. 16° 21′ | ..... | ..... | 29.27‡ | 743.4‡ | 51 | 10.6 | ..... | NW | ..... | ..... | 10 | ..... | 9 | ..... | ..... | 9 | WNW | Raining ..... | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra, N. °49 26′ W. 8° 01′ | ..... | ..... | 28.95‡ | 735.3‡ | 47.2 | 8.4 | ..... | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina, N. 11° 10′, W. 60° 25′ | ..... | ..... | 29.96 | 761.0 | 83 | 28.3 | ..... | ENE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 2 | Con-fused. | Showery..... | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam, N. 22° 21′, E. 114° 37′ | ..... | ..... | 29.87‡ | 758.7‡ | 72 | 22.2 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Hazy ..... | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W.R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.25 | 666.7 | 29.97 | 761.2 | 65.8 | 18.8 | ..... | NE | ..... | ..... | 1 | 2c;s | ..... | NE | ..... | Inap. | Inap. | ..... | Federico Maison |
| ..... | | | | | | | | | | | | | | | | | | | |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.6 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.65 | 753.1 | 29.70 | 754.3 | 45.1 | 7.3 | 69 | SE | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 29.46 | 748.2 | 29.48 | 748.7 | 46.8 | 8.2 | 79 | ESE | ..... | ..... | 6 | ..... | 3 | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.68 | 753.9 | 29.72 | 755.0 | 23.0 | — 5.0 | 69 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Farõe) | 29.32 | 744.6 | 29.35 | 745.5 | 43.9 | 6.6 | 96 | SE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Fog and rain |
| Vestervig | 29.37 | 745.9 | 29.54 | 750.2 | 47.1 | 8.4 | 92 | E | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 28.54 | 724.8 | 29.09 | 738.8 | 57.6 | 14.2 | 73 | SSW | ..... | ..... | 2 | ..... | 5 | SW | S | 0.374 | 9.5 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 28.98 | 736.2 | 29.10 | 739.0 | 58.6 | 14.8 | 91 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bonvallet, Director. |
| Avignon, Normal School | 29.32 | 744.6 | 29.39 | 746.6 | 57.7 | 14.3 | 82 | SSE | ..... | ..... | 3 | ..... | 8 | ..... | SSE | 0.374 | 9.5 | Very cloudy | M. Giraud, Director. |
| Bar-sur-Seine | 28.69 | 728.6 | 29.23 | 742.4 | 54.5 | 12.5 | 82 | S | ..... | ..... | 1 | ..... | 10 | ..... | SW | 0.008 | 0.2 | Light rain | C. Saillard, Director. |
| Beauvais, Normal School | 28.85 | 732.7 | 29.10 | 739.1 | 58.8 | 14.9 | 72 | S | ..... | ..... | 2 | ..... | 8 | ..... | SSW | 0.187 | 4.75 | Very cloudy | Frer Eugene Marie, Dir |
| Besançon, Normal School | 28.46 | 722.8 | 29.33 | 745.0 | 54.5 | 12.5 | 79 | SE | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.12 | 3. | Covered | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.54 | 724.9 | 29.45 | 748.0 | 53.1 | 11.7 | 76 | SE | ..... | ..... | 1 | ..... | 10kn | S | SE | 0.39 | 10. | Raining | M. Marlot, Director. |
| Bourges, Normal School | 28.65 | 727.6 | 29.19 | 741.3 | 52.9 | 11.6 | 93 | S | ..... | ..... | 2 | ..... | 10n | S | S | 0.335 | 8.5 | Raining | A. Waquet, Director |
| Brest, Naval Observatory | 28.63 | 727.2 | 28.87 | 733.4 | 54.7 | 12.6 | 86 | W | ..... | ..... | 2 | ..... | 9 | ..... | W | 0.453 | 11.50 | Squally | M. de Rermaree, Director |
| Carcassonne, Normal School | 28.82 | 732.1 | 29.22 | 742.1 | 68.0 | 20 | 50 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | September, Director. |
| Caen, Normal School | 28.89 | 733.8 | 28.93 | 734.7 | 59.0 | 15 | 56 | SSW | ..... | ..... | 3 | ..... | 8 | ..... | SSW | 0.24 | 6. | Very cloudy | M. Lair, Director. |
| Chartres, Normal School | 28.53 | 724.6 | 29.08 | 738.5 | 56.1 | 13.4 | 93 | NW | ..... | ..... | 2 | ..... | 10 | ..... | NW | 0.20 | 5. | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 28.89 | 733.7 | 29.19 | 741.4 | 55.4 | 13.0 | 74 | SW | ..... | ..... | 3 | ..... | 8 | SW | SW | ..... | ..... | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 27.85 | 707.4 | 29.14 | 740.2 | 60.6 | 15.9 | 50 | S | ..... | ..... | 1 | ..... | 5 | ..... | SW | 0.008 | 0.2 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.47 | 723.1 | 29.31 | 744.5 | 52.2 | 11.2 | 85 | SE | ..... | ..... | 1 | ..... | 10n | ..... | SE | 0 | 0 | Covered | Dr. Coulet, Director. |
| Commune de Gréasque* | 28.35 | 720.0 | 29.49 | 749.0 | 53.1 | 11.7 | 87 | SE | ..... | ..... | 4 | ..... | 10 | ..... | S | 0.339 | 8.6 | Rainy | M. Kina, Director. |
| Grenoble, Normal School | 28.61 | 726.6 | 29.36 | 745.6 | 57.9 | 14.4 | 53 | SSW | ..... | ..... | 8 | ..... | 8kn | ..... | E | 0 | 0 | Very cloudy | M. Ablard, Director. |
| La Roche-sur-Yon N. School | 28.87 | 733.2 | 29.08 | 738.5 | 53.2 | 11.8 | 76 | S | ..... | ..... | 4 | ..... | 10 | ..... | SSW | 0.39 | 10. | Raining | Mouillot, Director. |
| Le Mans, Normal School | 28.78 | 731.1 | 29.08 | 738.7 | 54.1 | 12.3 | 98 | SSW | ..... | ..... | 4 | ..... | 8 | ..... | SW | 0.187 | 4.75 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.46 | 722.9 | 29.36 | 745.8 | 57.0 | 13.9 | 62 | WSW | ..... | ..... | 4 | 10c | ..... | ..... | ..... | 0 | 0 | Covered | Baudry, Director. |
| Lorient, Naval Observatory | 28.82 | 732.0 | 28.92 | 734.5 | 54.3 | 12.4 | 79 | S | ..... | ..... | 5 | ..... | ..... | ..... | S | 0.843 | 21.40 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Marseilles, Observatory | ..... | ..... | 29.44 | 747.9 | 56.1 | 13.4 | 88 | SSE | ..... | ..... | 3-4 | ..... | 10 | ..... | ..... | 1.126 | 28.60 | Rainy | The Staff. |
| Mirecourt, Normal School | 28.28 | 718.4 | 29.31 | 744.4 | 52.9 | 11.6 | 80 | S | ..... | ..... | 1 | ..... | 10 | ..... | N | ..... | ..... | Raining | M. Barbier, Director. |
| Nismes, Normal School | 29.15 | 740.3 | 29.35 | 745.4 | 60.4 | 15.8 | 80 | S | ..... | ..... | 4 | ..... | 5 | ..... | S | 0.35 | 9. | Cloudy | Boyer, Director. |
| Privas, Normal School | 28.37 | 720.6 | 29.36 | 745.6 | 51.8 | 11 | 100 | S | ..... | ..... | 6 | ..... | 10 | S | S | ..... | ..... | Light rain | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.47 | 621.6 | ..... | ..... | 39.4 | 4.1 | 94 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.024 | 0.6 | Covered | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.12 | 739.7 | 29.15 | 740.5 | 52.9 | 11.6 | 78 | S | ..... | ..... | 1 | ..... | 10 | SW | SW | 0.12 | 3. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 28.96 | 735.6 | 29.05 | 737.8 | 62.2 | 16.8 | 53 | S | ..... | ..... | 2 | ..... | 5 | S | S | 0.165 | 4.2 | Cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 28.90 | 734.1 | 28.93 | 734.9 | 57.9 | 14.4 | 55 | SSW | ..... | ..... | 6 | ..... | 5 | SSW | SSW | 0.353 | 8.97 | Cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 28.98 | 736.1 | 29.15 | 740.3 | 56.7 | 13.7 | 80 | SSE | ..... | ..... | 3 | ..... | ..... | SW | SSW | 0.177 | 4.5 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.29 | 718.6 | 29.35 | 745.5 | 55.4 | 13 | 55 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.32 | 8. | Raining | T. Huguet, Director. |
| Toulouse, Observatory | 28.55 | 725.1 | 29.25 | 743.0 | 66.6 | 19.2 | 54 | SSE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.839 | 21.3 | Rainy | M. Mercadier Julier. |
| Versailles Observatory | 28.64 | 727.4 | 29.13 | 739.9 | 56.5 | 13.6 | 75 | SW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.389 | 9.88 | ..... | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 28.59 | 726.2 | 29.28 | 743.7 | 59.0 | 15 | 89 | SE | ..... | ..... | 3 | ..... | 8 | ..... | NW | 1.58 | 40. | Very cloudy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.85 | 758.3 | 29.88 | 759.0 | 79.5 | 26.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 28.71 | 729.3 | 29.31 | 744.5 | 55.0 | 12.8 | 70 | SSW | ..... | ..... | 3 | ..... | 10 | ..... | SSW | 0.020 | 0.5 | Covered | Mr. Jays. |
| Mont-Louis | 24.23 | 615.4 | 29.54 | 750.4 | 45.5 | 7.5 | 75 | SW | 24.2 | 10.8 | ..... | ..... | 7 | ..... | W | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.64 | 752.9 | 54.3 | 12.4 | 89 | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.413 | 10.5 | Raining | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 28.86 | 733.0 | ..... | ..... | 55.2 | 12.9 | 83 | S | ..... | ..... | 4 | ..... | 10 | ..... | SSW | 0.177 | 4.5 | ..... | Marié Davy, Director. |
| Perpignan | 29.15 | 740.5 | 29.26 | 743.2 | 61.2 | 16.2 | 68 | E | 9.4 | 4.2 | ..... | ..... | 7 | ..... | SW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 21.92 | 556.7 | ..... | ..... | 35.8 | 2.1 | ..... | SW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.441 | 11.2 | Snowy | Gen'l de Nansouty. |
| Tours | 28.95 | 735.2 | 29.14 | 740.2 | 54.3 | 12.4 | 81 | SSW | ..... | ..... | 4 | ..... | 10 | ..... | SSW | 0.264 | 6.7 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.07 | 763.7 | 30.10 | 764.4 | 50.7 | 10.4 | 84 | NE | 23.3 | 10.4 | ..... | ..... | 10k | ..... | ..... | 0 | 0 | Covered | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a.m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p.m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–1 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.60 | 726.5 | 29.43 | 747.5 | 60.4 | 15.8 | 53 | SE | | | 6 | | 1 | | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.43 | 747.5 | 29.60 | 751.8 | 59.7 | 15.4 | 45 | S | | | 1 | | 2 | | | 0.154 | 3.9 | | Prof. Arndt. |
| Breslau | 29.14 | 740.1 | 29.66 | 753.4 | 57.4 | 14.1 | 40 | SE | | | 4 | | 3 | SE | | Blank | Blank | | Royal University Obs'y |
| Carlsruhe | 28.91 | 734.4 | 29.32 | 744.7 | 63.( | 17.2 | 46 | SW | | | 1 | | 10 | SW | | 0 | 0 | | Albert Senz. |
| Cassel | 28.84 | 732.5 | 29.44 | 747.7 | 63.3 | 17.4 | 38 | ESE | | | 2 | | 5 | SW | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.10 | 739.2 | 29.26 | 743.2 | 62.2 | 16.8 | 50 | SE | | | 5 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 28.98 | 736.2 | 29.35 | 745.4 | 64.0 | 17.8 | | SSW | | | 2 | | 10 | | | 0 | 0 | | Physical Society. |
| Freienwalde on the Oder | | | | | | | | | | | | | | | | | | | Assmann., M. D. |
| Friedrichshafen | 27.93 | 709.5 | 29.32 | 744.6 | 61.0 | 16.1 | 44 | SSE | | | 8 | | 10 | S | | 0 | 0 | Föhn | M. Wilhelm. |
| Hamburg | 29.40 | 746.8 | 29.47 | 748.6 | 56.8 | 13.8 | 55 | SE | | | 4 | | 7cs;k | | | 0.012 | 0.3 | Pleasant | Captain F. Hegemann. |
| Kiel | 29.49 | 749.1 | 29.51 | 749.5 | 52.3 | 11.3 | 69 | ESE | | | 3 | | 2 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.78 | 756.3 | 29.86 | 758.4 | 45.1 | 7.3 | 62 | SE | | | 3 | | 4 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 29.70 | 754.3 | 49.8 | 9.9 | | SE | | | 6 | | 3 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.10 | 739.0 | 29.50 | 749.4 | 61.0 | 16.1 | 35 | S | | | 1 | | 10 | SW | | | | Rainy | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.89 | 759.3 | 29.94 | 760.5 | 37.9 | 3.3 | 66 | E | | | 3 | | 10ck | | | | | | Skalweit. |
| Neufahrwasser | 29.82 | 757.5 | 29.84 | 757.9 | 39.7 | 4.3 | 84 | NNE | | | 4 | | 4 | | | 0.012 | 0.3 | | A. Lothes. |
| Posen | 29.43 | 747.6 | 29.72 | 755.0 | 50 9 | 10.5 | 63 | SSE | | | 6 | | 5 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 28.81 | 731.7 | 29.34 | 745.2 | 58.3 | 14.6 | 50 | ENE | | | 2 | | 10 | N? | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 28.43 | 722.1 | 29.32 | 744.8 | 66.2 | 19.0 | 32 | S | | | 1 | | 9 | SW | | 0 | 0 | Foggy | Prof. Schoder. |
| Treves (Trier) | 28.79 | 731.2 | 29.30 | 744.2 | 55.6 | 13.1 | 66.7 | S | | | 6 | | 10 | | | 0.004 | 0.09 | | Prof. Flesch. |
| Weissenburg (Bavaria) | 27.94 | 709.6 | 29.39 | 746.5 | 61.0 | 16.1 | 32 | SSE | 18 | 8 | 3c | | 0 | | | 0 | 0 | | Dr. Van Bebber. |
| Wustrow, Naval School | 29.56 | 750.9 | 29.59 | 751.5 | 52.5 | 11.4 | 71 | E | | | 3 | | 8s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.52 | 749.7 | 29.90 | 759.5 | 66.7 | 19.3 | | SW | | | 2.5 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the cooperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.81 | 757.1 | 29.86 | 758.3 | 85.2 | 29.6 | 44 | W | 11 | 4.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.26 | 743.3 | 29.72 | 755.0 | 92.4 | 33.6 | 21 | W | 8.8 | 3.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.74 | 755.4 | 29.78 | 756.4 | 82.5 | 28.1 | 73 | WNW | 17 | 7.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | | | | | | | | | | | | | | | | | | | |
| Lahore | 28.88 | 733.4 | 29.60 | 751.7 | 92.5 | 33.6 | 16 | E | 2.8 | 1.2 | | | 4 | | | 0 | 0 | Misty | |
| Belgaum | 27.27 | 692.7 | 29.80 | 756.8 | 78.1 | 25.6 | 83 | W | 9 | 4.0 | | | 2 | | E | 0 | 0 | D. clouds | |
| Roorkee | 28.79 | 731.3 | 29.67 | 753.5 | 91.8 | 33.2 | 24 | Calm | 2.0 | 0.9 | | | 9 | | | 0 | 0 | Overcast | |
| Agra | 29.13 | 740.0 | 29.68 | 753.8 | 98.1 | 36.7 | 15 | N | | | | | | | | 0 | 0 | | |
| Nagpur | 28.61 | 726.7 | 29.60 | 752.0 | 102.2 | 39.0 | 14 | Calm | 2.3 | 1.0 | | | | | | 0 | 0 | Blue sky | |
| Lucknow | 29.26 | 743.3 | 29.62 | 752.4 | 103.0 | 39.4 | 17 | NW | 1.2 | 0.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.33 | 745.0 | 29.63 | 752.6 | 98.6 | 37.0 | 21 | Calm | 1.5 | 0.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.43 | 747.4 | 29.60 | 751.8 | 99.8 | 37.7 | 14 | SW | 0.5 | 0.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.68 | 702.9 | 29.61 | 752.1 | 96.6 | 35.9 | 16 | NW | 5.9 | 2.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.63 | 752.6 | 29.71 | 754.6 | 88.1 | 31.2 | 56 | S | 5.0 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.66 | 753.4 | 29.68 | 753.9 | 86.0 | 30.0 | 65 | S | 9.0 | 4.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.26 | 743.2 | 29.64 | 752.7 | 93.7 | 34.3 | 26 | S | 4.7 | 2.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.64 | 752.9 | 29.73 | 755.2 | 84.4 | 29.1 | 81 | SW | 5.4 | 2.4 | | | 3 | | | 0 | 0 | Misty | |
| Sibsagar | 29.36 | 745.9 | 29.70 | 754.3 | 82.3 | 27.9 | 62 | NNW | 1.0 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.46 | 722.9 | 29.79 | 756.8 | 92.7 | 33.7 | 24 | Calm | 2.1 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation. Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.36 | 745.7 | 29.77 | 756.2 | 53.8 | 12.1 | 73 | SW | 3.1 | 1.4 | ..... | ..... | 10 | ..... | ..... | 0.020 | 0.5 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.15 | 740.4 | 29.67 | 753.5 | 52.7 | 11.5 | 80 | E | ..... | ..... | 4 | ..... | 10 | E | ..... | 0.815 | 20.7 | ..... | Prof. Schiaparelli. |
| Padua | 29.64 | 752.8 | 29.75 | 755.6 | 56.8 | 13.8 | 71 | NNE | 7.4 | 3.3 | ..... | ..... | 10 | SE | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.70 | 729.0 | 29.61 | 752.0 | 50.2 | 10.1 | 88 | ESE | 2.5 | 1.1 | ..... | ..... | 10 | S | ..... | 0.165 | 4.2 | ..... | Prof. P. F. Denza. |
| Genoa | 29.48 | 748.9 | 29.67 | 753.7 | 52.3 | 12.3 | 87 | SE | 15.0 | 6.7 | ..... | ..... | 10 | SE | ..... | 0.138 | 3.5 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.70 | 703.7 | 29.61 | 752.2 | 46.9 | 8.3 | 87 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.126 | 3.2 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.71 | 754.6 | 29.76 | 755.8 | 61.9 | 16.6 | 53 | S | 11.9 | 5.3 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.51 | 749.5 | 29.76 | 756.0 | 62.6 | 17.0 | 53 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci |
| Leghorn | 29.64 | 752.8 | 29.72 | 755.0 | 59.2 | 15.1 | 66 | S | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0.102 | 2.6 | ..... | Prof. P. Monte. |
| Rome | 29.70 | 754.4 | 29.88 | 758.9 | 59.9 | 15.5 | 62 | S | 16.8 | 7.5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.67 | 753.7 | 29.93 | 760.2 | 63.0 | 17.2 | 38 | WNW | 7.4 | 3.3 | ..... | ..... | 6 | W | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.03 | 737.4 | 29.91 | 759.7 | 63.0 | 17.2 | 76 | NE | 2.5 | 1.1 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.55 | 750.5 | 29.74 | 755.4 | 66.0 | 18.9 | 62 | SE | ..... | ..... | 2 | ..... | 10 | NW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.66 | 753.4 | 29.91 | 759.8 | 59.5 | 15.3 | 61 | NE | 6.9 | 3.1 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.89 | 759.1 | 29.96 | 761.0 | 62.8 | 17.1 | 59 | NW | 3.8 | 1.7 | ..... | ..... | 2 | WSW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.38 | 746.3 | 29.94 | 760.4 | 59.0 | 15.0 | 70 | SSW | 1.8 | 0.8 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. ... Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 9.00 | 762.0 | 30.01 | 762.2 | 54.6 | 12.6 | 78 | N | 5.8 | 2.6 | ..... | ..... | 2 clouds | ..... | N | 0 | 0 | Fair | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 2.78 | 756.4 | 29.99 | 761.7 | 56.7 | 13.7 | 86 | NNW | 6.2 | 2.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 2.92 | 752.3 | 29.68 | 753.9 | 61.1 | 16.2 | 78 | NW | 6.3 | 3.8 | ..... | 0 | 0 | ..... | ..... | 0.010 | 0.25 | Clear | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöpration of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.09 | 637.1 | 30.21 | 767.3 | 48.6 | 9.2 | 42 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Fine | Prof. L. Perez. |
| Leon | 24.44 | 620.9 | 30.10 | 764.6 | 61.2 | 16.2 | 66 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.13 | 587.5 | 30.15 | 765.9 | 53.6 | 12.0 | 47 | NW | 0.7 | 0.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 57.7 | 14.3 | 48 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. V. de Leon, M. E. |
| Tlacotalpam | 29.93 | 760.2 | 29.94 | 760.5 | 72.0 | 22.2 | 87 | E | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Light fog | M. M. Chàzaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.46 | 595.9 | 30.23 | 767.7 | 45.7 | 7.6 | 58 | N | 1.8 | 0.8 | ..... | 0 | 1 | ..... | ..... | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. |
| Colima | 28.40 | 721.3 | 30.0 | 763.4 | 74.1 | 23.4 | 33 | NE | ..... | ..... | 1 | ..... | 1 | ..... | W | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guer |

NOTE.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.17 | 740.8 | 29.17 | 740.8 | 51.8 | 11.0 | ..... | SSE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.016 | 0.4 | ..... | ..... |
| Groningen | 29.26 | 743.1 | 29.31 | 744.5 | 54.7 | 12.6 | ..... | S | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.047 | 1.2 | ..... | ..... |
| Helder | 29.21 | 742.0 | 29.21 | 742.0 | 48.9 | 9.4 | ..... | ESE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.189 | 4.8 | ..... | ..... |
| Hellevoetsluis | 29.17 | 741.0 | 29.17 | 741.0 | 53.6 | 12.0 | 88 | SE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Utrecht | 29.18 | 741.2 | 29.23 | 742.4 | 56.8 | 13.8 | 67 | SSE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.043 | 1.1 | Dull | H. v. d. Brink. |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.61 | 752.2 | 29.67 | 753.6 | 52.2 | 11.2 | 43 | E | 10.3 | 4.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.80 | 756.8 | 29.84 | 757.8 | 50.6 | 10.0 | 50 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.71 | 754.7 | 29.86 | 758.5 | 45.3 | 7.4 | 66 | ENE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | 0.035 | 0.9 | ..... | |
| Tromsö | 29.95 | 760.8 | 30.00 | 761.9 | 36.0 | 2.2 | 61 | NE | 18 | 8 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.96 | 761.1 | 30.16 | 766.0 | 61.5 | 16.4 | 80 | W | 4.9 | 2.2 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 26.62 | 727.0 | 29.66 | 753.3 | 55.4 | 13.0 | 64 | WNW | 21.7 | 9.7 | ..... | ..... | 4 | WNW | ..... | 0.453 | 11.5 | ..... | Dr. A.M. R. dos Santos |
| Funchal, (Madeira) | 30.05 | 763.3 | 30.14 | 765.5 | 65.7 | 18.7 | 73 | S | 3.8 | 1.7 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. da Cunha. |
| Lisbon, Observatory | 29.39 | 746.4 | 29.75 | 755.6 | 57.6 | 14.2 | 57 | WNW | 23.7 | 10.6 | ..... | ..... | 7 | ..... | ..... | 0.699 | 17.0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.13 | 765.3 | 30.20 | 767.1 | 65.1 | 18.4 | 69 | WNW | 5.6 | 2.5 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| Bartholomew Dias | | | | A. G. da Silva Cost, Com'd.t. |
| D. Fernando | | | | A.M.de Sand, Com'd't. |
| Duque da Terceira, Santiago, Cape Verd I. | 3 | | D. clouds | C.C.da Fonseca Ferreira, Comd't |
| India | | | | A. D. Pedro, Com'd't. |
| Mindello | | | | J. F. R. R. Bptos, Com'd't. |
| Quanza, St. Thomas, Gulf of Guinea | 1 | SE | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | | | | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto Regina, Rio Grande, Senegambia | | SE | D. clouds | A. Ferreira, 2d Lt. |
| Sá da Bandeira. Ambrizette, S.7° 13', E. 12°52' | 3 | SW | D. clouds | Teixeira da Silva, Com'd't. |
| Sado | | | | Ribeiro de Costa, Com'd't. |
| Tejo. Macao, China | 0 | | Blue sky | J. M. F. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.38 | 746.3 | 29.80 | 756.9 | 44.4 | 6.9 | 66 | E | 13 | 6 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.52 | 749.7 | 29.95 | 760.7 | 35.8 | 2.1 | 82 | E | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds | Astronomical Obs. |
| Dorpat | 29.83 | 757.7 | 30.08 | 764.1 | 36.9 | 2.7 | 77 | E | 4 | 2 | ..... | ..... | 10n;ks | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Welhrauch. |
| St. Petersburg | 30.05 | 763.3 | 30.07 | 763.7 | 39.9 | 4.4 | 66 | SW | 9 | 4 | ..... | ..... | 2s | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.12 | 739.7 | 29.77 | 756.1 | 41.2 | 5.1 | 86 | NE | 4 | 2 | ..... | ..... | 10ks;s | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.64 | 752.9 | 29.71 | 754.7 | 41.5 | 5.3 | 83 | N | 18 | 8 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.49 | 749.1 | 29.51 | 749.6 | 47.8 | 8.8 | 100 | SSE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.62 | 752.3 | 30.19 | 766.9 | 34.5 | 1.4 | 80 | SE | 9 | 4 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.51 | 749.5 | 29.71 | 754.7 | 50.5 | 10.3 | 40 | ESE | 45 | 20 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.90 | 759.5 | 29.92 | 760.0 | 40.5 | 4.7 | 70 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.35 | 720.2 | 29.75 | 755.7 | 56.7 | 13.7 | 62 | E | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.02 | 762.4 | 29.93 | 760.3 | 41.0 | 5.0 | 76 | ENE | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.81 | 757.2 | 30.31 | 769.8 | 35.4 | 1.9 | 63 | W | 2 | 1 | ..... | ..... | 3cs | ..... | ..... | ..... | ..... | Light clouds | Cand. Fatjanow. |
| Kasan | 30.00 | 762.1 | 30.29 | 769.3 | 33.8 | 1.0 | 68 | S | 9 | 4 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Ekaterinburg | 29.28 | 743.6 | 30.26 | 768.5 | 45.7 | 7.6 | 44 | SW | 13 | 6 | ..... | ..... | 1c | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Nukuss | 29.67 | 753.6 | 29.89 | 759.3 | 74.1 | 23.4 | 30 | SSW | 9 | 4 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.52 | 724.3 | 30.07 | 763.8 | 63.3 | 17.4 | 45 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.99 | 761.7 | 30.53 | 775.5 | 18.1 | — 7.7 | 52 | NW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.23 | 767.8 | 30.54 | 775.8 | 19.9 | — 6.7 | 33 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | | | | | | | | | | | | | | | | | | | |
| Peking, (China) | 30.26 | 768.5 | 30.40 | 772.1 | 35.2 | 1.8 | 64 | SE | 13 | 6 | ..... | ..... | 8n | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | | | | | | | | | | | | | | | | | | | Meteorological Obs. |
| Vladivostock | 30.10 | 764.6 | 30.20 | 767.1 | 22.5 | — 5.3 | 59 | W | 45 | 20 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47', E. 48° 34'.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.28 | 743.7 | 29.39 | 746.4 | 60.3 | 15.7 | 71 | SSW | 5.8 | 2.58 | ..... | ..... | 10 | ..... | ..... | 0.066 | 1.68 | Raining | Antonio Rave, Directon. |
| Bilbao, Met. Obs'y | 29.23 | 742.4 | 29.28 | 743.8 | 57.7 | 14.3 | 100 | NW | 8.4 | 3.75 | ..... | ..... | 10 | ..... | ..... | 0.205 | 5.2 | Raining | Prof. Manuel de Navera |
| Burgos, Met. Obs'y | 26.40 | 670.6 | ..... | ..... | 50.7 | 10.4 | 62 | SW | 22.6 | 10.10 | ..... | ..... | 4 | ..... | ..... | 0.197 | 5.0 | Light clouds | Domingo Martin y Perez. |
| Madrid, Royal Osservatory | 27.21 | 691.1 | ..... | ..... | 52.3 | 11.3 | 83 | SW | 8.2 | 3.67 | ..... | 3 | 7 | NW | ..... | 0.740 | 17.8 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.39 | 746.5 | 29.64 | 750.2 | 75.9 | 23.5 | 47 | SSW | 6.7 | 3.00 | ..... | 5 | 4 | ENE | ..... | 0 | 0 | Almost ov'd | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.48 | 723.4 | 29.38 | 746.2 | 47.1 | 8.4 | 87 | WNW | 13.0 | 5.8 | ..... | ..... | 10 | ..... | ..... | 1.413 | 35.9 | Raining | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 30.07 | 763.8 | 30.14 | 765.5 | 66.1 | 18.9 | 83 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.79 | 756.7 | 29.84 | 758.0 | 85.6 | 29.6 | 59 | SE | 2.2 | 1.0 | ..... | 5k | 0 | E | ..... | 0 | 0 | Very cloudy | Federico Faura, S. J. |
| San Fernando, Naval Obs'y. | 29.69 | 754.1 | 29.79 | 756.6 | 55.2 | 12.9 | 87 | WSW | 22.0 | 9.8 | ..... | 0 | 10 | ..... | W | 0.119 | 3.0 | Raining | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W I | 29.94 | 760.5 | 30.03 | 762.8 | 78.8 | 26.0 | 87 | SE | 0 | 0 | ..... | 4ck | 3kn | E | E | 0.118 | 3.00 | Cloudy | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.02 | 762.4 | 30.06 | 763.4 | 36.7 | 2.6 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.97 | 761.2 | 30.02 | 762.5 | 37.4 | 3.0 | 87 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.91 | 759.6 | 29.96 | 760.9 | 39.2 | 4.0 | 77 | SSW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.78 | 756.4 | 29.96 | 760.9 | 46.4 | 8.0 | 86 | S | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.80 | 757.0 | 29.86 | 758.5 | 47.8 | 8.8 | 60 | SE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.86 | 758.4 | 29.93 | 760.3 | 47.5 | 8.6 | 54 | ESE | 9.4 | 4.2 | ..... | ..... | 4 | ..... | SE | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 27.93 | 709.3 | 29.35 | 745.4 | 56.1 | 13.4 | 68 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | The Observatory. |
| Zurich | 27.74 | 704.5 | 29.34 | 745.2 | 64.6 | 18.1 | 31 | SE | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0 | 0 | Cloudy..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —14.9 mm.; Thermometer, +2.7 Cent.; Relative Humidity, 0 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.93 | 760.3 | 52.5 | 11.4 | 70 | SW | 12 | 5.5 | ..... | ..... | 7 | ..... | WNW | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.16 | 766.0 | 80.6 | 27.0 | ..... | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.95 | 760.8 | 63.5 | 17.5 | ..... | S | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.77 | 756.1 | 29.88 | 759.0 | 70.9 | 21.6 | 59 | WSW | ..... | ..... | 3 | ..... | 5ks | ..... | SW | 0 | 0 | D. Clouds ... | Prof. C. V. A. Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.62 | 752.3 | 29.70 | 754.4 | 35.8 | 2.1 | 66 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.51 | 749.5 | 29.82 | 757.4 | 41 | 5.0 | ..... | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | W. R. Bigg. |
| *Chatham, N B | 29.66 | 753.4 | 29.72 | 754.9 | 35 | 1.7 | 67 | SW | 4 | 1.8 | ..... | 5ck | 0 | SW | ..... | 0 | 0 | Fair..... | G. A. Blair. |
| Charlottetown, P. E. Island | 29.72 | 754.9 | 29.77 | 756.1 | 33 | 0.6 | 89 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0.020 | 0.51 | Cloudy..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.48 | 748.8 | 29.68 | 753.9 | 35.8 | 2.1 | 84 | W | ..... | ..... | 4 | ..... | 8s | ..... | ..... | 0 | 0 | Cloudy ..... | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | 29.60 | 751.8 | 29.65 | 753.1 | 44.3 | 6.8 | 92 | Calm | 0 | 0 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Overcast.... | W. H. Bevis. |
| *Father Point, Quebec | 29.63 | 752.6 | 29.65 | 753.1 | 32 | 0.0 | 95 | SW | 15 | 6.7 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light snow.. | J. McWilliams. |
| Fredericton, N. B | 29.71 | 754.6 | 29.77 | 756.1 | 35.8 | 2.1 | 63 | SW | 6 | 2.7 | ..... | 5ck | 0 | W | ..... | 0.02 | 0.5 | Fair..... | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.34 | 745.2 | 30.21 | 767.3 | 26 | — 3.3 | 88 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | James Stewart. |
| Granton, Ontario | 28.90 | 734.0 | 30.04 | 763.0 | 32 | 0.0 | ..... | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear..... | James Grant. |
| *Halifax, N. S | 29.69 | 754.1 | 29.82 | 757.4 | 32 | 0.0 | 77 | W | 4 | 1.8 | ..... | 0 | 2ks | ..... | W | 0 | 0 | Fair..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.61 | 752.1 | 30.00 | 762.0 | 36.3 | 2.4 | 94 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.50 | 749.3 | 29.85 | 758.2 | 35 | 1.7 | 70 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.73 | 755.1 | 29.77 | 756.1 | 35.1 | 1.7 | 83 | SW | 6 | 2.7 | ..... | 8k | 0 | SW | ..... | 0 | 0 | Cloudy..... | C. H. Rigby. |
| Moose Factory, Ontario | 30.01 | 762.2 | 30.05 | 763.3 | 14.2 | — 9.9 | 89 | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy..... | J. R. Nason. |
| *Montreal, Quebec | 29.45 | 748.0 | 29.66 | 753.4 | 35 | 1.7 | 70 | W | 14 | 6.3 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.24 | 742.7 | 29.66 | 761.0 | 31 | — 0.6 | 96 | W | 3 | 1.3 | ..... | 0 | 2ks | ..... | NW | 0 | 0 | Fair..... | Rev. R. Mosley. |
| Peterboro, Ontario | 29.13 | 739.9 | 29.90 | 759.4 | 34.7 | 1.5 | 69 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.27 | 743.4 | 29.99 | 761.7 | 34 | 1.1 | 70 | NW | 8 | 3.6 | ..... | 10c | 0 | W | ..... | Inap. | Inap. | Fair..... | H. Morgan. |
| Port Hastings, N. S | 29.74 | 755.4 | 29.79 | 756.7 | 31.7 | — 0.2 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine..... | Peter Grant. |
| Port Stanley, Ontario | 29.35 | 745.5 | 30.02 | 762.5 | 35 | 1.7 | 71 | NW | 7 | 3.1 | ..... | 5ck | 0 | W | ..... | Inap. | Inap. | Clear. ..... | M. Payne. |
| *Quebec, Quebec | 29.36 | 745.7 | 29.70 | 754.4 | 18 | — 7.8 | 77 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | 0.55 | 1.3 | Heavy snow | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.40 | 746.7 | 29.88 | 758.9 | 31 | — 0.6 | 65 | NW | 12 | 5.4 | ..... | ..... | 5s | ..... | NW | 0 | 0 | Fair..... | W. H. McIntyre. |
| St. Andrews, N. B | 29.72 | 754.9 | 29.78 | 756.4 | 36 | 2.2 | 90 | SW | ..... | ..... | 1 | 5k | 10n | W | ..... | 0 | 0 | Cloudy..... | Dr. Gove. |
| St. John, N. B | 29.63 | 752.6 | 29.80 | 756.9 | 34 | 1.1 | 79 | SW | 12 | 5.4 | ..... | ..... | 10ks | ..... | ..... | 0.02 | 0.5 | Overcast.... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.28 | 743.7 | 30.02 | 762.5 | 33 | 0.6 | 95 | NW | 2 | 0.9 | ..... | 8k | 0 | N | ..... | 0 | 0 | Fair..... | K. Stewart. |
| Stayner, Ontario | 29.16 | 740.7 | 29.97 | 761.2 | 29 | — 1.7 | 79 | NW | 10 | 4.5 | ..... | 10k | 0 | N | ..... | 0 | 0 | Cloudy..... | R. J. Cole. |
| Stratford, Ontario | 28.64 | 727.4 | 29.97 | 761.2 | 31.2 | — 0.4 | 89 | NW | 11 | 4.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.75 | 755.6 | 29.79 | 756.7 | 36 | 2.2 | 76 | W | 8 | 3.6 | ..... | 2ck | 2ks | SW | W | 0.01 | 0.3 | Fair..... | T. C. Hill. |
| *Toronto, Ontario | 29.55 | 750.6 | 29.93 | 760.7 | 35 | 1.7 | 68 | NW | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Magnetic Observatory. |
| Windsor, N. S | 29.73 | 755.1 | 29.82 | 757.4 | 31.0 | — 0.6 | 89 | W | 7 | 3.1 | ..... | ..... | 10k;ks | ..... | ..... | 0 | 0 | Overcast.... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | 29.60 | 751.8 | ..... | ..... | 30.5 | — 0.8 | 100 | NE | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.08 | 2.0 | Cloudy..... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.61 | 752.1 | 29.84 | 757.9 | 38 | 3.3 | 72 | S | 6 | 2.7 | ..... | 2c | 5ks | W | W | 0 | 0 | Fair | |
| Alpena, Michigan | 29.39 | 746.5 | 30.06 | 763.5 | 31 | — 0.6 | 79 | NW | 12 | 5.4 | ..... | ..... | 8s | ..... | NW | 0 | 0 | Cloudy | |
| Atlanta, Georgia | 28.88 | 733.5 | 30.03 | 762.8 | 52 | 11.1 | 53 | S | 6 | 2.7 | ..... | 10k | Sm'e | SW | Calm | 0 | 0 | Cloudy | |
| Atlantic City, New Jersey | 29.93 | 760.2 | 29.95 | 760.7 | 43 | 6.1 | 83 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Augusta, Georgia | 29.93 | 760.2 | 30.11 | 764.8 | 49 | 9.4 | 64 | S | 2 | 0.9 | ..... | 5ck | Sm'e | SW | Calm | 0 | 0 | Fair | |
| Baltimore, Maryland | 29.91 | 759.7 | 29.96 | 761.0 | 43 | 6.1 | 83 | S | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Barnegat, New Jersey | 29.89 | 759.2 | 29.92 | 760.0 | 42 | 5.6 | 90 | SW | 6 | 2.7 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Bismarck, Dakota | 28.26 | 717.8 | 30.11 | 764.8 | 31 | — 0.6 | 89 | S | 4 | 1.8 | ..... | 10c | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Boerne, Texas | 28.57 | 725.7 | 29.86 | 758.4 | 65 | 18.3 | 100 | Calm | 0 | 0 | ..... | 5k | 2ks | NW | NW | 0 | 0 | Cloudy | |
| Boise City, Idaho | 26.86 | 682.2 | 29.82 | 757.4 | 52 | 11.1 | 66 | W | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0.01 | 0.3 | Cloudy | |
| Boston, Massachusetts | 29.68 | 753.9 | 29.83 | 757.7 | 42 | 5.6 | 58 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Brackettville, Texas | 28.89 | 733.8 | 29.90 | 759.4 | 70 | 21.1 | 75 | NE | 8 | 3.6 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Breckenridge, Minnesota | 29.15 | 740.4 | 30.24 | 768.1 | 24 | — 4.4 | 87 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Brownsville, Texas | 29.91 | 759.7 | 29.96 | 761.0 | 75 | 23.9 | 77 | S | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.24 | 742.7 | 29.95 | 760 7 | 34.5 | 1.4 | 74 | SW | 5 | 2.2 | ..... | 5cs | 0 | W | ..... | 0.01 | 0.3 | Fair | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 53 | 11.7 | 14 | W | ..... | ..... | 4 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.43 | 747.5 | 29.72 | 754.9 | 36 | 2.2 | 65 | S | 12 | 5.4 | ..... | 10k | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.48 | 748.8 | 29.87 | 758.7 | 56 | 13.3 | 87 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.11 | 2.8 | Light rain | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.16 | 639.0 | 29.96 | 761.0 | 55 | 12.8 | 33 | N | 4 | 1.8 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Fair | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 43 | 6.1 | 43 | S | ..... | ..... | 4 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.46 | 697.5 | 30.03 | 762.8 | 42 | 5.6 | 100 | SW | 8 | 3.6 | ..... | ..... | Fog | ..... | SW | 0 | 0 | Foggy | |
| Cape Hatteras, N. Carolina | 30.10 | 764.5 | 30.11 | 764.8 | 56 | 13.3 | 75 | SW | 12 | 5.4 | ..... | 1c | Haze | SW | ..... | 0 | 0 | Clear | |
| Cape Henry, Virginia | 29.98 | 761.5 | 30.00 | 762.0 | 50 | 10.0 | 52 | S | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.05 | 763.3 | 30.07 | 763.8 | 57 | 13.9 | 81 | SW | 10 | 4.5 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| Cape May, New Jersey | 29.91 | 759.7 | 29.94 | 760.5 | 46 | 7.8 | 77 | S | 9 | 4.0 | ..... | 5ck | 2s | W | Calm | 0 | 0 | Fair | |
| Castroville, Texas | 29.24 | 742.7 | 29.93 | 760.2 | 68 | 20.0 | 90 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 30.07 | 763.8 | 30.13 | 765.3 | 57 | 13.9 | 75 | SW | 5 | 2.2 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 24.08 | 611.6 | 30.02 | 762.5 | 33 | 0.6 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear | |
| Chicago, Illinois | 29.39 | 746.5 | 30.10 | 764 5 | 37 | 2.8 | 71 | NE | 7 | 3.1 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cincinnati, Ohio | 29.30 | 744.2 | 29.96 | 761.0 | 48 | 8.9 | 85 | NE | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | 0.42 | 10.7 | Light rain | |
| Cleveland, Ohio | 29.28 | 743.7 | 30.03 | 762.8 | 36 | 2.2 | 71 | N | 11 | 4.9 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Fair | |
| Coleman City, Texas | 28.29 | 718.6 | 29.97 | 761.2 | 51 | 10.6 | 72 | N | 14 | 6.3 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Columbus, Ohio | 29.12 | 739.6 | 29.95 | 760.7 | 49 | 9.4 | 71 | NE | 3 | 1.3 | ..... | ..... | 10s | ..... | E | 0 | 0 | Threatening | |
| Concho, Texas | 28.20 | 716.3 | 29.88 | 758.9 | 54 | 12.2 | 61 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.56 | 750.8 | 30.03 | 762.8 | 57 | 13.9 | 69 | NW | 8 | 3.6 | ..... | 0 | 8s | ..... | NW | 0.04 | 1.0 | Fair | |
| Davenport, Iowa | 29.46 | 748.3 | 30.12 | 765.0 | 39 | 3.9 | 64 | NE | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0.58 | 14.7 | Clear | |
| Deadwood, Dakota | 25.35 | 643.9 | ..... | ..... | 41 | 5.0 | 41 | SW | 6 | 2.7 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Decatur, Texas | 28.90 | 734.0 | 30.07 | 763.8 | 55 | 12.8 | 81 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.18 | 741.2 | 29.97 | 761.2 | 55 | 12.8 | 74 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.83 | 630.7 | 30.05 | 763.3 | 37 | 2.8 | 81 | S | 1 | 0.4 | ..... | 0 | 2s | ..... | Calm | 0.10 | 2.5 | Fair | |
| Des Moines, Iowa | 29.24 | 742.7 | 30.15 | 765.8 | 38 | 3.3 | 70 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.41 | 10.4 | Clear | |
| Detroit, Michigan | 29.35 | 745.5 | 30.04 | 763.0 | 34 | 1.1 | 70 | N | 4 | 1.8 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Dodge City, Kansas | 27.55 | 699.8 | 29.90 | 759.4 | 39 | 3.9 | 73 | N | 16 | 7.2 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.46 | 748.3 | 30.18 | 766.6 | 36 | 2.2 | 61 | NE | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Duluth, Minnesota | 29.53 | 750.0 | 30.24 | 768.1 | 33 | 0.6 | 70 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.20 | 741.7 | 29.93 | 760.2 | 62 | 16.7 | 88 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.70 | 754.4 | 29.77 | 756.1 | 38 | 3.3 | 77 | S | 9 | 4.0 | ..... | 8ck | Haze | W | Calm | 0 | 0 | Fair | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 70 | 21.1 | 90 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| El Paso, Texas | 26.30 | 668.0 | ..... | ..... | 49 | 9.4 | 18 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Erie, Pennsylvania | 29.27 | 743.4 | 30.00 | 762.0 | 37 | 2.8 | 71 | W | 5 | 2.2 | ..... | 8c | 0 | W | ..... | 0 | 0 | Fair | |
| Escanaba, Michigan | 29.48 | 74818 | 30.17 | 766.3 | 30 | — 1.1 | 57 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.45 | 722.6 | 30.05 | 763.3 | 53 | 11.7 | 31 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Craig, New Mexico | 25.57 | 649.5 | 29.63 | 752.6 | 40 | 4.4 | 40 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.51 | 642.9 | 30.27 | 768.8 | 49 | 9.4 | 63 | NE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.41 | 747.0 | 29.95 | 760.7 | 54 | 12.2 | 80 | NW | 20 | 8.9 | ..... | ..... | 10s | ..... | Calm | 1.10 | 27.9 | Cloudy | |
| Fort Griffin, Texas | 28.86 | 733.0 | 30.14 | 765.5 | 53 | 11.7 | 61 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.31 | 693.7 | ..... | ..... | 45 | 7.2 | 92 | SE | 14 | 6.3 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Fort McKavett, Texas | 27.80 | 706.1 | 29.71 | 754.6 | 57 | 13.9 | 58 | NE | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.42 | 747.2 | 29.45 | 748.0 | 25 | — 3.9 | 100 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Cloudy | |
| Fort Sill, Indian Territory | 28.82 | 732.0 | 29.92 | 760.0 | 55 | 12.8 | 68 | N | 8 | 3.6 | ..... | 5ck | 5s | N | Calm | 0 | 0 | Cloudy | |
| Fort Stevenson, Dakota | 28.24 | 717.3 | ..... | ..... | 34 | 1.1 | 69 | NE | 1 | 0.4 | ..... | 8ck | 0 | W | ..... | 0 | 0 | Cloudy | |
| Fredericksburg, Texas | 28.29 | 718.6 | 29.82 | 757.4 | 65 | 18.3 | 68 | N | 2 | 0.9 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 29.97 | 761.2 | 30.01 | 762.2 | 70 | 21.1 | 90 | S | 4 | 1.8 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Graham, Texas | 29.00 | 736.6 | 30.06 | 763.5 | 54 | 12.2 | 67 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.46 | 748.3 | 30.13 | 765.3 | 38 | 3.3 | 63 | NE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.15 | 740.4 | 29.93 | 760.2 | 46 | 7.8 | 84 | NE | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.65 | 16.5 | Light rain | |
| Indianola, Texas | 29.99 | 761.7 | 30.02 | 762.5 | 70 | 21.1 | 95 | S | 11 | 4.9 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.96 | 735.6 | 30.09 | 764.3 | 57 | 13.9 | 58 | N | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.13 | 765.3 | 30.16 | 766.1 | 59 | 15.0 | 70 | E | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.37 | 746.0 | 29.99 | 761.7 | 43 | 6.1 | 83 | NE | 13 | 5.8 | ..... | 0 | 4s | ..... | Calm | 0.95 | 24.1 | Fair | |
| Key West, Florida | 30.11 | 764.8 | 30.14 | 765.5 | 69 | 20.6 | 70 | E | 9 | 4.0 | ..... | 5k | 0 | SE | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 30.03 | 762.8 | 30.05 | 763.3 | 49 | 9.4 | 85 | SW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Knoxville, Tennessee | 28.94 | 735.1 | 29.94 | 760.5 | 49.5 | 9.7 | 79 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 0.44 | 11.2 | Threatening | |
| La Crosse, Wisconsin | 29.44 | 747.8 | 30.20 | 767.1 | 39 | 3.9 | 55 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.11 | 663.2 | 30.26 | 768.6 | 44 | 6.7 | 37 | Calm | 0 | 0 | ..... | 10cs | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Laredo, Texas | 29.55 | 750.6 | 29.88 | 758.9 | 74 | 23.3 | 40 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.18 | 741.2 | 30.03 | 762.8 | 48 | 8.9 | 85 | NE | 12 | 5.4 | ..... | ..... | 10s | ..... | ..... | 0.94 | 23.9 | Cloudy | |
| Los Angeles, California | 29.73 | 755.1 | 30.07 | 763.8 | 50.0 | 10.0 | 86 | NW | 1 | 0.4 | ..... | 0 | 1s | ..... | Calm | 0.09 | 2.3 | Clear | |
| Louisville, Kentucky | 29.34 | 745.2 | 29.90 | 759.4 | 47 | 8.3 | 85 | E | 8 | 3.6 | ..... | ..... | 10n | ..... | NE | 0.71 | 18.0 | Light rain | |
| Lynchburg, Virginia | 29.28 | 743.7 | 29.96 | 761.0 | 50 | 10.0 | 45 | W | 1 | 0.4 | ..... | 0 | 8ks | ..... | Calm | 0 | 0 | Cloudy | |
| Madison, Wisconsin | 29.15 | 740.4 | 30.17 | 766.3 | 33 | 0.6 | 70 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.43 | 747.5 | 30.16 | 766.1 | 32 | 0.0 | 59 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.41 | 721.6 | 30.16 | 766.1 | 58 | 14.4 | 64 | N | 12 | 5.4 | ..... | 0 | 2s | ..... | NE | 0 | 0 | Fair | |
| Memphis, Tennessee | 29.54 | 750.3 | 29.85 | 758.2 | 57 | 13.9 | 93 | SE | 4 | 1.8 | ..... | 0 | 8ks | ..... | W | 0.63 | 16.0 | Cloudy | |
| Milwaukee, Wisconsin | 29.39 | 746.5 | 30.14 | 765.5 | 38 | 3.3 | 63 | N | 14 | 6.3 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Mobile, Alabama | 30.02 | 762.5 | 30.06 | 763.5 | 60 | 15.6 | 91 | S | 8 | 3.6 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| Montgomery, Alabama | 29.83 | 757.7 | 30.06 | 763.5 | 51 | 10.6 | 72 | Calm | 0 | 0 | ..... | 8k | 0 | SW | ..... | 0 | 0 | Fair | |
| Morgantown, West Virginia | 28.89 | 733.8 | 29.95 | 760.7 | 44 | 6.7 | 60 | Calm | 0 | 0 | ..... | 0 | 10ks | ..... | SW | 0 | 0 | Cloudy | |
| Mt. Washington, N. H. | 23.30 | 591.8 | 29.66 | 753.4 | 14 | —10.0 | 100 | NW | 54 | 24.1 | ..... | ..... | 10n | ..... | NW | 0.02 | 0.5 | Light snow | |
| Nashville, Tennessee | 29.30 | 744.2 | 29.83 | 757.7 | 57 | 13.9 | 81 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.23 | 5.8 | Cloudy | |
| New Haven, Connecticut | 29.79 | 756.7 | 29.91 | 759.7 | 42 | 5.6 | 74 | Calm | 0 | 0 | ..... | ..... | 10s;hz | ..... | Calm | 0 | 0 | Cloudy | |
| New London, Connecticut | 29.88 | 758.9 | 29.93 | 760.2 | 40 | 4.4 | 82 | W | 9 | 4.0 | ..... | ..... | 10ks | ..... | W | Inap. | Inap. | Cloudy | |
| New Orleans, Louisiana | 29.98 | 761.5 | 30.04 | 763.0 | 62 | 16.7 | 88 | S | 7 | 3.1 | ..... | 0 | 2s | ..... | SW | 0 | 0 | Fair | |
| Newport, Rhode Island | 29.86 | 758.4 | 29.91 | 759.7 | 40 | 4.4 | 91 | SW | 9 | 4.0 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light rain | |
| New York, New York | 29.76 | 755.9 | 29.94 | 760.5 | 37 | 2.8 | 80 | SW | 6 | 2.7 | ..... | ..... | 10s;fg | ..... | Calm | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 29.95 | 760.7 | 30.01 | 762.2 | 48 | 8.9 | 70 | SW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.25 | 692.1 | 29.96 | 761.0 | 27 | — 2.8 | 82 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| Olympia, Washington Ter. | 29.66 | 753.4 | 29.70 | 754.4 | 49.2 | 9.6 | 85 | SW | 1 | 0.4 | ..... | ..... | 10n | ..... | ..... | 0.09 | 2.3 | Light rain | |
| Omaha, Nebraska | 28.98 | 736.1 | 30.10 | 764.5 | 39 | 3.9 | 64 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.36 | 9.1 | Clear | |
| Oswego, New York | 29.57 | 751.1 | 29.89 | 759.2 | 38 | 3.3 | 81 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pembina, Dakota | 29.32 | 744.7 | 30.20 | 767.1 | 21 | — 6.1 | 100 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pa | 29.89 | 759.2 | 29.94 | 760.5 | 39 | 3.9 | 91 | W | 6 | 2.7 | ..... | ..... | 10s;sme | ..... | Calm | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.75 | 730.2 | 30.54 | 775.7 | 57 | 13.9 | 47 | E | 2 | 0.9 | ..... | 8c | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Pike's Peak, Colorado | 17.79 | 451.9 | 30.00 | 762.0 | 16 | — 8.9 | 66 | SW | 24 | 10.7 | ..... | ..... | Fog | ..... | ..... | 0.18 | 4.6 | Foggy | |
| Pioche, Nevada | 23.82 | 605.0 | 29.59 | 751.6 | 43 | 6.1 | 28 | S | 8 | 3.6 | ..... | 5cs | 2s | SW | Calm | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 29.14 | 740.1 | 29.96 | 761.0 | 42 | 5.6 | 83 | NW | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.3 | Light rain | |
| Port Huron, Michigan | 29.34 | 745.2 | 30.02 | 762.5 | 36 | 2.2 | 61 | N | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Portland, Maine | 29.72 | 754.9 | 29.78 | 756.4 | 36 | 2.2 | 71 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Portland, Oregon | 29.72 | 754.9 | 29.82 | 757.4 | 49.5 | 9.7 | 93 | SE | 5 | 2.2 | ..... | ..... | 10n | ..... | S | 0.18 | 4.6 | Light rain | |
| Prescott, Arizona | 24.65 | 626.1 | 30.01 | 762.2 | 43 | 6.1 | 75 | SW | 1 | 0.4 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Pilot Point, Texas | 29.05 | 737.9 | 29.86 | 758.4 | 61 | 16.1 | 94 | SE | 1 | 0.4 | ..... | 8k | 0 | S | ..... | 0 | 0 | Cloudy | |
| Punta Rassa, Florida | 30.17 | 766.3 | 30.18 | 766.6 | 62 | 16.7 | 67 | E | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Red Bluff, California | 29.59 | 751.6 | 29.96 | 761.0 | 50 | 10.0 | 86 | SE | 13 | 5.8 | ..... | ..... | 10ks | ..... | SE | 0.09 | 2.3 | Cloudy | |
| Rio Grande City, Texas | 29.77 | 756.1 | 29.98 | 761.5 | 69 | 20.6 | 90 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rochester, New York | 29.29 | 744.0 | 29.92 | 760.0 | 37 | 2.8 | 63 | W | 11 | 4.9 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |
| Roseburg, Oregon | 29.28 | 743.7 | 29.84 | 757.9 | 47.0 | 8.3 | 96 | E | 4 | 1.8 | ..... | 0 | 8s | ..... | SE | 0.41 | 10.4 | Cloudy | |
| Sacramento, California | 29.95 | 760.7 | 30.04 | 763.0 | 49.1 | 9.5 | 72 | SW | 5 | 2.2 | ..... | 1c | 1s | N | W | 0.32 | 8.1 | Fair | |
| St. Louis, Missouri | 29.36 | 745.7 | 29.93 | 760.2 | 48 | 8.9 | 85 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0.14 | 3.6 | Cloudy | |
| St. Marks, Florida | 30.13 | 765.3 | 30.15 | 765.8 | 46 | 7.8 | 92 | NW | 1 | 0.4 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.32 | 744.7 | 30.18 | 766.6 | 36 | 2.2 | 53 | NE | 3 | 1.3 | ..... | 0 | Haze | ..... | ..... | Inap. | Inap. | Clear | |
| Salt Lake City, Utah | 25.42 | 645.7 | 29.75 | 755.6 | 52 | 11.1 | 47 | SE | 4 | 1.8 | ..... | ..... | 10ks | ..... | SW | 0.04 | 1.0 | Cloudy | |
| San Antonio, Texas | 29.34 | 745.2 | 29.90 | 759.4 | 70 | 21.1 | 90 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| San Diego, California | 30.04 | 763.0 | 30.11 | 764.8 | 53 | 11.7 | 100 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.37 | 746.0 | 30.06 | 763.5 | 37 | 2.8 | 71 | N | 14 | 6.3 | ..... | ... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Sandy Hook, New Jersey | 29.93 | 760.2 | 29.96 | 761.0 | 40 | 4.4 | 73 | SW | 9 | 4.0 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| San Francisco, California | 30.00 | 762.0 | 30.06 | 763.5 | 50.8 | 10.4 | 65 | W | 11 | 4.9 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Santa Fé, New Mexico | 23.32 | 592.3 | 29.86 | 758.4 | 34 | 1.1 | 75 | Calm | 0 | 0 | ..... | 1k | 0 | Calm | ..... | 0.40 | 10.2 | Clear | |
| Savannah, Georgia | 30.05 | 763.3 | 30.14 | 765.5 | 58 | 14.4 | 64 | SW | 7 | 3.1 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.69 | 754.1 | 29.90 | 759.4 | 69 | 20.6 | 85 | W | 7 | 3.1 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Silver City, New Mexico | 24.30 | 617.2 | 30.55 | 776.0 | 41 | 5.0 | 33 | Calm | 0 | 0 | ..... | 0 | 8s | ..... | W | 0 | 0 | Fair | |
| Smithville, North Carolina | 30.10 | 764.5 | 30.13 | 765.3 | 57 | 13.9 | 87 | SW | 8 | 3.6 | ..... | 2ck | 2s | SW | Calm | 0 | 0 | Fair | |
| Springfield, Massachusetts | 29.72 | 754.9 | 29.86 | 758.4 | 39 | 3.9 | 82 | S | 7 | 3.1 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| Stockton, Texas | 27.11 | 688.6 | 30.11 | 764.8 | 48 | 8.9 | 56 | NW | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Thatcher's Island, Mass | 29.78 | 756.4 | 29.83 | 757.7 | 38 | 3.3 | 63 | W | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Toledo, Ohio | 29.34 | 745.2 | 30.04 | 763.0 | 39 | 3.9 | 55 | N | 10 | 4.5 | ..... | 8c | 2s | NW | W | 0 | 0 | Cloudy | |
| Tucson, Arizona | 27.50 | 698.5 | 30.05 | 763.3 | 51 | 10.6 | 52 | SE | 1 | 0.4 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Umatilla, Oregon | 29.31 | 744.5 | 29.80 | 756.9 | 51.0 | 10.6 | 86 | NE | 4 | 1.8 | ..... | 8ck | 0 | S | ..... | 0 | 0 | Cloudy | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 29 | — 1.7 | 100 | SW | ..... | ..... | 6 | ..... | 10s | ..... | SW | 0.22 | 5.6 | Threatening | |
| Uvalde, Texas | 29.12 | 739.6 | 29.93 | 760.2 | 66 | 18.9 | 79 | NE | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Vicksburg, Mississippi | 29.73 | 755.1 | 29.98 | 761.5 | 63 | 17.2 | 83 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Virginia City, Montana | 24.11 | 612.4 | 29.59 | 751.6 | 36 | 2.2 | 71 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Visalia, California | 29.71 | 754.6 | 30.09 | 764.3 | 49 | 9.4 | 85 | N | 2 | 0.9 | ..... | 1c | 5ks | Calm | Calm | 0.13 | 3.3 | Fair | |
| Washington, D. C. | 29.84 | 757.9 | 29.96 | 761.0 | 41 | 5.0 | 78 | SW | 2 | 0.9 | ..... | 5cs | 5s;sm | NW | W | 0 | 0 | Smoky | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 47 | 8.3 | 62 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.02 | 762.5 | 30.10 | 764.5 | 55 | 12.8 | 80 | SW | 7 | 3.1 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.37 | 644.4 | 29.73 | 755.1 | 41 | 5.0 | 91 | SW | 12 | 5.4 | ..... | ..... | 10ks | ..... | SW | 0.01 | 0.3 | Cloudy | |
| Wood's Holl, Mass | 29.85 | 758.2 | 29.89 | 759.2 | 40 | 4.4 | 82 | SW | 22 | 9.8 | ..... | ..... | 10n | ..... | SW | 0.05 | 1.3 | Light rain | |
| Yankton, Dakota | 28.91 | 734.3 | 30.28 | 769.1 | 26 | — 3.3 | 75 | NW | 1 | 0.4 | ..... | 5c | 0 | NW | ..... | 0.01 | 0.3 | Fair | |
| Yuma, Arizona | 29.79 | 756.7 | 29.96 | 761.0 | 59 | 15.0 | 43 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.37 | 720.6 | 29.77 | 756.1 | 50 | 10.0 | 86 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.07 | 763.8 | 30.12 | 765.0 | 69 | 20.6 | 64 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A. | 25.21 | 640.3 | ..... | ..... | 69.0 | 20.6 | 78 | Calm | 0 | 0 | ..... | 2cs | 5ks | ..... | ..... | 0.10 | 2.5 | ..... | Thomas Herran. |
| Navassa, W. I. | 29.94 | 760.5 | 30.02 | 762.5 | 78 | 25.6 | ..... | NE | 8.3 | 3.7 | ..... | ..... | ..... | ..... | ..... | 1.35 | 34.3 | Cloudy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 29.99 | 761.7 | 29.99 | 761.7 | 79 | 26.1 | 91 | NE | ..... | ..... | 3 | ..... | 8ks | E | ..... | 0 | 0 | Cloudy | C. J. Hering. |
| Santiago de Cuba, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A. | 29.82 | 757.4 | 29.88 | 758.9 | 3.0 | —16.1 | 87 | S | 15 | 6.7 | ..... | 2c | 1s | N | N | 0 | 0 | Fair | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 2,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,861 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft, or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

## UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.98 | 761.5 | 50 | 10.0 | 49 | 9.4 | 85 | W | 20 | 8.9 | ..... | ..... | 2 | ..... | WNW | 0.185 | 4.70 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 30.25 | 768.3 | 65 | 18.3 | 65 | 18.3 | 84 | SW | 17 | 7.6 | ..... | ..... | 5 | ..... | W | 0 | 0 | ..... | ..... | Fair..... | |
| Navy Yard, Portsmouth, N.H | 29.84 | 757.9 | 60 | 15.6 | 33 | 0.6 | 90 | SSW | 2 | 0.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Snowing..... | |
| Naval Hospital, Yokohama, Japan..... | *29.68‡ | 753.9‡ | ..... | ..... | 62 | 16.7 | 72 | Calm | ..... | ..... | 0 | ..... | 1ck | ..... | Calm | Slight | Slight | ..... | ..... | Clear..... | |
| Adams, Panama ..... | *29.96 | 761.0 | 80 | 26.7 | 78 | 25.6 | 91 | NW | ..... | ..... | 2 | ..... | 5 | ..... | NW | ..... | ..... | ..... | ..... | Fair ..... | |
| Alaska, Sitka, Alaska..... | 29.46‡ | 748.3‡ | ..... | ..... | 40 | 4.4 | 83 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | D. clouds..... | |
| Alliance, Naples, Italy..... | 29.92‡ | 760.0‡ | ..... | ..... | 61 | 16.1 | 71 | SSW | ..... | ..... | 0–1 | ..... | 8 | ..... | S; W | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Ashuelot, Hong-Kong, China. ...* | 29.89‡ | 759.2‡ | ..... | ..... | 70 | 21.1 | 95 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Hazy..... | |
| Canonicus, New Orleans, La.....* | 30.10 | 764.5 | 48 | 8.9 | 67 | 19.4 | 89 | SE | ..... | ..... | 2 | ..... | 2 | ..... | SE | ..... | ..... | ..... | ..... | Fair ..... | |
| Colorado, New York, N. Y..... | 29.90 | 759.4 | 41 | 5.0 | 39 | 3.9 | 74 | SW | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Misty..... | |
| Constitution Lisbon, Portugal..... | 29.76‡ | 755.9‡ | ..... | ..... | 58 | 14.4 | 70 | W | ..... | ..... | 6 | ..... | 7 | ..... | E | ..... | ..... | ..... | ..... | Squally..... | |
| Despatch, Genoa, Italy..... | 29.70‡ | 754.4‡ | ..... | ..... | 55 | 12.8 | 100 | SE | ..... | ..... | 6 | ..... | 10 | ..... | SE | ..... | ..... | Smooth | ..... | Rainy ..... | |
| Franklin, Norfolk, Va.....* | 30.14 | 765.5 | 66 | 18.9 | 48 | 8.9 | 70 | SW | 9.6 | 4.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Gettysburg, Genoa, Italy ..... | 29.72‡ | 754.9‡ | ..... | ..... | 55 | 12.8 | ? | SE | ..... | ..... | 6 | ..... | 10 | ..... | S; E | 0.10 | 2.5 | ..... | S | Rainy ..... | |
| Hartford, Montevideo, Uruguay.* | 30.02 | 762.5 | 65 | 18.3 | 71 | 21.7 | 66 | NNE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair ..... | |
| Michigan, Erie, Pa.....† | 29.95‡ | 760.7‡ | ..... | ..... | 34 | 1.1 | 73 | W | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Fair..... | |
| Monocacy, Shanghai, China.....* | 30.06‡ | 763.5‡ | ..... | ..... | 52 | 11.1 | 47 | ENE | ..... | ..... | 4–6 | ..... | 10 | ..... | ENE | ..... | ..... | ..... | ..... | Squally..... | |
| Monongahela Yokohama, Japan .....* | 29.65‡ | 753.1‡ | ..... | ..... | 62 | 16.7 | 77 | NNW | ..... | ..... | 1–2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Blue sky..... | |
| New Hampshire, Port Royal, S. C.....* | 30.18 | 766.6 | 59 | 15.0 | 57 | 13.9 | 75 | SW | 15. | 6.7 | ..... | ..... | 2 | ..... | SW | 0 | 0 | ..... | ..... | Clear. ..... | |
| Onward, Callao, Peru.....†* | 30.00 | 762.0 | ..... | ..... | 69 | 20.6 | 90 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | ..... | ..... | Long | W | Fair..... | |
| Palos, Tientsin, China.....* | 30.48 | 774.2 | 65 | 18.3 | 33 | 0.6 | 65 | SSE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Fair ..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 38 | 3.3 | 75 | S | ..... | ..... | 2 | ..... | 8 | ..... | N | ..... | ..... | ..... | ..... | Cloudy..... | |
| Pensacola, Caldera, Chili ..... | 30.04‡ | 763.0‡ | ..... | ..... | 68 | 20.0 | 79 | S | 5 | 2.2 | ..... | ..... | 2 | ..... | S | 0 | 0 | Smooth | SW | Clear..... | |
| Plymouth, Portsmouth, N. H..... | 29.83‡ | 757.7‡ | ..... | ..... | 36 | 2.2 | 81 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Snow & hail | |
| Powhatan, Norfolk, Va..... | 30.01‡ | 762.2‡ | ..... | ..... | 49 | 9.4 | 71 | SSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Quinnebaug, Tangier, Morroco..... | 29.80‡ | 756.9‡ | ..... | ..... | 59 | 15.0 | 100 | WSW | ..... | ..... | 6 | ..... | 10 | ..... | WSW | ..... | ..... | ..... | ..... | Raining ..... | |
| Ranger, Amoy, China.....* | 29.86‡ | 758.2‡ | ..... | ..... | 73 | 22.8 | 85 | ESE | ..... | ..... | 1–2 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Richmond, N. 10° 52′, E. 64° 32′..... | 29.85‡ | 758.2‡ | ..... | ..... | 85 | 29.4 | 68 | NNE | ..... | ..... | 1 | ..... | 2 | ..... | NNE | 0 | 0 | Smooth | ..... | Fair ..... | |
| Rio Bravo, Brownsville, Texas..... | 29.94 | 760.5 | 72 | 22.2 | 71 | 21.7 | 100 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Santee, Annapolis, Md... ..... | 29.95‡ | 760.7‡ | ..... | ..... | 47 | 8.3 | 70 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Saratoga, N. 36° 10′, W. 64° 05′..... | 30.16‡ | 766.1‡ | ..... | ..... | 56 | 13.3 | 69 | WNW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | Mod'ate | NW | D. clouds..... | |
| St. Louis, League Island, Pa ..... | 29.97‡ | 761.2‡ | ..... | ..... | 39 | 3.9 | 91 | W | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy ..... | |
| Supply, New York, N. Y..... | 29.96‡ | 761.0‡ | ..... | ..... | 41 | 5.0 | 100 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Trenton Genoa, Italy.....* | 29.67‡ | 753.6‡ | ..... | ..... | 56 | 13.3 | 87 | SE | ..... | ..... | 4–6 | ..... | 10 | ..... | N | ..... | ..... | Smooth | ..... | Rainy ..... | |
| Tuscarora, N. 15° 47′, W. 95° 59′....* | 29.91‡ | 759.7‡ | ..... | ..... | 72 | 22.2 | 76 | NNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Vandalia Boston, Mass.....† | 29.99‡ | 761.7‡ | ..... | ..... | 39 | 3.9 | 100 | SW | ..... | ..... | 2 | ..... | 10 | ..... | WSW | ..... | ..... | ..... | ..... | Misty..... | |
| Wabash, Boston, Mass..... | 29.98‡ | 761.5‡ | ..... | ..... | 36 | 2.2 | 90 | SW | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Wyoming, Jaffa, Syria.....* | 29.92‡ | 760.0‡ | ..... | ..... | 66 | 18.9 | 89 | W | ..... | ..... | 2–3 | ..... | 2 | ..... | W | ..... | ..... | Long | W | Clear ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | SEA-SWELL | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | CHARACTER. | DIRECTION FROM— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From - | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Tokio, Capt. Maury N. 37° 37′, W. 130° 26′ | | 30.11‡ | 764.8‡ | 56 | 13.3 | | W | | | 7 | | 7ck | | | 0 | Heavy | NW | Squally | L. B. Walls. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota, Capt. H. G. Morse, Seattle, Washington Ter. †* | | 30.02‡ | 762.5‡ | | | | SE | | | 2 | | 10 | | | 0 | None | | Fine | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, S. 30° 25′, E. 179° 55′ | | 29.97‡ | 761.2‡ | | | | ESE | | | 2 | | 5 | | S | | Long; slow | SE | Fine | R. C. Ghest, 1st Officer |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, N. 43° 40′, W. 150° 53′ * | | 30.29‡ | 769.4‡ | 48 | 6.1 | 100 | SSE | | | 5 | | ks | | SW | 0 | Rough | SE | Misty | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, Yokohama, Japan † * | | 29.72‡ | 754.9‡ | 64 | 17.8 | 94 | N | | | 4 | | k | | N | 0 | Smooth | N | D. clouds | Capt. W. H. Kidley |
| § S. S. Oceanic, Capt. J. Metcalf, N. 34° 30′, E. 160° 23′ | | 30.12‡ | 765.0‡ | 64 | 17.8 | 100 | SSW | | | 4 | | 6 | | WSW | 3 | | S | D. clouds | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. §The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the date may be in error one day; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressed. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 38° 09′, W. 66° 37′ | | 30.14‡ | 765.5‡ | 56.0 | 13.3 | 97 | N | | | 4 | | 10 | | N | 0 | Mod'ate | NW | Cloudy | Capt. C. Undütsch. |
| S. S. Leipzig, N. 49° 38′, W. 16° 21′ | | 29.26‡ | 742.9‡ | 50.0 | 10.0 | 64 | NNE | | | 6-7 | | 8 | | NNW | 10hours | Rough | NW | Rain & hail | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, Capt. G. Meyer, Baltimore, Md. * | | 30.00‡ | 762.0‡ | | | | SW | | | 3 | | 10 | | S | | | | Raining | G. Risius, 3rd Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | CHARACTER. | DIRECTION FROM— | | |
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| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Philadelphia, Pa | | 30.06‡ | 763.5‡ | 40 | 4.4 | | NW | | | 5 | | 8 | | NW | 0 | | | Cloudy | Captain Sargent |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| Peruvian | | | | | | | | | | | | | | | | | | | J. Powell, 4th Officer. |
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| Furnished by the cooperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
| Brigantine "George," of Halifax | | | | | | | | | | | | | | | | | | | Willard N. Pratt. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

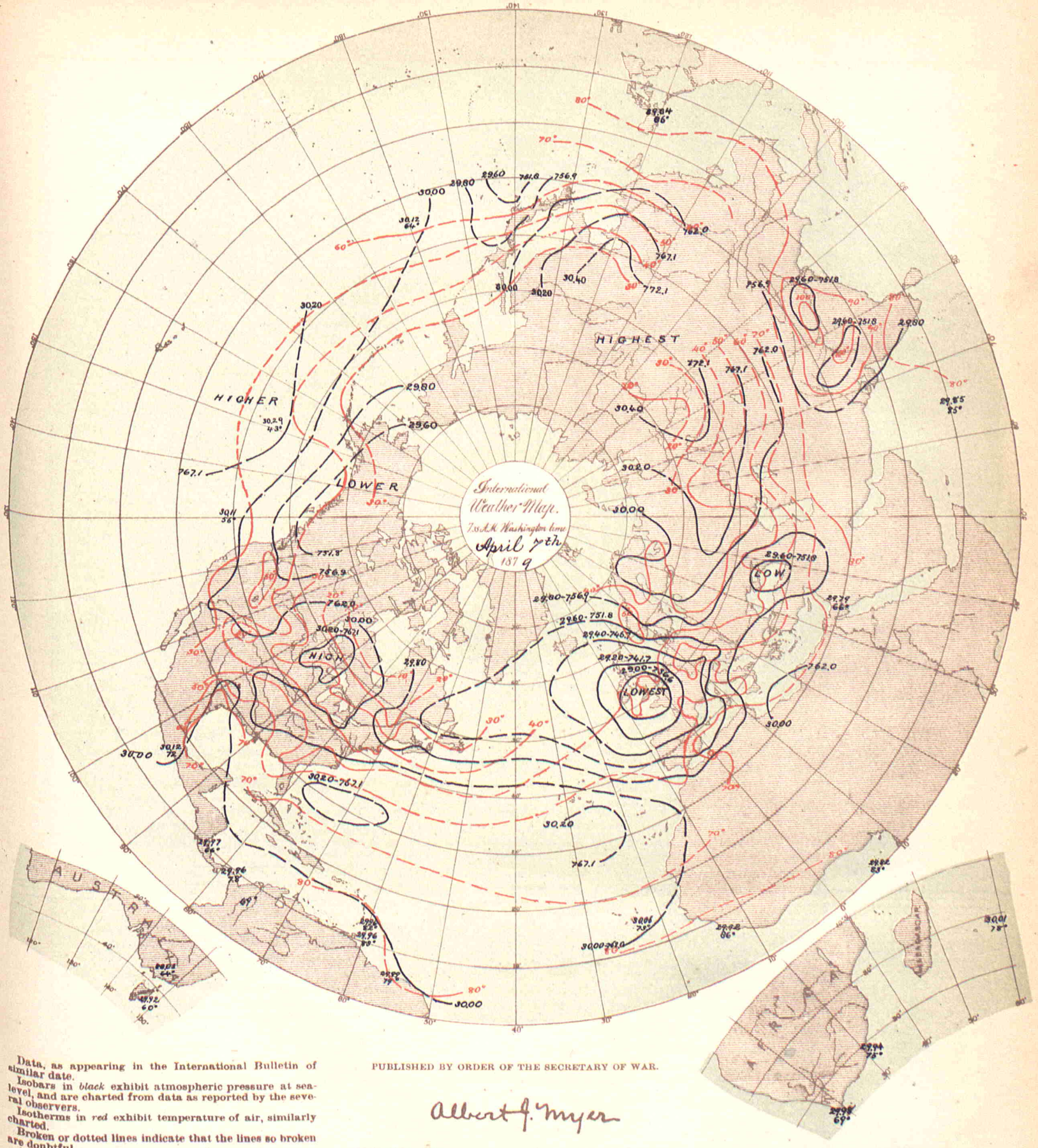
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assgd.) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSGD,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIOAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 8, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGEGIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 29.91 | 759.6 | 65.8 | 18.8 | 72 | WNW | | | 2 | | 8 | | | 0 | 0 | Very cloudy | Kesxuche. |
| Algiers | | | 29.74 | 755.4 | 66.5 | 18.6 | 59 | W | | | 8 | | 0 | | | 0.283 | 7.2 | Clear | Tourillere. |
| La Calle | | | 29.74 | 755.5 | 61.9 | 16.6 | 80 | ENE | | | 1 | | 10 | | | 0.488 | 12.4 | Covered | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 29.77 | 756.2 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 29.91 | 759.6 | 72.5 | 22.5 | 32 | W | | | 6 | | 8 | | | 0 | 0 | Very cloudy | Herbin. |
| Tebessa | | | 29.84 | 757.8 | 46.0 | 7.8 | 61 | SW | | | 4 | | 10 | | | 0.268 | 6.8 | Raining | Watrin. |
| Geriville | | | 29.99 | 761.7 | 57.0 | 13.9 | 60 | W | | | 4 | | 0 | | | 0.118 | 3.0 | Clear | Brugnlaux. |
| Laghouat | | | 29.87 | 758.6 | 63.3 | 17.4 | 66 | W | | | 3 | | 0 | | | 0 | 0 | Clear | Bertrand. |
| Biskra | | | 29.85 | 758.1 | 72.3 | 22.4 | 22 | NW | | | 3 | | 5 | | | 0 | 0 | Cloudy | Chanvaux. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—In the originals the amount of cloudiness is given by the scale 0-4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 830? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 28.99 | 736.3 | 29.52 | 749.9 | 61.5 | 16.4 | 45 | S | | | 5 | | 7 | | | 0 | 0 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 28.75 | 730.3 | 29.50 | 749.4 | 57.9 | 14.4 | 63 | NNE | | | 1 | | 10 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 28.70 | 729.0 | 29.58 | 751.3 | 48.6 | 9.2 | 89 | S | | | 1 | | 10sn | | N | 0.104 | 2.65 | | Julius Mikolik. |
| Gratz | 28.24 | 717.4 | 29.46 | 748.3 | 57.2 | 14.0 | 60 | SW | | | 5 | | 10 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28 24 | 717.3 | 29.63 | 752.5 | 63.5 | 17.5 | 53 | SE | | | 2 | | 7 | | | 0 | 0 | | Prof. A. Gottschling. |
| Kremsmünster | 27.93 | 709.4 | 29.20 | 741.7 | 65.5 | 18.6 | 49 | ENE | | | 3 | | 6 | | | 0 | 0 | | Prof. C. Wagner. |
| Lemberg | 28.67 | 728.1 | 29.66 | 753.3 | 45.9 | 7.7 | 82 | SE | | | 1 | | 10 | | | 0.343 | 8.7 | | Dr. T. Stanecki. |
| Pola | 29.47 | 748.4 | 29.58 | 751.3 | 55.0 | 12.8 | 93 | SE | | | 4 | | 10 | | | 0.059 | 1.5 | | I.R.Hydrographic Office |
| Szathmar | 29.33 | 745.0 | 29.79 | 756.7 | 56.8 | 13.8 | 60 | E | | | 3 | | 10 | | | 0.079 | 2.0 | | Julius Csics, S. J. |
| Szegedin | 29 31 | 744.4 | 29.58 | 751.3 | 63.7 | 17.6 | 41 | S | | | 3 | | 8 | | | 0.008 | 0.20 | | Karl Stancel. |
| Trieste | 29.49 | 749.1 | 29.60 | 751.7 | 55.9 | 13.3 | 85 | S | | | 2 | | 10 | | | 0.394 | 10 0 | Rainy | P. Busin. |
| Vienna | 28.69 | 726.4 | 29.28 | 743.7 | 67.6 | 19.8 | 39 | NE | | | 3 | | 8 | | | 0 | 0 | | I. R. Central Met. Obs'y |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.10 | 739.0 | 29.29 | 743.9 | 53.2 | 11.8 | 81 | ESE | | | 1 | | 10 | | SE | 0.486 | 12.35 | Raining | Royal Observatory. |
| Furnes | 29.27 | 743.4 | 29.29 | 744.0 | 54.1 | 12.3 | 77 | SSW | | | 2 | | 8 | | | 0.071 | 1.8 | | M. E. de Cae. |
| Maeseyck | 29.12 | 739.7 | 29.25 | 742.9 | 55.9 | 13.3 | 87 | WSW | | | 2 | | 10 | | | 0.075 | 1.9 | | M. Pierrot. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.30 | 744.2 | 29.40 | 746.7 | 40.0 | 4.4 | ..... | SE | 37 | 16.5 | ..... | ..... | 10 | ..... | ..... | 0.490 | 12.45 | Raining..... | W. Boswell. |
| Ardrossan | 29.18 | 741.2 | 29.19 | 741.4 | 50 | 10.0 | ..... | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Rain & fog.. | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.20 | 741.7 | 44.3 | 6.8 | ..... | NE | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling.... | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.23 | 742.2 | 47.8 | 8.8 | ..... | SSE | 14 | 6.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast.... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.26 | 743.2 | 47.1 | 8.4 | ..... | S | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | Thomas Mackereth. |
| Bradford, Yorkshire | 28.86 | 733.0 | 29.25 | 742.9 | 51.9 | 11.1 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.12 | 3.0 | Overcast.... | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.92 | 760.0 | 29.95 | 760.7 | 81.5 | 27.5 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.28 | 743.7 | 56.0 | 13.3 | ..... | SW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | H. Todd. [C. |
| Cardington | ..... | ..... | 29.26 | 743.2 | 58.0 | 14.4 | ..... | SW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | John McLaren. |
| Chatham, School M. E. | 29.14 | 740.1 | 29.27 | 743.4 | 59.0 | 15.0 | ..... | SW | ..... | ..... | 0 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | J. Carmell, Sapper, R. E. |
| Dartmoor | 27.81 | 706.4 | 29.28 | 743.7 | 40.0 | 4.4 | ..... | W | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Foggy..... | Alexander Watt. |
| Donaghadee | 29.17 | 740.9 | 29.21 | 741.9 | 45 | 7.2 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast.... | J. Mac Gowan. |
| Dover | 29.27 | 743.4 | 29.30 | 744.2 | 47 | 8.3 | ..... | WSW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast.... | J. Costello. |
| Falmouth, Observatory | 29.11 | 739.4 | 29.34 | 745.2 | 50.2 | 10.1 | ..... | NW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Fort Napier, (Natal) | 27.50 | 698.5 | 29.82 | 757.4 | 88.0 | 31.1 | ..... | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky.... | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.76 | 755.9 | 29.99 | 761.7 | 86 | 30.0 | ..... | N | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds.... | |
| Galway, Queen's college | ..... | ..... | 29.20 | 741.7 | 48 | 8.9 | ..... | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast.... | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 29.84 | 757.9 | 29.89 | 759.2 | 58.7 | 14.8 | ..... | W | ..... | ..... | 5 | ..... | 8 | ..... | ..... | Blank | Blank | Gloomy..... | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.03 | 737.3 | 29.24 | 742.7 | 47.9 | 8.8 | ..... | NNE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. [C. |
| Great Yarmouth | 29.28 | 743.7 | 29.28 | 743.7 | 45 | 7.2 | ..... | SE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Misty..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.11 | 739.4 | 29.28 | 743.7 | 55.7 | 13.2 | ..... | WNW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | The staff, for G.B. Airy. |
| Guernsey | 29.11 | 739.4 | 29.34 | 745.2 | 52.5 | 11.4 | ..... | SSW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | Dr. S.E.Hoskins, F.R.S. |
| Helston | 29.41 | 747.0 | 29.49 | 749.0 | 54 | 12.2 | ..... | NW | ..... | ..... | 2 | ..... | 2ck | ..... | ..... | 0.8 | 20. | Fine..... | M. P. Moyle. |
| Holyhead | 29.18 | 741.2 | 29.23 | 742.4 | 47 | 8.3 | ..... | SSE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | John Tilston. |
| Jersey | 29.08 | 738.6 | 29.37 | 746.0 | 50.3 | 10.2 | ..... | WSW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | Blank | Blank | Gloomy ..... | J. Fisher. |
| Kew, Observatory | 29.24 | 742.7 | 29.28 | 743.7 | 54.9 | 12.7 | ..... | W | 11 | 4.9 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | The Meteorological Of. |
| Leicester, Museum | 29.01 | 736.8 | 29.26 | 743.2 | 53.9 | 12.2 | ..... | SW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | Wm,J.Harrison,F.G.S. |
| Malta, Mediterranean | 29.64 | 752.8 | 29.74 | 755.4 | 65.4 | 18.6 | ..... | E | ..... | ..... | 2 | ..... | 4k | ..... | ..... | ..... | ..... | D. clouds.... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.23 | 742.4 | 29.32 | 744.7 | 50 | 10.0 | ..... | ESE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.04 | 763.0 | 73.0 | 22.8 | ..... | S | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 29.08 | 738.6 | 29.27 | 743.4 | 55.9 | 13.3 | ..... | SW | ..... | ..... | 2 | ..... | 9k | ..... | SSW | 0.204 | 5.18 | Overcast.... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 28.74 | 730.0 | 29.26 | 743.2 | 50.1 | 10.1 | ..... | SW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.28 | 743.7 | 54 | 12.2 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky.... | H. E. Bellamy. |
| Plymouth | 29.22 | 742.2 | 29.30 | 744.2 | 54.1 | 12.3 | ..... | SW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | John Merrifield. |
| Roche's Point | 29.22 | 742.2 | 29.29 | 744.0 | 51 | 10.6 | ..... | NW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | Wm. Kennedy. |
| Saint Ann's Head | 29.07 | 738.4 | 29.24 | 742.7 | 45 | 7.2 | ..... | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast.... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 41 | 5.0 | ..... | SE | 36 | 16.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Rev C.Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.78 | 756.4 | 29.85 | 758.2 | 60.8 | 16.0 | ..... | SW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | W. H.Lyne. |
| Sheffield | 29.00 | 736.6 | 29.27 | 743.4 | 54.4 | 12.4 | ..... | S | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0.10 | 2.5 | D. clouds.... | W. F. Cooper. |
| Silloth Rectory | 29.16 | 740.7 | 29.19 | 741.4 | 52.6 | 11.4 | 79 | SE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0.108 | 2.74 | D. clouds.... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 28.87 | 733.3 | 29.27 | 743.4 | 48.5 | 9.2 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast.... | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.06 | 738.1 | 29.27 | 743.4 | 56.4 | 13.6 | ..... | W | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | C. H. Griffith, F. M. S. |
| Thurso | 29.37 | 746.0 | 29.43 | 747.5 | 42 | 5.6 | ..... | ESE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | John Trotter. |
| Truro, Royal Institution | 29.33 | 745.0 | 29.38 | 746.2 | 55 | 12.8 | ..... | NW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | W. Newcombe. |
| Valencia, Observatory | 29.32 | 744.7 | 29.34 | 745.2 | 50.2 | 10.1 | ..... | WNW | 15 | 6.7 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | The Meteorological Of. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.95 | 760.7 | 29.99 | 761.7 | 73 | 22.8 | 54 | NW | 12 | 5.4 | ..... | 8 | 8 | ..... | ..... | 0.050 | 1.27 | Raining..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.92 | 760.0 | 61.0 | 16.1 | 88 | Calm | ..... | ..... | 0 | ..... | 10k | ..... | ..... | 0.02 | 0.5 | Cloudy..... | FrancisAbbott,F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.32 | 744.7 | 45.0 | 7.2 | ..... | E | ..... | ..... | 3 | ..... | 10k | ..... | ..... | 0.38 | 9.8 | Overcast.... | Andrew Gibb. |
| Mauritius, Observatory | 29.81 | 757.2 | 30.00 | 761.9 | 79.2 | 26.2 | 77 | N | 6.5 | 2.9 | ..... | 1 | 3 | ..... | SSE | 0 | 0 | Fine..... | C. Meldrum. |
| Melbourne, Observatory | 29.88 | 758.9 | 29.97 | 761.2 | 60.2 | 15.7 | 92 | S | 4 | 1.8 | ..... | ..... | 4 | ..... | ..... | 0.06 | 1.5 | Fine..... | R. L. J. Ellery. |
| MonachLt-house, (Hebrides) | ..... | ..... | 29.26 | 743.2 | 47 | 8.3 | ..... | E | ..... | ..... | 3 | 5 | 3 | E | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.71 | 754.6 | 44 | 6.7 | ..... | SE | ..... | ..... | 7 | 4 | 8 | SE | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

| British Marine Series. Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 46′, E. 29° 31′ | 1 | WNW | D. clouds.... | Capt. W. J. L. Wharton. |
| Brig Alliance | | | | Capt. W. Scott. |
| S. S. Amanda | | | | Capt. B. Boyes. |
| Barque Belle-Isle, N. 46° 54′, W. 15° 38′ | 3 | W | D. clouds.... | Capt. A. J. Brown. |
| Ship British Commodore | | | | Capt. J. W. Thorne. |
| —— City of Agra, N. °49 44′ W. 4° 52′ | 3 | W | Blue sky.... | Capt. Thos. Young. |
| Barque Commewyne | | | | Capt. A. Buchan. |
| Barque Fedalina, Off Grand Rocas, (N. 11°? W. 62°?) | 0 | Calm | Showery..... | Capt. H. L. Fox. |
| Barque Mertole | | | | Capt. E. W. Turner. |
| S. S. Nizam, N. 24° 06′, E. 118° 35′ | 0 | Calm | Foggy ..... | Capt. Barlow. |
| S. S. Strathleven, | | | | Capt. C. W. Pearson. |
| S. S. Wyberton | | | | Capt. W.R. McMontry. |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturoance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.23 | 666.2 | 29.95 | 760.7 | 67.1 | 19.5 | 96 | SE | ..... | ..... | 2 | 3c | 2ks;s | ..... | E | ..... | 0 | ..... | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The weather is published as given. The elevation of San José is 1,145 meters, or 3,756.6 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.72 | 754.8 | 29.76 | 756.0 | 38.1 | 3.4 | 85 | ESE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 29.57 | 751.1 | 29.59 | 751.6 | 48.0 | 8.9 | 67 | E | ..... | ..... | 6 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.68 | 753.8 | 29.72 | 754.9 | 22.3 | —5.4 | 78 | ENE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Faröe) | 29.61 | 752.0 | 29.64 | 752.9 | 43.9 | 6.6 | 81 | SE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Vestervig | 29.59 | 751.6 | 29.76 | 755.9 | 41.7 | 5.4 | 91 | E | ..... | ..... | 7 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 28.80 | 731.4 | 29.35 | 745.4 | 54.3 | 12.4 | 83 | W | ..... | ..... | 1 | ..... | 5 | NW | W | 0.063 | 1.6 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 29.23 | 742.5 | 29.34 | 745.2 | 54.3 | 12.4 | 76 | ENE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bonvallet, Director. |
| Avignon, Normal School | 29.39 | 746.5 | 29.47 | 748.5 | 48.2 | 9 | 92 | ENE | ..... | ..... | 1 | ..... | 10 | ..... | WSW | 1.358 | 34.5 | Raining | M. Giraud, Director. |
| Bar-sur-Seine | 28.78 | 730.9 | 29.33 | 744.9 | 52.9 | 11.6 | 68 | NW | ..... | ..... | 1 | ..... | 10 | ..... | WNW | 0.319 | 8.1 | Covered | C. Saillard, Director. |
| Beauvais, Normal School | 29.05 | 737.8 | 29.31 | 744.5 | 52.3 | 11.3 | 73 | NNW | ..... | ..... | 1 | ..... | 10 | ..... | WNW | 0.108 | 2.75 | Covered | Frere Eugene Marie, Dir |
| Besançon, Normal School | 28.49 | 723.7 | 29.37 | 746.1 | 50.7 | 10.4 | 73 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.520 | 13.2 | Covered | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.57 | 725.6 | 29.46 | 748.3 | 45.3 | 7.4 | 88 | S | ..... | ..... | 1 | ..... | 10kn | N | S | 1.705 | 43.3 | Raining | M. Marlot, Director. |
| Bourges, Normal School | 28.77 | 730.8 | 29.31 | 744.5 | 52.2 | 11.2 | 71 | W | ..... | ..... | 1 | ..... | 10kn | W | W | 0.335 | 8.5 | Raining | A. Waquet, Director |
| Brest, Naval Observatory | 29.08 | 738.6 | 29.32 | 744.8 | 58.3 | 14.6 | 65 | W | ..... | ..... | 1 | ..... | 8 | ..... | W | 0.089 | 2.25 | ..... | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.06 | 738.0 | 29.47 | 748.5 | 49.8 | 9.9 | 79 | W | ..... | ..... | 1 | ..... | 5 | NW | NW | 0.449 | 11.4 | Cloudy | September, Director. |
| Caen, Normal School | 29.24 | 742.8 | 29.28 | 743.7 | 54.0 | 12.2 | 65 | NW | ..... | ..... | 1 | ..... | 5 | ..... | NW | 0.08 | 2. | Cloudy | M. Lair, Director. |
| Chartres, Normal School | 28.69 | 728.8 | 29.25 | 742.9 | 52.0 | 11.1 | 94 | NW | ..... | ..... | 1 | ..... | 10 | ..... | NE | 0.16 | 4. | Raining | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 28.97 | 735.8 | 29.28 | 743.8 | 53.2 | 11.8 | 67 | SW | ..... | ..... | 1 | ..... | 8 | SW | SW | ..... | ..... | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.04 | 712.1 | 29.36 | 745.6 | 55.0 | 12.8 | 57 | W | ..... | ..... | 2 | ..... | 10 | ..... | W | 0.528 | 13.4 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.48 | 723.5 | 29.33 | 745.0 | 49.1 | 9.5 | 92 | SW | ..... | ..... | 1 | ..... | 10 | ..... | SW | ..... | ..... | Raining | Dr. Coulet, Director. |
| Commune de Grèasque* | 28.32 | 719.4 | 29.47 | 748.4 | 46.6 | 8.1 | 83 | N | ..... | ..... | 1 | ..... | 10 | ..... | SW | 2.252 | 57.2 | Covered | M. Kina, Director. |
| Grenoble, Normal School | 28.68 | 728.5 | 29.45 | 748.1 | 42.8 | 6.0 | 85 | WNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.437 | 11.10 | Raining | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.18 | 741.2 | 29.39 | 746.6 | 55.4 | 13.0 | 70 | W | ..... | ..... | 1 | ..... | 8 | ..... | W | 0.024 | 0.6 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.02 | 737.2 | 29.33 | 744.9 | 52.3 | 11.3 | 80 | W | ..... | ..... | 2 | ..... | 8 | ..... | W | 0.020 | 0.5 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 28.47 | 723.0 | 29.37 | 746.0 | 48.7 | 9.3 | 92 | NE | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.701 | 17.8 | Raining | Baudry, Director. |
| Lorient, Naval Observatory | 29.28 | 743.6 | 29.38 | 746.2 | 54.0 | 12.2 | 78 | SW | ..... | ..... | 3 | ..... | ..... | ..... | SW | 0.189 | 4.80 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Marseilles, Observatory | ..... | ..... | 29.44 | 747.7 | 54.1 | 12.3 | 66 | W | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.322 | 8.20 | Covered | The Staff. |
| Mirecourt, Normal School | 28.24 | 717.4 | 29.27 | 743.4 | 49.3 | 9.6 | 89 | SSW | ..... | ..... | 1 | ..... | 10 | ..... | NNE | 0 20 | 5. | Covered | M. Barbier, Director. |
| Nismes, Normal School | 29.34 | 745.3 | 29.54 | 750.4 | 65.5 | 18.6 | 66 | W | ..... | ..... | 2 | ..... | 2 | ..... | W | 0.699 | 17.75 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 28.42 | 721.8 | 29.50 | 749.2 | 41.7 | 5.4 | 94 | N | ..... | ..... | 1 | ..... | 10 | N | N | 0.98 | 25. | Rain and fog | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.52 | 622.8 | ..... | ..... | 30.9 | — 0.6 | 100 | W | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0.606 | 15.4 | Foggy | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.39 | 746.6 | 29.43 | 747.4 | 58.5 | 14.7 | 68 | WNW | ..... | ..... | 1 | ..... | 8 | WNW | NNW | 0.24 | 6. | ¾ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.24 | 742.6 | 29.32 | 744.8 | 58.6 | 12.0 | 67 | W | ..... | ..... | 2 | ..... | 5 | ..... | W | 0.157 | 4.0 | Cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.31 | 744.4 | 29.34 | 745.2 | 51.8 | 11.0 | 86 | NNW | ..... | ..... | 1 | ..... | 5 | W | W | 0 | 0 | Cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.15 | 740.5 | 29.32 | 744.7 | 51.1 | 10.6 | 76 | NNW | ..... | ..... | 1 | ..... | ..... | ..... | W | 1.57 | 4.0 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.48 | 723.3 | 29.53 | 750.1 | 59.0 | 15 | 58 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | T. Huguet, Director. |
| Toulouse, Observatory | 28.79 | 731.2 | 29.50 | 749.2 | 47.1 | 8.4 | 94 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.283 | 7.2 | Rain & hail | M. Mercadier Julier. |
| Versailles Observatory | 28.81 | 731.8 | 29.31 | 744.4 | 51.1 | 10.8 | 70 | NW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.243 | 6.17 | ..... | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 28.76 | 730.4 | 29.46 | 748.3 | 44.6 | 7 | 100 | SE | ..... | ..... | 2 | ..... | 10 | ..... | S | 0 | 0 | Covered | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.84 | 757.8 | 29.86 | 758.5 | 79.5 | 26.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.24 | 6. | ..... | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 28.81 | 731.8 | 29.43 | 747.4 | 44.6 | 7.0 | 90 | S | ..... | ..... | 2 | ..... | 10 | ..... | S | 1.453 | 36.9 | Raining | Mr. Jays. |
| Mont-Louis | 24.23 | 615.4 | 29.54 | 750.4 | 35.6 | 2.0 | 81 | SE | 13.0 | 5.8 | ..... | ..... | 10 | ..... | ..... | 0 764 | 19.4 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.47 | 748.6 | 59.0 | 15.0 | 78 | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 2.110 | 53.6 | Rainy | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.04 | 737.5 | ..... | ..... | 50.4 | 10.2 | 87 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | W | 0.075 | 1.9 | Raining | Marié Davy, Director. |
| Perpignan | 29.38 | 746.2 | 29.48 | 748.9 | 51.3 | 10.7 | 67 | NW | 7.4 | 3.3 | ..... | ..... | 10 | ..... | ..... | 0.094 | 2.4 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 21.92 | 556.9 | ..... | ..... | 26.4 | —3.1 | ..... | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 1.260 | 32.0 | Snowy | Gen'l de Nansouty. |
| Tours | 29.17 | 741.0 | 29.37 | 746.0 | 55.8 | 13.2 | 66 | W | ..... | ..... | 1 | ..... | 10 | ..... | WNW | 0.016 | 0.4 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 29.95 | 760.8 | 29.98 | 761.4 | 55.0 | 12.8 | 98 | WNW | 5.4 | 2.4 | ..... | ..... | 10 | ..... | ..... | 0.063 | 1.6 | Covered | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.43 | 722.2 | 29.28 | 743.1 | 62.1 | 16.7 | 38 | E | | | 6 | | 1 | | E | | | Thunder-storm. | Prof. Dr. Hoh. |
| Berlin | 29.34 | 745.1 | 29.50 | 749.4 | 56.8 | 13.8 | 55 | SE | | | 1 | | 4 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 28.99 | 736.3 | 29.51 | 749.6 | 56.1 | 13.4 | 63 | E | | | 4 | | 10 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 28.80 | 731.4 | 29.20 | 741.6 | 60.1 | 15.6 | 45 | SW | | | 2 | | 10 | S | | 0.882 | 22.4 | | Albert Sens. |
| Cassel | 28.68 | 728.5 | 29.28 | 743.6 | 62.2 | 16.8 | 51 | ENE | | | 3 | | 8 | E | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.09 | 738.8 | 29.24 | 742.8 | 60.4 | 15.8 | 57 | E | | | 4 | | 9 | | | 0.08 | 2 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 28.90 | 734.0 | 29.26 | 743.2 | 62.2 | 16.8 | | ENE | | | 2 | | 9 | | | 0 | 0 | | Physical Society. |
| Freienwalde on the Oder | | | | | | | | | | | | | | | | | | | Assmann., M. D. |
| Friedrichshafen | 27.83 | 706.8 | 29.19 | 741.5 | 63.3 | 17.4 | 45 | SSW | | | 4 | | 3 | SSE | | 0 | 0 | Föhn | M. Wilhelm. |
| Hamburg | 29.40 | 746.8 | 29.47 | 748.6 | 55.6 | 13.1 | 52 | E | | | 5 | | 7cs;k | | | 0 | 0 | Pleasant | Captain F. Hegemann. |
| Kiel | 29.55 | 750.5 | 29.56 | 750.9 | 44.6 | 7.0 | 71 | E | | | 7 | | 1 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.72 | 754.8 | 29.80 | 756.9 | 45.3 | 7.4 | 66 | SE | | | 5 | | 6 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 29.66 | 753.4 | 46.0 | 7.8 | | SE | | | 4 | | 0 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 28.97 | 735.8 | 29.38 | 746.2 | 59.4 | 15.2 | 57 | SE | | | 2 | | 4 | | | 0.024 | 0.6 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.82 | 757.5 | 29.87 | 758.7 | 46.9 | 8.3 | 57 | E | | | 4 | | 10ck;ks | | | | | | Skalweit. |
| Neufahrwasser | 29.77 | 756.2 | 29.79 | 756.6 | 41.2 | 5.1 | 78 | NE | | | 2 | | 10 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.33 | 745.0 | 29.62 | 752.4 | 47.8 | 8.8 | 84 | E | | | 6 | | 9 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 28.72 | 729.4 | 29.25 | 742.9 | 61.2 | 16.2 | 54 | N | | | 3 | | 9 | WSW | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 28.25 | 717.5 | 29.13 | 740.0 | 67.3 | 19.6 | 40 | NW | | | 3 | | 10 | | | 0.177 | 4.5 | | Prof. Schoder. |
| Treves (Trier) | 28.71 | 729.1 | 29.22 | 742.1 | 57.2 | 14.0 | 63 | SE | | | 4 | | 10 | | | 0 | 0 | | Prof. Flesch. |
| Weissenburg (Bavaria) | 27.75 | 704.8 | 29.18 | 741.2 | 65.7 | 18.7 | 34 | E | 7 | 3 | | 4ck | 0 | | | 0 | 0 | Clearing | Dr. Van Bebber. |
| Wustrow, Naval School | 29.59 | 751.5 | 29.61 | 752.1 | 45.0 | 7.2 | 76 | E | | | 5 | | 5s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.49 | 749.1 | 29.88 | 759.0 | 64.9 | 18.3 | | SW | | | 3.0 | | | | | | | Clear | Dr. J. F. J. Schmidt. |
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the cooperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.81 | 757.2 | 29.86 | 758.4 | 87.0 | 30.6 | 46 | NW | 14 | 6.3 | | | 4 | | | 0 | 0 | D. clouds | |
| Deesa | 29.30 | 744.2 | 29.76 | 755.9 | 93.3 | 34.1 | 18 | WSW | 7.7 | 3.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.77 | 756.2 | 29.81 | 757.2 | 80.9 | 27.2 | 68 | NW | 20 | 8.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.80 | 706.2 | 29.76 | 755.8 | 90.3 | 32.4 | 33 | WNW | | | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 28.97 | 735.8 | 29.70 | 754.2 | 89.1 | 31.7 | 24 | W | 4.2 | 1.9 | | | 6 | | | 0 | 0 | | |
| Belgaum | 27.26 | 692.4 | 29.77 | 756.0 | 81.4 | 27.4 | 73 | W | 22 | 9.8 | | | 0 | | | 0 | 0 | D. clouds | |
| Roorkee | 28.78 | 731.1 | 29.66 | 753.2 | 93.8 | 34.3 | 14 | SE | 3.0 | 1.3 | | | 2 | | | 0 | 0 | D. clouds | |
| Agra | 29.15 | 740.5 | 29.70 | 754.3 | 97.1 | 36.2 | 21 | SW | | | | | | | | 0 | 0 | | |
| Nagpur | 28.61 | 726.6 | 29.61 | 752.1 | 98.0 | 36.7 | 20 | Calm | 2.2 | 1.0 | | | 7 | | NE | 0 | 0 | D. clouds | |
| Lucknow | 29.28 | 743.8 | 29.65 | 753.0 | 100.0 | 37.8 | 18 | NNW | 5.0 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.35 | 745.4 | 29.64 | 752.9 | 101.1 | 38.4 | 17 | NNE | 1.9 | 0.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.40 | 746.8 | 29.58 | 751.2 | 100.7 | 38.2 | 17 | W | 2.4 | 1.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.66 | 702.6 | 29.60 | 751.8 | 96.3 | 35.7 | 19 | NW | 6.3 | 2.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.59 | 751.6 | 29.67 | 753.5 | 87.1 | 30.6 | 64 | S | 6.1 | 2.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.60 | 752.0 | 29.63 | 752.5 | 86.6 | 30.3 | 66 | S | 10.0 | 4.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.22 | 742.2 | 29.60 | 751.8 | 91.7 | 33.2 | 40 | S | 8.6 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.66 | 753.3 | 29.75 | 755.6 | 84.2 | 29.0 | 81 | SSW | 5.0 | 2.2 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.33 | 745.0 | 29.66 | 753.8 | 83.4 | 28.6 | 63 | N | 1.5 | 0.7 | | | 3 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.47 | 723.1 | 29.79 | 756.6 | 99.7 | 37.6 | 15 | Calm | 2.6 | 1.2 | | | 3 | | | 0 | 0 | D. clouds | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation. Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,355 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.20 | 741.7 | 29.61 | 752.2 | 52.7 | 11.5 | 90 | SE | 3.6 | 1.7 | ..... | ..... | 10 | ..... | ..... | 0.886 | 22.5 | ..... | Prof. Giovanni Clodig. |
| Milan | 28.93 | 734.8 | 29.44 | 747.8 | 56.5 | 13.6 | 77 | E | ..... | ..... | 6 | ..... | 9 | SW | ..... | 0.165 | 4.2 | ..... | Prof. Schiaparelli. |
| Padua | 29.42 | 747.2 | 29.53 | 750.0 | 57.6 | 14.2 | 78 | E | 4.3 | 1.9 | ..... | ..... | 10 | SW | ..... | 0.366 | 9.3 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.48 | 723.4 | 29.39 | 746.4 | 52.5 | 11.4 | 73 | S | 1.8 | 0.8 | ..... | ..... | 6 | N | ..... | 0.878 | 22.3 | ..... | Prof. P. F. Denza. |
| Genoa | 29.29 | 744.0 | 29.48 | 748.8 | 58.3 | 14.6 | 78 | S | 8.7 | 3.9 | ..... | ..... | 8 | SW | ..... | 1.713 | 43.5 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.48 | 698.1 | 29.39 | 746.6 | 51.4 | 10.8 | 59 | SW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 1.504 | 38.2 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.51 | 749.5 | 29.56 | 750.8 | 59.4 | 15.2 | 73 | SE | 9.4 | 4.2 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.26 | 743.1 | 29.51 | 749.6 | 65.7 | 18.7 | 47 | S | ..... | ..... | 6 | ..... | 8 | S | ..... | 0.114 | 2.9 | ..... | Cav. F. Meucci |
| Leghorn | 29.41 | 747.0 | 29.50 | 749.2 | 64.0 | 17.8 | 48 | W | ..... | ..... | 6 | ..... | 10 | S | ..... | 0.161 | 4.1 | ..... | Prof. P. Monte. |
| Rome | 29.45 | 748.0 | 29.63 | 752.5 | 59.0 | 15.0 | 86 | S | 21.7 | 9.7 | ..... | ..... | 10 | ..... | ..... | 0.205 | 5.2 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.54 | 750.3 | 29.79 | 756.7 | 63.5 | 17.5 | 50 | WSW | 21.7 | 9.7 | ..... | ..... | 6 | SW | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.81 | 731.8 | 29.69 | 754.2 | 66.9 | 19.4 | 79 | SE | 11.2 | 5.0 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.42 | 747.1 | 29.61 | 752.0 | 64.0 | 17.8 | 44 | W | ..... | ..... | 2 | ..... | 5 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.46 | 748.3 | 29.71 | 754.7 | 66.4 | 19.1 | 47 | N | 6.9 | 3.1 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.67 | 753.7 | 29.74 | 755.5 | 58.6 | 14.8 | 90 | SE | 7.4 | 3.3 | ..... | ..... | 10 | WSW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.17 | 740.9 | 29.72 | 755.0 | 56.8 | 13.8 | 88 | WSW | 2.5 | 1.1 | ..... | ..... | 10 | ..... | ..... | 0.575 | 14.6 | ..... | Prof. [illegible] Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.20 | 767.1 | 30.21 | 767.3 | 47.7 | 8.7 | 67 | NNE | 7.0 | 3.1 | ..... | ..... | 10s | ..... | ..... | 0.335 | 8.51 | Cloudy | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.85 | 758.2 | 30.06 | 763.5 | 53.8 | 12.1 | 81 | NNE | 3.9 | 1.8 | ..... | ..... | 10s | ..... | ..... | 1.420 | 36.07 | Cloudy | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 30.17 | 766.3 | 30.24 | 768.1 | 52.1 | 11.2 | 69 | SE | 4.9 | 2.2 | ..... | ..... | 10s | ..... | ..... | 0.065 | 1.65 | Cloudy | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.02 | 635.6 | 30.06 | 763.4 | 55.4 | 13.0 | 45 | Calm | ..... | ..... | 0 | 1 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. L. Perez. |
| Leon | 24.41 | 620.0 | 30.00 | 762.3 | 55.1 | 18.4 | 65 | SE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.09 | 586.6 | 30.10 | 764.5 | 54.1 | 12.3 | 49 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very fine | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 62.4 | 16.9 | 47 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. V. de Leon, M. E. |
| Tlacotalpam | 29.86 | 758.4 | 29.87 | 758.7 | 76.2 | 24 0 | 88 | S | ..... | ..... | 2 | 0 | 10 | ..... | S | 0 | 0 | Cloudy | M. M. Châsaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.45 | 595.5 | 30.21 | 767.3 | 48.3 | 9.0 | 87 | SE | 0.4 | 0.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. |
| Colima | 28.39 | 721.1 | 30.04 | 763.1 | 73.4 | 23.0 | 91 | NE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guer |

NOTE.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft., San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201m., or 7,221.8 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.30 | 744.1 | 29.30 | 744.1 | 56.8 | 13.8 | ..... | ESE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.134 | 3.4 | ..... | |
| Groningen | 29.29 | 744.0 | 29.35 | 745.4 | 57.2 | 14.0 | ..... | S | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.031 | 0.8 | ..... | |
| Helder | 29.32 | 744.6 | 29.32 | 744.6 | 52.2 | 11.2 | ..... | E | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.071 | 1.8 | ..... | |
| Hellevoetsluis | 29.28 | 743.6 | 29.28 | 743.6 | 60.3 | 15.7 | 76 | SE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.25 | 742.9 | 29.30 | 744.1 | 57.4 | 14.1 | 79 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.079 | 2.0 | Dull | H. v. d. Brink. |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.72 | 755.0 | 29.78 | 756.4 | 51.1 | 10.6 | 33 | E | 6.7 | 3.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.96 | 761.0 | 30.00 | 762.0 | 46.4 | 8.0 | 63 | E | 4 | 2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.81 | 757.2 | 29.96 | 761.0 | 48.7 | 9.3 | 40 | ENE | 7 | 3 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.19 | 766.8 | 30.23 | 767.9 | 32.4 | 0.2 | 78 | NE | 27 | 12 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p. m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.81 | 757.2 | 30.00 | 762.1 | 61.9 | 16.6 | 94 | W | 11.2 | 5.0 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.78 | 730.9 | 29.82 | 757.3 | 52.7 | 11.5 | 61 | WNW | 17.4 | 7.8 | ..... | ..... | 5 | WNW | ..... | 0.118 | 3.0 | ..... | Dr. A.M.R. dos Santos. |
| Funchal, (Madeira) | 30.08 | 764.0 | 30.17 | 766.2 | 65.7 | 18.7 | 60 | S | 3.8 | 1.7 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.54 | 750.4 | 29.94 | 760.6 | 54.7 | 12.6 | 62 | NW | 18.6 | 8.3 | ..... | ..... | 9 | ..... | ..... | 0.161 | 4.1 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.00 | 762.1 | 30.08 | 763.9 | 65.1 | 18.4 | 84 | WNW | 19.2 | 8.6 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0— | Sea or swell. Direction from | | |
|---|---|---|---|---|
| Bartholomew Dias | | | | A. G. da Silva Costa. Com'd't. |
| D. Fernando | | | | A.M.de Sande, Com'd't. |
| Duque da Terceira, Santiago, Cape Verd I. | 3 | ..... | D. clouds..... | C.C.da Fonseca Ferreira, Comd't |
| India | | | | A. D. Pedroso, Com'd't. |
| Mindello | | | | J. F. R. R. Bastos, Com'd't. |
| Quanza, St. Thomas, Gulf of Guinea | 1 | SE | D. clouds..... | A.J.de Mattos, Com'd't. |
| Rio Douro | | | | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto Regina, Rio Grande, Senegambia | | | Blue sky..... | A. Ferreira, 2d Lt. |
| Sá da Bandeira, Ambrizette, S.7° 13′, E. 12°52′ | 3 | SW | D. clouds.... | F. Teixeira da Silva, Com'd't. |
| Sado | | | | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | 2 | SW | Blue sky.... | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.24 | 742.6 | 29.66 | 753.3 | 50.2 | 10.1 | 65 | E | 18 | 8 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.44 | 747.8 | 29.87 | 758.6 | 45.5 | 7.5 | 65 | E | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds. | Astronomical Obs. |
| Dorpat | 29.77 | 756.1 | 30.02 | 762.5 | 40.3 | 4.6 | 68 | NE | 4 | 2 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weilrauch. |
| St. Petersburg | 29.99 | 761.7 | 30.00 | 762.1 | 42.1 | 5.6 | 60 | SW | 7 | 3 | ..... | ..... | 3cs | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.09 | 738.8 | 29.74 | 755.3 | 37.2 | 2.9 | 91 | N | 7 | 3 | ..... | ..... | 10ks;n; cs | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.69 | 754.1 | 29.76 | 755.9 | 45.9 | 7.7 | 73 | NNW | 18 | 8 | ..... | ..... | 8n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.70 | 754.4 | 29.72 | 754.9 | 44.6 | 7.0 | 94 | WSW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Dagorio. |
| Moscow | 29.46 | 748.3 | 30.02 | 762.6 | 39.2 | 4.0 | 64 | E | 9 | 4 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.46 | 748.2 | 29.66 | 753.4 | 46.6 | 8.1 | 79 | E | 18 | 8 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 29.93 | 760.1 | 29.94 | 760.6 | 30.0 | — 1.2 | 78 | NW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.38 | 720 8 | 29.78 | 756.3 | 57.0 | 13.9 | 42 | NW | 13 | 6 | ..... | ..... | 5ck | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 29.78 | 756.4 | 29.70 | 754.3 | 53.4 | 11.9 | 57 | ENE | 7 | 3 | ..... | ..... | 10s;p | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.62 | 752.3 | 30.11 | 764.8 | 33.3 | 0.7 | 72 | NNE | 2 | 1 | ..... | ..... | 6k | ..... | ..... | ..... | ..... | Light clouds | Cand. Fatjanow. |
| Kasan | 29.84 | 757.8 | 30.12 | 765.0 | 34.3 | 1.3 | 70 | Calm | 0 | 0 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.16 | 740.6 | 30.13 | 765.4 | 46.4 | 8.0 | 31 | Calm | 0 | 0 | ..... | ..... | 10c | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Nukuss | 29.54 | 750.3 | 29.76 | 756.0 | 78.8 | 26.0 | 21 | ESE | 18 | 8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.37 | 720.5 | 29.88 | 759.0 | 70.7 | 21.5 | 34 | NW | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 30.02 | 762.5 | 30.56 | 776.2 | 22.6 | — 5.2 | 66 | SW | 13 | 6 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.18 | 766.6 | 30.50 | 774.6 | 20.3 | — 6.5 | 90 | S | 11 | 5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Marks. |
| Irkutsk | | | | | | | | | | | | | | | | | | | |
| Peking, (China) | 30.24 | 768.2 | 30.39 | 771.8 | 26.6 | — 3.0 | 89 | Calm | 0 | 0 | ..... | ..... | 9n | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | | | | | | | | | | | | | | | | | | | Meteorological Obs. |
| Vladivostock | 30.24 | 768.2 | 30.34 | 770.7 | 26.4 | — 3.1 | 94 | NNW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.34 | 745.3 | 29.45 | 748.0 | 58.3 | 14.6 | 67 | ENE | 7.2 | 3.23 | ..... | ..... | 10k | ..... | ..... | 0.391 | 9.92 | Hailing | Antonio Rave, Directon. |
| Bilbao, Met. Obs'y | 29.52 | 749.8 | 29.59 | 751.5 | 54.3 | 12.4 | 86 | NW | 1.5 | 0.69 | ..... | ..... | 10 | ..... | ..... | 0.587 | 14.9 | Raining | Prof. Manuel de Navera |
| Burgos, Met. Obs'y | 26.60 | 675.6 | ..... | ..... | 44.6 | 7.0 | 66 | SW | 16.0 | 7.18 | ..... | ..... | 6 | ..... | ..... | 0.177 | 4.5 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Oservatory | 27.40 | 695.9 | ..... | ..... | 50.2 | 10.1 | 60 | NW | 11.6 | 5.17 | ..... | 1 | 5 | NW | ..... | 0.244 | 6.2 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.49 | 749.1 | 29.65 | 753.0 | 55.6 | 13.1 | 63 | NW | 7.9 | 3.52 | ..... | 5 | 5 | SE | ..... | Inap. | Inap. | Covered | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.76 | 730.5 | 29.66 | 753.4 | 48.0 | 8.9 | 80 | NW | 7.4 | 3.3 | ..... | ..... | 10 | ..... | ..... | 0.969 | 24.6 | Raining | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.98 | 761.5 | 30.05 | 763.2 | 67.4 | 19.7 | 92 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.83 | 757.7 | 29.88 | 759.0 | 83.9 | 28.9 | 57 | ESE | 6.3 | 2.8 | ..... | 3c | 1c | E | E | 0 | 0 | Cloudy | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.83 | 757.7 | 29.93 | 760.2 | 60.4 | 15.8 | 61 | WSW | 24.9 | 11.1 | ..... | 0 | 10 | ..... | W | 0.045 | 1.1 | ... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W I | 29.91 | 759.6 | 30.00 | 761.9 | 78.1 | 25.6 | 82 | SE | 2.6 | 1.17 | ..... | 6k | 2k | SE | SE | 0 | 0 | Cloudy | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.12 | 765.0 | 30.16 | 766.0 | 33.8 | 1.0 | ..... | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.10 | 764.6 | 30.15 | 765.9 | 36.0 | 2.2 | 58 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.06 | 763.4 | 30.11 | 764.7 | 32.7 | 0.4 | 92 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.84 | 758.0 | 30.02 | 762.5 | 40.3 | 4.6 | 62 | ENE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.84 | 758.0 | 29.90 | 759.5 | 39.9 | 4.4 | 68 | E | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.92 | 760.0 | 30.00 | 761.9 | 48.0 | 8.9 | 53 | ESE | 6.9 | 3.1 | ..... | ..... | 7 | ..... | E | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 27.95 | 709.9 | 29.40 | 746.7 | 46.2 | 7.9 | 69 | SSW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.024 | 0.6 | Covered ..... | The Observatory. |
| Zurich | 27.66 | 702.6 | 29.27 | 743.5 | 61.9 | 16.6 | 53 | W | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0.039 | 1.0 | Bright..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —14.3 mm.; Thermometer,—3.0 Cent.; Relative Humidity, +11 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.90 | 759.5 | 63.1 | 17.3 | 46 | SSW | 10 | 4.5 | ..... | ..... | 4 | ..... | SW | 0 | 0 | ..... ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.08 | 764.0 | 75.2 | 24.0 | ..... | SE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.84 | 757.9 | 66.0 | 18.9 | ..... | SW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.83 | 757.7 | 29.95 | 760.6 | 70.7 | 21.5 | 62 | W | ..... | ..... | 2 | ..... | 4ks | ..... | W | 0 | 0 | D. clouds..... | Prof. C.V. A.Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.86 | 758.4 | 30.18 | 766.6 | 35 | 1.7 | ..... | NW | 1 | 0.4 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Clear. .. .... | W. R. Bigg. |
| *Chatham, N B | 29.70 | 754.4 | 29.76 | 755.9 | 34 | 1.1 | 84 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | G. A. Blair. |
| Charlottetown, P. E. Island. | 29.68 | 753.9 | 29.72 | 754.9 | 34 | 1.1 | 89 | W | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.010 | 0.26 | Cloudy ..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.91 | 759.7 | 30.11 | 764.8 | 26.2 | — 3.2 | 75 | NW | ..... | ..... | 1 | ..... | 6s | ..... | ..... | 0 | 0 | Cloudy..... | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | 29.89 | 759.2 | 29.94 | 760.5 | 42.1 | 5.6 | 100 | SE | 4 | 1.8 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Overcast..... | W. H. Bevis. |
| *Father Point, Quebec | 29.84 | 757.9 | 29.86 | 758.4 | 27 | — 2.8 | 86 | W | 20 | 8.9 | ..... | 5k | 2s | NW | Calm | Inap. | Inap. | Fair..... | J. McWilliams. |
| Fredericton, N. B | 29.76 | 755.9 | 29.83 | 757.7 | 34.8 | 1.6 | 70 | NW | 12 | 5.4 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair..... | Prof. Harrison. |
| *Fort Garry, Manitoba | 28.85 | 732.8 | 29.69 | 754.1 | 37 | 2.8 | 85 | S | 10 | 4.5 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Hazy..... | James Stewart. |
| Granton, Ontario | 29.07 | 738.4 | 30.22 | 767.6 | 31 | — 0.6 | ..... | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | James Grant. |
| *Halifax, N. S | 29.58 | 751.3 | 29.72 | 754.9 | 36 | 2.2 | 92 | NW | 8 | 3.6 | ..... | ..... | 10ks | ..... | NW | 0.020 | 0.51 | Cloudy..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.84 | 757.9 | 30.23 | 767.8 | 33.6 | 0.8 | 95 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.83 | 757.7 | 30.18 | 766.6 | 32 | 0.0 | 69 | S | 3 | 1.3 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair ..... | S. Woods, M. A. |
| Little Glace Bay, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | SW | 4 | 1.8 | ..... | 5k | 0 | SW | ..... | 0 | 0 | Fair..... | C. H. Rigby. |
| Moose Factory, Ontario | 29.85 | 758.2 | 29.89 | 759.2 | 20.9 | — 6.2 | 73 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Threatening | J. R. Nason. |
| *Montreal, Quebec | 29.87 | 758.7 | 30.08 | 764.0 | 27 | — 2.8 | 64 | W | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.44 | 747.8 | 30.17 | 766.3 | 29 | — 1.7 | 89 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Rev. R. Mosley. |
| Peterboro, Ontario | 29.45 | 748.0 | 30.20 | 767.1 | 45.7 | 7.6 | 60 | W | ..... | ..... | 1 | 0 | 8s | ..... | ..... | 0 | 0 | Hazy..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.50 | 749.3 | 30.23 | 767.8 | 30 | — 1.1 | 80 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | H. Morgan. |
| Port Hastings, N. S | 29.65 | 753.1 | 29.70 | 754.4 | 33.4 | 0.8 | ..... | N | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine ..... | Peter Grant. |
| Port Stanley, Ontario | 29.55 | 750.6 | 30.24 | 768.1 | 27 | — 2.8 | 97 | NW | 1 | 0.4 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear ..... | M. Payne. |
| *Quebec, Quebec | 29.65 | 753.1 | 29.99 | 761.7 | 24 | — 4.4 | 76 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.66 | 753.4 | 30.16 | 765.8 | 19 | — 7.2 | 76 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | W. H. McIntyre. |
| St. Andrews, N. B | 29.78 | 756.4 | 29.83 | 757.7 | 35 | 1.7 | 74 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | Dr. Gove. |
| St. John, N. B | 29.64 | 752.8 | 29.81 | 757.2 | 34 | 1.1 | 89 | W | 9 | 4.0 | ..... | 4k | 0 | ..... | ..... | 0 | 0 | Fair ..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.44 | 747 8 | 30.19 | 766.8 | 33 | 0.6 | 90 | S | 5 | 2.2 | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Clear ..... | K. Stewart. |
| Stayner, Ontario | 29.37 | 746.0 | 30.18 | 766.6 | 34 | 1.1 | 80 | NW | 5 | 2.2 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Fair ..... | R. J. Cole. |
| Stratford, Ontario | 28.84 | 732.5 | 30.19 | 766.8 | 27.2 | — 2.7 | 88 | W | 6 | 2.7 | ..... | 1cs | 0 | ..... | ..... | 0 | 0 | Fair ..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.65 | 753.1 | 29.69 | 754.1 | 40 | 4.4 | 69 | N | 2 | 0.9 | ..... | 0 | 2ks | ..... | N | Inap. | Inap. | Clear..... | T. C. Hill. |
| *Toronto, Ontario | 29.82 | 757.4 | 30.22 | 767.6 | 32 | 0.0 | 72 | W | 8 | 3.6 | ..... | 2cs | 0 | NW | ..... | 0 | 0 | Clear..... | Magnetic Observatory. |
| Windsor, N. S | 29.65 | 753.1 | 29.75 | 755.6 | 31.5 | — 0.3 | 96 | NW | 3 | 1.3 | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Fine... ..... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 37.0 | 2.8 | 81 | SW | ..... | ..... | ..... | 5k | 8s | ..... | ..... | 0.04 | 1.0 | Fair... ..... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Byt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUD. Amount. Up'er 0—10. | CLOUD. Amount. Low'r 0—10. | CLOUD. Direction. Upper. From— | CLOUD. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.91 | 759.7 | 30.14 | 765.5 | 34 | 1.1 | 61 | NW | 16 | 7.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Alpena, Michigan | 29.48 | 748.8 | 30.16 | 766.1 | 30 | — 1.1 | 68 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Atlanta, Georgia | 28.94 | 735.1 | 30.09 | 764.3 | 50 | 10.0 | 78 | E | 20 | 8.9 | | 0 | Haze | | Calm | 0.19 | 4.8 | Clear | |
| Atlantic City, New Jersey | 30.15 | 765.8 | 30.16 | 766.1 | 38 | 3.3 | 63 | N | 14 | 6.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Augusta, Georgia | 29.97 | 761.2 | 30.15 | 765.8 | 52 | 11.1 | 66 | NE | 9 | 4.0 | | 0 | 0 | | | 0.06 | 1.5 | Clear. | |
| Baltimore, Maryland | 30.18 | 766.6 | 30.24 | 768.1 | 41 | 5.0 | 49 | N | 5 | 2.2 | | 0 | Sm'e | | Calm | 0.02 | 0.5 | Clear | |
| Barnegat, New Jersey | 30.10 | 764.5 | 30.12 | 765.0 | 38 | 3.3 | 63 | N | 18 | 8.0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Bismarck, Dakota | 27.66 | 702.6 | 29.52 | 749.8 | 48 | 8.9 | 70 | S | 14 | 6.3 | | 8c | Sm'e | S | | 0 | 0 | Cloudy | |
| Boerne, Texas | | | | | | | | | | | | | | | | | | | |
| Boise City, Idaho | 27.14 | 689.3 | 30.10 | 764.5 | 38 | 3.3 | 72 | NW | 12 | 5.4 | | 5k | 2s | W | W | 0.03 | 0.8 | Fair | |
| Boston, Massachusetts | 29.88 | 758.9 | 30.04 | 763.0 | 36 | 2.2 | 45 | NW | 16 | 7.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Brackettville, Texas | 28.69 | 728.7 | 29.68 | 753.9 | 69 | 20.6 | 90 | SE | 8 | 3.6 | | | 10ks | | SE | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 28.73 | 729.7 | 29.73 | 755.1 | 40 | 4.4 | 82 | SE | 22 | 9.8 | | 2k | 0 | W | | 0 | 0 | Fair | |
| Brownsville, Texas | 29.84 | 757.9 | 29.89 | 759.2 | 75 | 23.9 | 81 | S | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Buffalo, New York | 29.49 | 749.0 | 30.22 | 767.6 | 29.5 | — 1.4 | 78 | SW | 5 | 2.2 | | 5c | 0 | NW | | 0 | 0 | Fair | |
| Burkes, Arizona | | | | | 53 | 11.7 | 25 | S | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Burlington, Vermont | 29.82 | 757.4 | 30.12 | 765.0 | 29 | — 1.7 | 56 | W | 6 | 2.7 | | 0 | 0 | | | 0.01 | 0.3 | Clear | |
| Cairo, Illinois | 29.80 | 756.9 | 30.19 | 766.8 | 49 | 9.4 | 78 | Calm | 0 | 0 | | 0 | 0 | | | 0.05 | 1.3 | Clear | |
| Camp Apache, Arizona | | | | | | | | | | | | | | | | | | | |
| Camp Grant, Arizona | 25.05 | 636.3 | 29.85 | 758.2 | 49 | 9.4 | 37 | W | 4 | 1.8 | | 0 | Haze | | Calm | 0 | 0 | Hazy | |
| Camp Verde, Arizona | | | | | 35 | 1.7 | 53 | NW | | | 1 | 2c | 0 | Calm | | 0 | 0 | Clear | |
| Campo, California | 27.44 | 697.0 | 30.01 | 762.2 | 43 | 6.1 | 92 | SW | 8 | 3.6 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Cape Hatteras, N. Carolina | 30.09 | 764.3 | 30.10 | 764.5 | 49 | 9.4 | 71 | NE | 32 | 14.3 | | | 10s | | NE | 0.03 | 0.8 | Cloudy | |
| Cape Henry, Virginia | 30.17 | 766.3 | 30.19 | 766.8 | 43 | 6.1 | 67 | N | 23 | 10.3 | | 0 | 0 | | | 0.32 | 8.1 | Clear | |
| Cape Lookout, N. Carolina | 30.07 | 763.8 | 30.09 | 764.3 | 49 | 9.4 | 85 | NE | 33 | 14.8 | | | 10ks | | NE | 0.18 | 4.6 | Threatening | |
| Cape May, New Jersey | 30.12 | 765.0 | 30.16 | 766.1 | 39 | 3.9 | 55 | N | 20 | 8.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Castroville, Texas | 29.10 | 739.1 | 29.75 | 756.4 | 69 | 20.6 | 85 | S | 6 | 2.7 | | | 10s | | S | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 30.03 | 762.8 | 30.08 | 764.0 | 55 | 12.8 | 74 | NE | 14 | 6.3 | | | 10s | | NE | 0.06 | 1.5 | Cloudy. | |
| Cheyenne, Wyoming | 23.58 | 598.9 | 29.52 | 749.8 | 36 | 2.2 | 71 | NW | 5 | 2.2 | | 2cs | 5s | E | NW | 0 | 0 | Cloudy | |
| Chicago, Illinois | 29.47 | 748.5 | 30.18 | 766.6 | 39 | 3.9 | 64 | SW | 2 | 0.9 | | 2c;hz | Fog | W | | 0 | 0 | Fair | |
| Cincinnati, Ohio | 29.60 | 751.8 | 30.28 | 769.1 | 42 | 5.6 | 74 | E | 1 | 0.4 | | 0 | Fog | | Calm | 0.24 | 6.1 | Clear | |
| Cleveland, Ohio | 29.48 | 748.8 | 30.25 | 768.3 | 32 | 0.0 | 79 | S | 4 | 1.8 | | 0 | Fog | | Calm | 0 | 0 | Clear | |
| Coleman City, Texas | | | | | | | | | | | | | | | | | | | |
| Columbus, Ohio | 29.39 | 746.5 | 30.27 | 768.8 | 36 | 2.2 | 80 | Calm | 0 | 0 | | 0 | Fog | | Calm | 0 | 0 | Clear | |
| Concho, Texas | 27.88 | 708.1 | 29.50 | 749.3 | 65 | 18.3 | 73 | S | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Corsicana, Texas | 29.40 | 746.7 | 29.87 | 758.7 | 56 | 13.3 | 81 | NW | 1 | 0.4 | | 2cs | 5s | NW | NW | 0 | 0 | Fair | |
| Davenport, Iowa | 29.50 | 749.3 | 30.16 | 766.1 | 40 | 4.4 | 73 | S | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Deadwood, Dakota | 24.85 | 631.2 | | | 43 | 6.1 | 59 | W | 2 | 0.9 | | 8k | 0 | W | | 0 | 0 | Fair | |
| Decatur, Texas | 28.73 | 729.7 | 29.88 | 758.9 | 55 | 12.8 | 68 | E | 10 | 4.5 | | 5cs | 0 | SE | | 0 | 0 | Fair | |
| Denison, Texas | 29.14 | 740.1 | 29.92 | 760.0 | 56 | 13.3 | 81 | SE | 8 | 3.6 | | 10cs | 0 | SE | | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.28 | 616.7 | 29.50 | 749.3 | 50 | 10.0 | 14 | SW | 24 | 10.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Des Moines, Iowa | 29.15 | 740.4 | 30.05 | 763.3 | 40 | 4.4 | 73 | S | 4 | 1.8 | | 2c | 0 | W | | 0 | 0 | Clear | |
| Detroit, Michigan | 29.51 | 749.5 | 30.21 | 767.3 | 35 | 1.7 | 80 | NE | 3 | 1.3 | | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Dodge City, Kansas | 27.18 | 690.4 | 29.44 | 747.8 | 45 | 7.2 | 92 | SE | 20 | 8.9 | | 2ck | 8ks | S | SE | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 29.44 | 747.8 | 30.16 | 766.1 | 38 | 3.3 | 63 | S | 6 | 2.7 | | 0 | Fog | | Calm | 0 | 0 | Clear | |
| Duluth, Minnesota | 29.30 | 744.2 | 30.00 | 762.0 | 34 | 1.1 | 79 | Calm | 0 | 0 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.03 | 737.3 | 29.74 | 755.4 | 69 | 20.6 | 90 | SE | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Eastport, Maine | 29.76 | 755.9 | 29.83 | 757.7 | 36 | 2.2 | 71 | NW | 13 | 5.8 | | 2k | 0 | NW | | 0.01 | 0.3 | Clear | |
| Edinburg, Texas | | | | | 72 | 22.2 | 90 | S | | | 6 | | 8s | | S | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.06 | 661.9 | | | 49 | 9.4 | 12 | W | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.49 | 749.0 | 30.24 | 768.1 | 36 | 2.2 | 61 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Escanaba, Michigan | 29.43 | 747.5 | 30.12 | 765.0 | 30 | — 1.1 | 57 | Calm | 0 | 0 | | 2ck | 0 | NW | | 0 | 0 | Fair | |
| Florence, Arizona | 28.42 | 721.9 | 30.02 | 762.5 | 50 | 10.0 | 32 | SW | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Buford, Dakota | | | | | | | | | | | | | | | | | | | |
| Fort Craig, New Mexico | 25.31 | 642.9 | 29.37 | 746.0 | 45 | 7.2 | 24 | W | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.08 | 637.0 | 30.04 | 763.0 | 60 | 15.6 | 49 | SW | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.42 | 747.2 | 29.95 | 760.7 | 54 | 12.2 | 67 | SE | 16 | 7.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.55 | 725.2 | 29.80 | 756.9 | 56 | 13.3 | 75 | E | 4 | 1.8 | | | 10ks | | S | 0 | 0 | Cloudy | |
| Fort Keogh, Montana | 26.90 | 683.2 | | | 45 | 7.2 | 85 | SW | 4 | 1.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Fort McKavett, Texas | 27.56 | 700.0 | 29.40 | 746.7 | 65 | 18.3 | 78 | S | 12 | 5.4 | | | 10s | | S | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | 29.41 | 747.0 | 29.44 | 747.8 | 25 | — 3.9 | 100 | N | 2 | 0.9 | | | 10s | | Calm | 0.03 | 0.8 | Cloudy | |
| Fort Sill, Indian Territory | 28.66 | 728.0 | 29.75 | 755.6 | 53 | 11.7 | 86 | SE | 12 | 5.4 | | 10k | 0 | S | | 0 | 0 | Cloudy | |
| Fort Stevenson, Dakota | 27.64 | 702.0 | | | 44 | 6.7 | 60 | SE | 2 | 0.9 | | 4ck | 0 | SW | | 0 | 0 | Fair | |
| Fredericksburg, Texas | 28.12 | 714.2 | 29.63 | 752.6 | 65 | 18.3 | 89 | S | 6 | 2.7 | | | 10ks | | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 29.91 | 759.4 | 29.95 | 760.7 | 70 | 21.1 | 90 | SW | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Graham, Texas | 28.76 | 730.5 | 29.79 | 756.7 | 56 | 13.3 | 75 | SE | 4 | 1.8 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 29.51 | 749.5 | 30.18 | 766.6 | 35 | 1.7 | 70 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.40 | 746.7 | 30.21 | 767.3 | 41 | 5.0 | 69 | Calm | 0 | 0 | | 0 | 0 | | | 0.01 | 0.3 | Clear | |
| Indianola, Texas | 29.92 | 760.0 | 29.95 | 760.7 | 69 | 20.6 | 95 | S | 5 | 2.2 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Jacksboro, Texas | 28.68 | 728.5 | 29.79 | 756.7 | 58 | 14.4 | 70 | SE | 14 | 6.3 | | | 10s | | N | 0 | 0 | Cloudy | |
| Jacksonville, Florida | 30.01 | 762.2 | 30.03 | 762.8 | 65 | 18.3 | 78 | W | 2 | 0.9 | | | 10s | | W | 0 | 0 | Cloudy | |
| Keokuk, Iowa | 29.47 | 748.5 | 30.10 | 764.5 | 39 | 3.9 | 73 | SE | 9 | 4.0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Key West, Florida | 30.03 | 762.8 | 30.08 | 763.5 | 71 | 21.7 | 75 | E | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 30.10 | 764.5 | 30.12 | 765.0 | 43 | 6.1 | 75 | NE | 36 | 16.1 | | 0 | 0 | | | 0.13 | 3.3 | Clear | |
| Knoxville, Tennessee | 29.17 | 740.9 | 30.20 | 767.1 | 45 | 7.2 | 68 | E | 12 | 5.4 | | Haze | Haze | | | 0.55 | 14.0 | Clear | |
| La Crosse, Wisconsin | 29.32 | 744.7 | 30.08 | 764.0 | 40 | 4.4 | 65 | S | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 25.91 | 658.1 | 30.06 | 763.5 | 42 | 5.6 | 42 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Laredo, Texas | 29.50 | 749.3 | 29.83 | 757.7 | 70 | 21.1 | 53 | SE | 4 | 1.8 | | | 10ks | | SE | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.13 | 739.9 | 29.98 | 761.5 | 46 | 7.8 | 77 | SE | 6 | 2.7 | | | 8ks | | SE | 0 | 0 | Cloudy | |
| Los Angeles, California | 29.71 | 754.6 | 30.06 | 763.5 | 46.0 | 7.8 | 77 | NE | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.64 | 752.8 | 30.22 | 767.6 | 42 | 5.6 | 66 | NE | 2 | 0.9 | | 0 | Sm'e | | Calm | 0.17 | 4.3 | Clear | |
| Lynchburg, Virginia | 29.52 | 749.8 | 30.22 | 767.6 | 45 | 7.2 | 60 | Calm | 0 | 0 | | 0 | 0 | | | 0.14 | 3.6 | Clear | |
| Madison, Wisconsin | 29.13 | 739.9 | 30.15 | 765.8 | 39 | 3.9 | 73 | S | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Marquette, Michigan | 29.30 | 744.2 | 30.01 | 762.2 | 43 | 6.1 | 51 | SW | 20 | 8.9 | | 5ck | 0 | SW | | 0 | 0 | Fair | |
| Mason, Texas | 28.22 | 716.8 | 29.92 | 760.0 | 64 | 17.8 | 68 | SE | 6 | 2.7 | | 8cs | 0 | SW | | 0 | 0 | Fair | |
| Memphis, Tennessee | 29.81 | 757.2 | 30.14 | 765.5 | 50 | 10.0 | 77 | E | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.41 | 747.0 | 30.15 | 765.8 | 44 | 6.7 | 52 | SW | 6 | 2.7 | | 1c | 0 | Calm | | 0 | 0 | Clear | |
| Mobile, Alabama | 29.98 | 761.5 | 30.03 | 762.8 | 62 | 16.7 | 88 | N | 10 | 4.5 | | 5k | 2s | N | NE | 0.07 | 1.8 | Fair | |
| Montgomery, Alabama | 29.85 | 758.2 | 30.09 | 764.3 | 51 | 10.6 | 86 | N | 2 | 0.9 | | 0 | Sm'e | | Calm | 0.42 | 10.7 | Clear | |
| Morgantown, West Virginia | 29.14 | 740.1 | 30.24 | 768.1 | 37 | 2.8 | 71 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Mt. Washington, N. H. | 23.51 | 597.1 | 29.87 | 758.7 | 6 | —14.4 | 76 | NW | 60 | 26.8 | | | Fog | | NW | 0.08 | 2.0 | Foggy | |
| Nashville, Tennessee | 29.63 | 752.6 | 30.18 | 766.6 | 51 | 10.2 | 65 | E | 1 | 0.4 | | 0 | 0 | | | 0.18 | 4.6 | Clear | |
| New Haven, Connecticut | 29.98 | 761.5 | 30.10 | 764.5 | 37 | 2.8 | 53 | N | 12 | 5.4 | | 0 | 0 | | | 0.05 | 1.3 | Clear | |
| New London, Connecticut | 30.00 | 762.0 | 30.05 | 763.3 | 40 | 4.4 | 48 | N | 10 | 4.5 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| New Orleans, Louisiana | 29.93 | 760.2 | 29.99 | 761.7 | 68 | 20.0 | 90 | SW | 1 | 0.4 | | 0 | 8s | | SW | Inap. | Inap. | Fair | |
| Newport, Rhode Island | 29.98 | 761.5 | 30.04 | 763.0 | 37.5 | 3.1 | 59 | NW | 10 | 4.5 | | 0 | 0 | | | 0.02 | 0.5 | Clear | |
| New York, New York | 29.97 | 761.2 | 30.15 | 765.8 | 39 | 3.9 | 55 | NW | 4 | 1.8 | | 0 | Haze | | Calm | 0.03 | 0.8 | Hazy | |
| Norfolk, Virginia | 30.13 | 765.3 | 30.19 | 766.8 | 42 | 5.6 | 50 | NE | 18 | 8.0 | | 0 | 0 | | | 0.12 | 3.0 | Clear | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. | | BAROMETER. Reduced to sea-level. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. Direction. | WIND. Velocity. | | WIND. Force. | CLOUDS. Amount. | | CLOUDS. Direction. | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10 | 0—10. | 0—10. | From— | From—. | Inches. | Millimeters. | | |
| North Platte, Nebraska | 26.74 | 679.2 | 29.23 | 742.4 | 48 | 8.9 | 78 | SE | 40 | 17.9 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 30.01 | 762.2 | 30.05 | 763.3 | 37.0 | 2.8 | 90 | S | 9 | 4.0 | ..... | 0 | 5s | ..... | SW | 0.33 | 8.4 | Fair | |
| Omaha, Nebraska | 28.78 | 731.0 | 29.87 | 758.7 | 46 | 7.8 | 77 | SE | 14 | 6.3 | ..... | 5c | 2s | W | Calm | 0 | 0 | Fair | |
| Oswego, New York | 29.88 | 758.9 | 30.21 | 767.3 | 37 | 2.8 | 53 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pembina, Dakota | 28.84 | 732.5 | 29.68 | 753.9 | 38 | 3.3 | 81 | S | 12 | 5.4 | ..... | 5c | Haze | Calm | ..... | 0 | 0 | Fair | |
| Philadelphia, Pa | 30.12 | 765.0 | 30.18 | 766.6 | 37 | 2.8 | 63 | N | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| Phœnix, Arizona | 28.72 | 729.5 | 30.55 | 776.0 | 47 | 8.3 | 55 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.35 | 439.0 | 29.52 | 749.8 | 4 | —15.6 | 48 | SW | 60 | 26.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Pioche, Nevada | 23.89 | 606.8 | 29.66 | 753.4 | 30 | — 1.1 | 68 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.42 | 747.2 | 30.28 | 769.1 | 31 | — 0.6 | 79 | NW | 4 | 1.8 | ..... | 0 | Sm'e | ..... | Calm | 0.03 | 0.8 | Clear | |
| Port Huron, Michigan | 29.51 | 749.5 | 30.30 | 767.1 | 36 | 2.2 | 80 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear. | |
| Portland, Maine | 29.92 | 760.0 | 29.97 | 761.2 | 37 | 2.8 | 53 | NW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Portland, Oregon | 30.10 | 764.5 | 30.20 | 767.1 | 40.0 | 4.4 | 82 | SW | 13 | 5.8 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Clear | |
| Prescott, Arizona | 24.59 | 624.6 | 29.95 | 760.7 | 28 | — 2.2 | 66 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Threatening | |
| Pilot Point, Texas | 28.92 | 734.6 | 29.72 | 754.9 | 60 | 15.6 | 87 | N | 19 | 8.5 | ..... | 2k | 0 | NW | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 30.07 | 763.8 | 30.09 | 764.3 | 63 | 17.2 | 83 | E | 5 | 2.2 | ..... | 2k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Red Bluff, California | 29.79 | 756.7 | 30.17 | 766.3 | 42 | 5.6 | 66 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rio Grande City, Texas | 29.67 | 753.6 | 29.88 | 758.9 | 72 | 22.2 | 85 | SE | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0.44 | 11.2 | Clear | |
| Rochester, New York | 29.57 | 751.1 | 30.21 | 767.3 | 34 | 1.1 | 70 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Roseburg, Oregon | 29.68 | 753.9 | 30.28 | 769.1 | 38.0 | 3.3 | 90 | SW | 1 | 0.4 | ..... | 1cs | 5ks | W | W | 0 | 0 | Clear | |
| Sacramento, California | 30.05 | 763.3 | 30.13 | 765.3 | 51.5 | 10.8 | 90 | SE | 2 | 0.9 | ..... | ..... | 10n | ..... | SW | 0.09 | 2.3 | Clearing | |
| St. Louis, Missouri | 29.57 | 751.1 | 30.16 | 766.1 | 40 | 4.4 | 73 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.11 | 2.8 | Heavy rain | |
| St. Marks, Florida | 30.00 | 762.0 | 30.01 | 762.2 | 64 | 17.8 | 94 | SW | 3 | 1.3 | ..... | 0 | 9s | ..... | SW | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.11 | 739.4 | 29.95 | 760.7 | 37 | 2.8 | 71 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Salt Lake City, Utah | 25.42 | 645.7 | 29.75 | 755.6 | 38 | 3.3 | 81 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0 | 0 | Clear | |
| San Antonio, Texas | 29.21 | 741.9 | 29.77 | 756.1 | 70 | 21.1 | 85 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0.97 | 24.6 | Light rain | |
| San Diego, California | 30.00 | 762.0 | 30.07 | 763.8 | 49 | 9.4 | 93 | NE | 4 | 1.8 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.56 | 750.8 | 30.25 | 768.3 | 39 | 3.9 | 64 | S | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Sandy Hook, New Jersey | 30.11 | 764.8 | 30.15 | 765.8 | 37 | 2.8 | 71 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Francisco, California | 30.08 | 764.0 | 30.15 | 765.8 | 47.5 | 8.6 | 67 | N | 11 | 4.9 | ..... | 0 | 1s | ..... | Calm | 0.09 | 2.3 | Clear | |
| Santa Fé, New Mexico | 23.06 | 585.7 | 29.60 | 751.8 | 40 | 4.4 | 31 | W | 1 | 0.4 | ..... | 8cs | 0 | Calm | ..... | 0.07 | 1.8 | Clear | |
| Savannah, Georgia | 30.00 | 762.0 | 30.09 | 764.3 | 57 | 13.9 | 81 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Shreveport, Louisiana | 29.76 | 755.9 | 29.98 | 761.5 | 58 | 14.4 | 88 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Cloudy | |
| Silver City, New Mexico | 24.19 | 614.4 | 30.36 | 771.1 | 45 | 7.2 | 68 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.08 | 764.0 | 30.12 | 765.0 | 49 | 9.4 | 85 | NE | 12 | 5.4 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.96 | 761.0 | 30.09 | 764.3 | 40 | 4.4 | 56 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Cloudy | |
| Stockton, Texas | 26.76 | 679.7 | 29.76 | 755.9 | 60 | 15.6 | 71 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.94 | 760.5 | 30.00 | 762.0 | 35 | 1.7 | 70 | NW | 18 | 8.0 | ..... | 2c | 0 | N | ..... | 0 | 0 | Clear | |
| Toledo, Ohio, | 29.49 | 749.0 | 30.19 | 766.8 | 42 | 5.6 | 74 | E | 2 | 0.9 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Fair | |
| Tucson, Arizona | 27.44 | 697.0 | 29.99 | 761.7 | 48 | 8.9 | 49 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.76 | 755.9 | 30.27 | 768.8 | 41.0 | 5.0 | 49 | SW | 12 | 5.4 | ..... | 0 | 1s | ..... | W | 0 | 0 | Clear | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 32 | 0.0 | 69 | NW | ..... | ..... | 6 | ..... | 10s | ..... | NW | 0.25 | 6.3 | Clear | |
| Uvalde, Texas | 28.97 | 735.8 | 29.77 | 756.1 | 70 | 21.1 | 75 | E | 7 | 3.1 | ..... | 0 | 10s | ..... | SE | 0.17 | 4.3 | Cloudy | |
| Vicksburg, Mississippi | 29.81 | 757.2 | 30.07 | 763.8 | 56 | 13.3 | 81 | E | 6 | 2.7 | ..... | 5c | 0 | W | ..... | 0 | 0 | Cloudy | |
| Virginia City, Montana | 23.93 | 607.8 | 29.41 | 747.0 | 36 | 2.2 | 71 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Fair | |
| Visalia, California | 29.74 | 755.4 | 30.12 | 765.0 | 41.8 | 5.4 | 91 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.12 | 3.0 | Cloudy | |
| Washington, D. C. | 30.11 | 764.8 | 30.23 | 767.8 | 39 | 3.9 | 60 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 44 | 6.7 | 45 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Wilmington, N. Carolina | 30.03 | 762.8 | 30.11 | 764.8 | 49 | 9.4 | 71 | NE | 12 | 5.4 | ..... | 8k | 0 | NE | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.60 | 650.2 | 29.96 | 761.0 | 36 | 2.2 | 90 | SW | 9 | 4.0 | ..... | ..... | 10n | ..... | Calm | 0.14 | 3.6 | Fair | |
| Wood's Holl, Mass | 30.02 | 762.5 | 30.06 | 763.5 | 42 | 5.6 | 42 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.36 | 9.1 | Light snow | |
| Yankton, Dakota | 28.53 | 724.6 | 29.80 | 756.9 | 45 | 7.2 | 76 | SE | 13 | 5.8 | ..... | Inap. | Inap. | ..... | ..... | Inap. | Inap. | Clear | |
| Yuma, Arizona | 29.77 | 756.1 | 29.93 | 760.2 | 53 | 11.7 | 54 | W | 7 | 3.1 | ..... | 8c | 0 | NW | ..... | 0 | 0 | Cloudy | |
| SUB-SERIES. | | | | | | | | | | | | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fayetteville, Ark | 28.42 | 721.9 | 29.83 | 757.7 | 49 | 9.4 | 71 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba. W. 1 | 29.99 | 761.7 | 30.04 | 763.0 | 71 | 21.7 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.24 | 641.1 | ..... | ..... | 64.5 | 18.1 | 89 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 1.51 | 38.4 | ..... | Thomas Herran. |
| Navassa, W. I | 29.92 | 760.0 | 30.00 | 762.0 | 80 | 26.7 | ..... | E | 4.2 | 1.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.00 | 762.0 | 30.00 | 762.0 | 80 | 26.7 | 87 | E | ..... | ..... | 2 | ..... | 10n | E | ..... | 1.210 | 29.73 | Raining | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | 29.94 | 760.5 | 30.00 | 762.0 | 4.0 | —15.6 | 87 | N | 8 | 3.6 | ..... | 4k | 1s | E | N | 0 | 0 | Fair | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 2,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.855 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.07 | 763.8 | 49 | 9.4 | 44 | 6.7 | 84 | NW | 10 | 4.5 | ..... | ..... | 2 | ..... | NW | 0.01 | 0.3 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 30.10 | 764.5 | 65 | 18.3 | 65 | 18.3 | 94 | NE | 5 | 2.2 | ..... | ..... | 10 | ..... | W | 0 | 0 | ..... | ..... | Threatening | |
| Navy Yard, Portsmouth, N.H | 30.04 | 763.0 | 69 | 20.6 | 35 | 1.7 | 66 | WNW | 4 | 1.8 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant.. .. | |
| Naval Hospital, Yokohama, Japan.....* | 30.20‡ | 767.1‡ | ..... | ..... | 52.5 | 11.4 | 70 | Calm | ..... | ..... | 0 | ..... | 10ks | ..... | W | 0 | 0 | ..... | ..... | Cloudy..... | |
| Adams, Panama .....* | 29.94‡ | 760.5 | 79 | 26.1 | 78 | 25.6 | 91 | NW | ..... | ..... | 2 | ..... | 8 | ..... | NW | ..... | ..... | ..... | ..... | Fair..... | |
| Alaska, Sitka, Alaska..... | 30.40‡ | 746.7‡ | ..... | ..... | 39 | 3.9 | 91 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.225 | 5.72 | ..... | ..... | Raining..... | |
| Alliance, Naples, Italy..... | 29.71‡ | 754.6‡ | ..... | ..... | 61 | 16.1 | 88 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | S;W | ..... | ..... | ..... | ..... | Raining ..... | |
| Ashuelot, Hong-Kong, China. ..* | 29.88‡ | 758.9‡ | ..... | ..... | 73 | 22.8 | 90 | ENE | ..... | ..... | 4 | ..... | 8 | ..... | E | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Canonicus, New Orleans, La.....* | 29.90 | 759.4 | 49 | 9.4 | 66 | 18.9 | 94 | SW | ..... | ..... | 2 | ..... | 10 | ..... | SW | ..... | ..... | ..... | ..... | Foggy ..... | |
| Colorado, New York, N. Y..... | 30.13 | 765.3 | 44 | 6.7 | 40 | 4.4 | 52 | NW | 9 | 4.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Constitution Lisbon, Portugal..... | 29.89‡ | 759.2‡ | ..... | ..... | 56 | 13.3 | 81 | NW | ..... | ..... | 6 | ..... | 5 | ..... | NW | ..... | ..... | ..... | ..... | Squally..... | |
| Despatch, Genoa, Italy..... | 29.49‡ | 749.0‡ | ..... | ..... | 60 | 15.6 | 88 | S | ..... | ..... | 3 | ..... | 8 | ..... | SE | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Franklin, Norfolk, Va.....* | 30.26 | 768.6 | 60 | 15.6 | 44 | 6.7 | 61 | NNE | 18 | 8.0 | ..... | ..... | 0 | ..... | ..... | 1.7 | 43. | ..... | ..... | Clear. ..... | |
| Gettysburg, Genoa, Italy .....* | 29.65‡ | 753.1 | ..... | ..... | 62 | 16.7 | 88 | SSW | ..... | ..... | 3 | ..... | 5 | ..... | S;W | 0.20 | 5.1 | Long | S | Clearing..... | |
| Hartford, Montevideo, Uruguay.* | 29.84 | 757.9 | 67 | 19.4 | 78 | 25.6 | 73 | ESE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair..... | |
| Michigan, Erie, Pa.....† | 30.06‡ | 763.5‡ | ..... | ..... | 32 | 0.0 | 90 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monocacy, Shanghai, China.....* | 29.96‡ | 761.0‡ | ..... | ..... | 56 | 13.3 | 94 | W | ..... | ..... | 2 | ..... | 10 | ..... | W | ..... | ..... | ..... | ..... | Raining ..... | |
| Monongahela Yokohama, Japan .....* | 30.21‡ | 767.3‡ | ..... | ..... | 54 | 12.2 | 67 | NE | ..... | ..... | 0–1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Overcast..... | |
| New Hampshire, Port Royal, S. C.....* | 30.12 | 765. 0 | 57 | 13.9 | 56 | 13.3 | 94 | NNE | 18 | 8.0 | ..... | ..... | 10 | ..... | NNE | 0.04 | 1.0 | ..... | ..... | Overcast..... | |
| Onward, Callao, Peru.....†* | 30. 02‡ | 762.5 | ..... | ..... | 65 | 18.3 | 100 | Var. | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Long | W | Fair..... | |
| Palos, Tientsin, China.....* | 30.48 | 774.2 | 70 | 21.1 | 27 | — 2.8 | 89 | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 38 | 3.3 | 83 | S | ..... | ..... | 1 | ..... | 5 | ..... | NE | ..... | ..... | ..... | ..... | Fair..... | |
| Pensacola. S. 22° 36′, W. 70° 41′..... | 30.00‡ | 762.0‡ | ..... | ..... | 70 | 21.1 | 75 | SE | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | SW | Clear..... | |
| Plymouth, Portsmouth, N. H..... | 30.18‡ | 766.6‡ | ..... | ..... | 36 | 2.2 | 66 | WNW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Powhatan, Norfolk, Va..... | 30.17‡ | 766.3‡ | ..... | ..... | 47 | 8.3 | 77 | NNE | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0.01 | 0.3 | ..... | ..... | Clear. ..... | |
| Quinnebaug, Tangier, Morroco..... | 29.94‡ | 760.5 | ..... | ..... | 60 | 15.6 | 71 | W | ..... | ..... | 6 | ..... | 8 | ..... | WSW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Ranger. Amoy, China.....* | 29.90‡ | 759.4‡ | ..... | ..... | 69 | 20.6 | 90 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear ..... | |
| Richmond. N. 10° 32′, E. 66° 55′..... | 29.87‡ | 758.7‡ | ..... | ..... | 83 | 28.3 | 79 | NNE | ..... | ..... | 1 | ..... | 2 | ..... | NNE | 0 | 0 | Smooth | ..... | Fair..... | |
| Rio Bravo, Brownsville, Texas..... | 29.93 | 760.2‡ | 73 | 22.8 | 71 | 21.7 | 100 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Santee, Annapolis, Md.. ..... | 30.20‡ | 767.1‡ | ..... | ..... | 44 | 6.7 | 52 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Saratoga, N. 36° 54′, W. 60° 05′..... | 29.94‡ | 760.5‡ | ..... | ..... | 62 | 16.7 | 91 | SW | ..... | ..... | 6–7 | ..... | 8 | ..... | E | Light | Light | Mod'ate | S | Squally..... | |
| St. Louis, League Island, Pa..... | 30.18‡ | 766.6‡ | ..... | ..... | 42 | 5.6 | 75 | NNW | 8 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Supply, New York, N. Y..... | 30.14‡ | 765.5‡ | ..... | ..... | 42 | 5.6 | 83 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Trenton. Genoa, Italy.....* | 29.43‡ | 747.6‡ | ..... | ..... | 58 | 14.4 | 88 | SSW | ..... | ..... | 3–4 | ..... | 8 | ..... | S | 0.08 | 2.0 | Heavy | S | Cloudy..... | |
| Tuscarora. Port Sacrificios, Mexico.* | 29.92‡ | 760.0‡ | ..... | ..... | 79 | 26.1 | 78 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Long | S | Clear..... | |
| Vandalia N. 41° 05′, W. 69° 06′....† | 29.99‡ | 761.7‡ | ..... | ..... | 71 | 5.0 | 90 | NNW | ..... | ..... | 4 | ..... | 5 | ..... | NNW | ..... | ..... | Mod'ate | NNW | Fair..... | |
| Wabash, Boston, Mass..... | 30.02‡ | 762.5 | ..... | ..... | 35 | 1.7 | 82 | NW | 5 | 2.2 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Fair.. ..... | |
| Wyoming, Jaffa, Syria.....* | 29.90‡ | 761.7‡ | ..... | ..... | 67 | 19.4 | 84 | WNW | ..... | ..... | 2–3 | ..... | 2 | ..... | NW | ..... | ..... | Long | NW | Clear..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | L. B. Walls. |
| S. S. City of Tokio, Capt. Maury N. 37° 20′, W. 138° 19′ | | 30.46‡ | 773.7‡ | 53 | 11.7 | | W | | | 2 | | 10 | | | 0 | Very Heavy | NW | Cloudy | Capt. R. Searle. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | B. Lawless. |
| S. S. Dakota, Capt. H. G. Morse, Seattle, Washington Ter. †* | | 30.05‡ | 763.3‡ | | | | SSE | | | 5 | | 3 | | NNW | Light | None | | Cloudy | Capt. Connolly |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer |
| S. S. Zealandia, S. 34° 30′, E. 176° 50′ | | 30.11‡ | 764.8‡ | | | | ESE | | | 4 | | 5 | | S | | Long; slow | SE | Fine | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, N. 42° 56′, W. 144° 01′ | | 29.84‡ | 757.9‡ | 49 | 9.4 | 85 | WSW | | | 6 | | ks | | W | 0 | Mod'ate | WSW | Misty | J. A. Thompson, 2d Off'r |
| S. S. Gaelic, Yokohama, Japan †* | | 29.87‡ | 758.7‡ | 65 | 18.3 | 73 | N | | | 3 | | k | | N | 0 | Smooth | | Overcast | Capt. W. H. Kidley |
| §S. S. Oceanic, Capt. J. Metcalf, N. 34° 30′, E. 155° 25′ | | 30.19‡ | 766.8‡ | 53 | 11.7 | 100 | N | | | 2 | | 10 | | WNW | | 3 | NW | Showery | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. §The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the date may be in error one day; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andreesen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 39° 22′, W. 61° 26′ | | 29.83‡ | 757.7‡ | 57.0 | 13.9 | 94 | NNW | | | 4 | | 10 | | | 5 hours | Rough | SW | Rainy | Capt. C. Undütsch. |
| S. S. Leipzig, N. 49° 22′, W. 23° 00′ | | 29.51‡ | 749.5‡ | 44.0 | 6.7 | 96 | SW | | | 2–3 | | 8 | | SW | Inap. | Mod'ate | Var. | Sprinkling | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, Capt. G. Meyer, Baltimore, Md. * | | 29.80‡ | 759.2‡ | | | | SSW | | | 4 | | 5 | | S | | | | Fair | G. Risius, 3rd Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Philadelphia, Pa | | 30.18‡ | 766.6‡ | 42 | 5.6 | | NNW | | | 5 | | 2 | | NNW | Light | | | Clear | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher, & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | J. Powell, 4th Officer. |
| Peruvian | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| NOTE.—The originals give the barometer as read off: wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |
| **MARINE SERIES. (Miscellaneous.)** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
| Brigantine "George," of Halifax | | | | | | | | | | | | | | | | | | | Willard N. Pratt. |
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| NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIOAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 9, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:38 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGEGIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer, corrected for instrum'tal error and temperature. Inches. | Barometer, corrected for instrum'tal error and temperature. Millimeters. | Barometer, reduced to sea-level. Inches. | Barometer, reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 29.89 | 759.2 | 68.5 | 20.3 | 64 | NW | | | 1 | | 2 | | | 0 | 0 | Fair | Kesxuche. |
| Algiers | | | 29.72 | 755.0 | 63.3 | 17.4 | 53 | W | | | 3 | | 0 | | | Inap. | Inap. | Clear | Tourlliere. |
| La Calle | | | 29.73 | 755.2 | 62.4 | 16.9 | 68 | NW | | | 5 | | 5 | | | 0.667 | 17.2 | Cloudy | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 29.85 | 758.2 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 29.90 | 759.4 | 64.4 | 18.0 | 34 | NW | | | 1 | | 0 | | | 0.201 | 5.1 | Clear | Herbin. |
| Tebessa | | | 29.87 | 758.6 | 58.5 | 14.7 | 34 | W | | | 4 | | 2 | | | 0.012 | 0.3 | Fair | Watrin. |
| Geriville | | | 30.02 | 762.6 | 59.7 | 15.4 | 56 | N | | | 3 | | 0 | | | 0 | 0 | Clear | Brugnlaux. |
| Laghouat | | | 29.88 | 759.0 | 64.8 | 18.2 | 37 | W | | | 2 | | 0 | | | 0 | 0 | Clear | Bertrand. |
| Biskra | | | 29.85 | 758.2 | 72.0 | 22.2 | 23 | NW | | | 2 | | 0 | | | 0 | 0 | Clear | Chanvaux. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

## AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 28.82 | 731.9 | 29.35 | 745.4 | 59.4 | 15.2 | 69 | SW | | | 1 | | 10 | | | 0.031 | 0.8 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 28.04 | 727.4 | 29.39 | 746.4 | 54.7 | 12.6 | 82 | N | | | 1 | | 10 | | | 0.276 | 7.0 | | Dr. Wierzbiski. |
| Eperies | 28.52 | 724.5 | 29.39 | 746.4 | 54.0 | 12.2 | 88 | Calm | | | 0 | | 10sn | | N | Blank | Blank | | Julius Mikolik. |
| Gratz | 28.14 | 714.8 | 29.36 | 745.8 | 54.5 | 12.5 | 74 | W | | | 2 | | 10 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 27.97 | 710.4 | 29.34 | 745.1 | 62.4 | 16.9 | 55 | S | | | 2 | | 10 | | | 0.144 | 3.65 | Raining | Prof. A. Gottschling. |
| Kremsmünster | 28.06 | 712.8 | 29.39 | 746.5 | 48.2 | 9.0 | 84 | WSW | | | 3 | | 10 | | | 0 | 0 | | Prof. C. Wagner. |
| Lemberg | 28.43 | 722.2 | 29.41 | 747.0 | 48.4 | 9.1 | 92 | SE | | | 1 | | 10 | | | 0.370 | 9.4 | | Dr. T. Stanecki. |
| Pola | 29.24 | 745.1 | 29.45 | 747.9 | 56.8 | 13.8 | 77 | WNW | | | 2 | | 2 | | | 0.217 | 5.5 | | I.R.Hydrographic Office |
| Szathmar | 28.98 | 736.0 | 29.43 | 747.4 | 60.8 | 16.0 | 69 | N | | | 3 | | 8 | | | 0 | 0 | | Julius Csics, S. J. |
| Szegedin | 29.08 | 738.6 | 29.35 | 745.5 | 57.4 | 14 1 | 76 | S | | | 2 | | 10 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 29.35 | 745.4 | 29.45 | 748.0 | 57.7 | 14.3 | 91 | W | | | 1 | | 4 | | | 0 | 0 | Almost clear | P. Busin. |
| Vienna | 28.03 | 727.1 | 29.32 | 744.7 | 58.0 | 14.8 | 61 | W | | | 4 | | 10 | | | 0 | 0 | | I. R. Central Met. Obs'y |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

## BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.24 | 742.7 | 29.45 | 748.0 | 51.3 | 10.7 | 85 | W | | | 2 | | 10 | | W | 0.008 | 0.20 | Light rain | Royal Observatory. |
| Furnes | 29.44 | 747.7 | 29.46 | 748 3 | 50.7 | 10.4 | 74 | W | | | 4 | | 9 | | | 0 | 0 | | M. E. de Cae. |
| Maeseyck | 29.32 | 744.7 | 29.45 | 747.9 | 53.4 | 11.9 | 84 | SW | | | 2 | | 10 | | | 0.016 | 0.4 | | M. Pierrot. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London. Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.72 | 754.9 | 29.82 | 757.4 | 39.7 | 4.3 | ..... | ESE | 21 | 9.4 | ..... | ..... | 10 | ..... | ..... | 0.005 | 0.13 | Overcast | W. Boswell. |
| Ardrossan | 29.62 | 752.3 | 29.64 | 752.8 | 41 | 5.0 | ..... | ENE | ..... | ..... | 6 | ..... | 9 | ..... | ..... | ..... | ..... | Raining | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.61 | 752.1 | 45.2 | 7.3 | ..... | NE | 9 | 4.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.53 | 750.0 | 41.8 | 5.4 | ..... | ENE | 19 | 8.5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.56 | 750.8 | 39.5 | 4.2 | ..... | ENE | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Thomas Mackereth. |
| Bradford, Yorkshire | 29.17 | 740.9 | 29.56 | 750.8 | 39.7 | 4.3 | ..... | E | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.16 | 4.1 | Overcast | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.91 | 759.7 | 29.94 | 760.5 | 83 | 28.3 | ..... | SE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | Gloomy | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.45 | 748.0 | 46.2 | 7.9 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | H. Todd. [C. |
| Cardington | ..... | ..... | 29.46 | 748.3 | 44.4 | 6.9 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.31 | 744.5 | 29.44 | 747.8 | 50.6 | 10.3 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.06 | 712.7 | 29.53 | 750.0 | 44.0 | 6.7 | ..... | N | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | Blue sky | Alexander Watt. |
| Donaghadee | 29.58 | 751.3 | 29.63 | 752.6 | 42 | 5.6 | ..... | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | J. Mac Gowan. |
| Dover | 29.42 | 747.2 | 29.44 | 747.8 | 50 | 10.0 | ..... | WSW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | ½ clouded | J. Costello. |
| Falmouth, Observatory | 29.30 | 744.2 | 29.53 | 750.0 | 50.7 | 10.4 | ..... | S | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| Fort Napier, (Natal) | 27.47 | 697.7 | 29.79 | 756.7 | 84.5 | 29.2 | ..... | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.68 | 753.9 | 29.90 | 759.4 | 87 | 30.6 | ..... | N | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's college | ..... | ..... | 29.54 | 750.3 | 51 | 10 6 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 29.77 | 756.1 | 29.82 | 757.4 | 58.7 | 14.8 | ..... | W | ..... | ..... | 6 | ..... | 7 | ..... | ..... | Blank | Blank | Gloomy | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.48 | 748.8 | 29.68 | 753.9 | 39.4 | 4.1 | ..... | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | D. G. Maclean. [C. |
| Great Yarmouth | 29.44 | 747.8 | 29.44 | 747.8 | 41 | 5.0 | ..... | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Raining | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.28 | 743.7 | 29.45 | 748.0 | 49.6 | 9.8 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The staff, for G.B. Airy. |
| Guernsey | 29.30 | 744.2 | 29.52 | 749.8 | 51 | 10.6 | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Dr. S.E.Hoskins, F.R.S. |
| Helston | 29.54 | 750.3 | 29.66 | 753.4 | 48 | 8.9 | ..... | NW | ..... | ..... | 2 | ..... | 2ck | ..... | ..... | 0 | 0 | Very fine | M. P. Moyle. |
| Holyhead | 29.49 | 749.0 | 29.55 | 750.6 | 45 | 7.2 | ..... | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | John Tilston. |
| Jersey | 29.24 | 742.7 | 29.54 | 750.3 | 50.6 | 10.4 | ..... | WSW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | J. Fisher. |
| Kew, Observatory | 29.41 | 747.2 | 29.46 | 748.3 | 51.5 | 10.8 | ..... | N | 16 | 7.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | The Meteorological Of. |
| Leicester, Museum | 29.24 | 742.7 | 29.50 | 749.3 | 41.9 | 5.5 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.62 | 752.3 | 29.70 | 754.4 | 62 | 16.7 | ..... | W | ..... | ..... | 2 | ..... | 3k | ..... | ..... | ..... | ..... | Blue sky | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.69 | 754.1 | 29.78 | 756.4 | 42 | 5.6 | ..... | ESE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.09 | 764.3 | 77.2 | 25.1 | ..... | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.32 | 744.7 | 29.51 | 749.5 | 40.7 | 4.8 | ..... | NNE | ..... | ..... | 3 | ..... | 10d | ..... | NNE | 0.474 | 12.04 | Raining | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 28.97 | 735.8 | 29.50 | 749.3 | 41.2 | 5.1 | ..... | NNE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.47 | 748.5 | 46 | 7.8 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | H. E. Bellamy. |
| Plymouth | 29.42 | 747.2 | 29.49 | 749.0 | 55.0 | 12.8 | ..... | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Merrifield. |
| Roche's Point | 29.50 | 749.3 | 29.57 | 751.1 | 52 | 11.1 | ..... | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded | Wm. Kennedy, |
| Saint Ann's Head | 29.34 | 745.2 | 29.50 | 749.3 | 50 | 10.0 | ..... | WNW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 41.7 | 5.4 | ..... | SE | 31 | 13.9 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.60 | 751.8 | 29.67 | 753.6 | 57.4 | 14.1 | ..... | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Showery | W. H. Lyne. |
| Sheffield | 29.27 | 743.4 | 29.58 | 751.3 | 40.3 | 4.6 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.49 | 12.4 | Drizzling | W. F. Cooper. |
| Silloth Rectory | 29.67 | 753.6 | 29.70 | 754.4 | 45.2 | 7.3 | 75 | E | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.16 | 740.7 | 29.57 | 751.1 | 40.5 | 4.7 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.24 | 742.7 | 29.46 | 748.3 | 52.0 | 11.1 | ..... | NW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Foggy | C. H. Griffith, F. M. S. |
| Thurso | 29.79 | 756.7 | 29.85 | 758.2 | 43 | 6.1 | ..... | ESE | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | John Trotter. |
| Truro, Royal Institution | 29.46 | 748.3 | 29.50 | 749.3 | 57 | 13.9 | ..... | NW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | W. Newcombe. |
| Valencia, Observatory | 29.56 | 750.8 | 29.58 | 751.3 | 52.8 | 11.6 | ..... | N | 7 | 3.1 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | The Meteorological Of. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.80 | 756.9 | 29.84 | 757.9 | 68.5 | 20.3 | 70 | NW | 15 | 6.7 | ..... | 0 | 1 | ..... | ..... | 0.500 | 12.70 | Raining | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.91 | 759.7 | 55.0 | 12.8 | 77 | W | ..... | ..... | 3 | ..... | 7k | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.74 | 755.4 | 39.0 | 3.9 | ..... | E | ..... | ..... | 4 | ..... | 10g | ..... | ..... | 0.01 | 0.3 | Overcast | Andrew Gibb. |
| Mauritius, Observatory | 29.83 | 757.7 | 30.02 | 762.4 | 79.7 | 26.5 | 76 | N | 4.5 | 2.0 | ..... | 1 | 6 | ..... | SE | 0.20 | 5.1 | Cloudy | C. Meldrum. |
| Melbourne, Observatory | 30.00 | 762.0 | 30.09 | 764.3 | 60.2 | 15.7 | 76 | SSE | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Dull | R. L. J. Ellery. |
| Monach Lt-house, (Hebrides) | ..... | ..... | 29.73 | 755.1 | 46 | 7.8 | ..... | E | ..... | ..... | 3 | 3 | 3 | E | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.00 | 762.0 | 44 | 6.7 | ..... | E | ..... | ..... | 2 | 0 | 4 | Calm | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

## BRITISH MARINE SERIES.

| VESSELS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 45', E. 29° 55' | ..... | ..... | 29.71‡ | 754.6‡ | 66.5 | 19.2 | ..... | WNW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | Showery | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle-Isle, N. 47° 46', W. 14° 18' | ..... | ..... | 29.59‡ | 751.6‡ | 60 | 15.6 | ..... | ENE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 3 | WNW | D. clouds | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam, N. 26° 41', E. 121° 10' | ..... | ..... | 30.08‡ | 764.0‡ | 53 | 11.7 | ..... | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. | | Reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. Direction. | Velocity | | Force. | Clouds. Amount. | | Clouds. Direction. | | Rain-fall or melted snow in the past 24 hours. | | Weather. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | Inches. | Millimeters. | | |
| Punta Arenas | | | | | | | | | | | | | | | | | | | |
| San José | 26.25 | 666.7 | 29.97 | 761.2 | 64.8 | 18.2 | | SE | | | 2 | 3c | | | | 0 | 0 | | Mr. Ansart. Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The elevation of San José is 1,145 meters, or 3,756.6 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.74 | 755.3 | 29.78 | 756.5 | 40.3 | 4.6 | 71 | ESE | | | 4 | | 3 | | | | | | |
| Fanöe | 29.69 | 754.0 | 29.71 | 754.5 | 45.0 | 7.2 | 74 | E | | | 6 | | 8 | | | | | | |
| Godthaab, (Greenland) | 29.81 | 757.1 | 29.85 | 758.2 | 24.6 | — 4.1 | 77 | Calm | | | 0 | | 0 | | | | | | |
| Stykkisholm, (Iceland) | | | | | | | | | | | | | | | | | | | |
| Thorshavn, (Faröe) | 29.96 | 761.0 | 30.00 | 761.9 | 46.4 | 8.0 | 76 | SE | | | 4 | | 5 | | | | | | |
| Vestervig | 29.61 | 752.2 | 29.78 | 756.5 | 42.8 | 6.0 | 94 | NE | | | 6 | | 4 | | | | | | |
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NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 28.99 | 736.4 | 29.54 | 750.4 | 54.3 | 12.4 | 86 | NE | | | 1 | | 5 | | N | 0.071 | 1.8 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 29.39 | 746.6 | 29.50 | 749.4 | 55.4 | 13.0 | 77 | W | | | 1 | | 10 | | | 0.409 | 10.4 | Covered | Bonvallet, Director |
| Avignon, Normal School | 29.47 | 748.5 | 29.55 | 750.5 | 61.2 | 16.2 | 53 | NNW | | | 1 | | 5 | | Calm | 0.110 | 2.8 | Cloudy | M. Giraud, Director. |
| Bar-sur-Seine | 28.96 | 735.6 | 29.51 | 749.5 | 52.9 | 11.6 | 61 | WNW | | | 1 | | 8kn | | W | 0.102 | 2.6 | Very cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.22 | 742.3 | 29.48 | 748.8 | 56.8 | 13.8 | 57 | WSW | | | 1 | | 8 | | WSW | 0 | 0 | Very cloudy | Frere Eugene Marie, Di |
| Besançon, Normal School | 28.65 | 727.7 | 29.54 | 750.3 | 49.3 | 9.6 | 76 | N | | | 2 | | 10 | | SW | 0.402 | 10.2 | Covered | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.70 | 729.0 | 29.60 | 751.8 | 53.1 | 11.7 | 73 | SW | | | 1 | | 8kn | W | N | 0.244 | 6.2 | Very cloudy | M. Marlot, Director. |
| Bourges, Normal School | 28.98 | 736.2 | 29.49 | 749.1 | 55.0 | 12.8 | 64 | WSW | | | 3 | | ck | SW | WSW | 0 | 0 | | A. Waquet, Director |
| Brest, Naval Observatory | 29.26 | 743.2 | 29.50 | 749.4 | 62.2 | 16.8 | 66 | SW | | | 1 | | 4k | | SW | 0.030 | 0.75 | | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.18 | 741.2 | 29.63 | 752.6 | 59.0 | 15 | 53 | W | | | 1 | | 5 | W | W | 0.244 | 6.2 | ⅛ covered | September, Director. |
| Caen, Normal School | 29.40 | 746.8 | 29.44 | 747.7 | 53.6 | 12 | 63 | NW | | | 1 | | 5 | | NW | | | Cloudy | M. Lair, Director. |
| Chartres, Normal School | 28.90 | 734.1 | 29.46 | 748.2 | 55.8 | 13.2 | 94 | N | | | 1 | | 10 | | NE | 0.28 | 7. | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.15 | 740.5 | 29.47 | 748.4 | 54.7 | 12.6 | 54 | SW | | | 2 | | 5 | SW | SW | | | Cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.18 | 715.7 | 29.51 | 749.5 | 56.1 | 13.4 | 53 | SE | | | 1 | | 8 | | W | 0 | 0 | | Alluard, Director. |
| Commercy, Normal School | 28.67 | 728.3 | 29.53 | 750.0 | 49.3 | 9.6 | 76 | NW | | | 1 | | 8n | | NW | 0 | 0 | Very cloudy | Dr. Coulet, Director. |
| Commune de Gréasque* | 28.43 | 722.1 | 29.57 | 751.1 | 55.6 | 13.1 | 61 | NW | | | 3 | | 8 | | NW | 0.024 | 0.6 | ¾ covered | M. Kina, Director. |
| Grenoble, Normal School | 28.81 | 731.8 | 29.57 | 751.0 | 54.0 | 12.2 | 70 | ENE | | | 1 | | 10kn | | S | 0.728 | 18.50 | Covered | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.33 | 745.0 | 29.55 | 750.5 | 56.8 | 13.8 | 63 | NW | | | 1 | | 8 | | NW | 0 | 0 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.20 | 741.6 | 29.50 | 749.3 | 53.1 | 11.7 | 71 | NW | | | 1 | | 8 | | W | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.63 | 727.2 | 29.54 | 750.3 | 49.8 | 9.9 | 86 | N | | | 1 | | 8ck | | W | 0.307 | 7.80 | Very cloudy | Baudry, Director. |
| Lorient, Naval Observatory | 29.44 | 747.8 | 29.54 | 750.3 | 56.8 | 13.8 | 81 | S | | | 2 | | | | SW | 0.032 | 0.81 | | Lt T. Carré, Director |
| Mâcon, Normal School | | | | | | | | | | | | | | | | | | | M. Galzin, Director |
| Marseilles, Observatory | | | 29.53 | 750.1 | 58.3 | 14.6 | 58 | W | | | 3 | | 5 | | | 0 | 0 | Cloudy | The Staff. |
| Mirecourt, Normal School | 28.46 | 722.9 | 29.48 | 748.9 | 52.0 | 11.1 | 86 | WSW | | | 1 | | 10 | | SW | 0.059 | 1.5 | Covered | M. Barbier, Director. |
| Nismes, Normal School | 29.33 | 745.0 | 29.53 | 750.1 | 60.8 | 16 | 79 | W | | | 2 | | 2 | | W | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 28.50 | 724.0 | 29.58 | 751.2 | 46.8 | 8.2 | 97 | N | | | 1 | | | N | N | 0 | 0 | Foggy | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.68 | 626.8 | | | 32.0 | 0.0 | 100 | W | | | 1 | | | | | 0.055 | 1.4 | Foggy | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.51 | 749.6 | 29.54 | 750.4 | 60.4 | 15.8 | 59 | E | | | 1 | | 2 | S | S | 0 | 0 | ¾ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.40 | 746.7 | 29.48 | 748.9 | 54.9 | 12.7 | 62 | NNW | | | 1 | | 5 | SE | W | 0 | 0 | Cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.48 | 748.8 | 29.51 | 749.6 | 52.2 | 11.2 | 75 | N | | | 3 | | 1 | N | N | 0 | 0 | Clear | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.33 | 745.0 | 29.50 | 749.2 | 59.5 | 15.3 | 49 | SW | | | 1 | | | | SSW | 0.016 | 0.4 | | E. Renou, Director. |
| Tarbes, Normal School | 28.57 | 725.6 | 29.63 | 752.7 | 53.6 | 12 | 65 | W | | | 4 | | 10 | | | 0 | 0 | Covered | T. Huguet, Director. |
| Toulouse, Observatory | 28.88 | 733.5 | 29.59 | 751.6 | 54.0 | 12.2 | 90 | SSE | | | 1 | | 8 | | | 0 | 0 | | M. Mercadier Julier. |
| Versailles Observatory | 29.00 | 736.7 | 29.50 | 749.2 | 55.0 | 12.8 | 50 | W | | | 2 | | | | | 0.003 | 0.07 | | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 28.88 | 733.5 | 29.59 | 751.6 | 50.0 | 10 | 93 | NE | | | 1 | | 8 | | S | 0 | 0 | Very cloudy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.80 | 756.8 | 29.82 | 757.5 | 78.8 | 26 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 28.93 | 734.8 | 29.53 | 750.1 | 55.0 | 12.8 | 52 | NNE | | | 1 | | 9 | | SSW | 0.039 | 1.0 | Cloudy | Mr. Jays. |
| Mont-Louis | 24.39 | 619.5 | 29.71 | 754.5 | 36.0 | 2.2 | 64 | SW | 13.0 | 5.8 | | | 7 | | W | 0.051 | 1.3 | | M. Cave. |
| Nice | | | 29.53 | 750.0 | 56.3 | 13.5 | 78 | NNW | | | 1 | | 8 | | | 0.343 | 8.7 | Covered | Dr. A. Nièpce, Jr. |
| Paris, Montsouris Obs'y | 29.22 | 742.1 | | | 55.8 | 13.2 | 52 | WSW | | | 2 | | 8 | | WSW | 0.063 | 1.6 | | Marié Davy, Director. |
| Perpignan | 29.48 | 748.7 | 29.58 | 751.4 | 55.8 | 13.2 | 54 | SE | 15.0 | 6.7 | | | 3 | | W | 0.024 | 0.6 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22 01 | 559.0 | | | 28.8 | — 1.8 | | NW | | | 2 | | 10 | | | 0.622 | 15.8 | Snowy | Gen'l de Nansouty. |
| Tours | 29.33 | 745.0 | 29.53 | 750.0 | 54.3 | 12.4 | 65 | SW | | | 1 | | 7 | | W | 0.016 | 0.4 | | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.24 | 768.0 | 30.26 | 768.7 | 45.0 | 7.2 | 98 | NW | 16.8 | 7.5 | | | 10n | | | 0.264 | 6.7 | Raining | Marc Dechevrens. |
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.58 | 725.8 | 29.40 | 746.8 | 54.9 | 12.7 | 63 | SW | | | 4 | | 3 | W | | 0.217 | 5.5 | | Prof. Dr. Hoh. |
| Berlin | 29.37 | 745.9 | 29.54 | 750.3 | 50.2 | 10.1 | 67 | SE | | | 1 | | 10 | | | | | Light rain | Prof. Arndt. |
| Breslau | 28.95 | 735.4 | 29.48 | 748.7 | 46.0 | 7.8 | 88 | NE | | | 4 | | 10 | | | | | Light rain | Royal University Obs'y |
| Carlsruhe | 29.05 | 737.8 | 29.46 | 748.2 | 55.0 | 12.8 | 70 | NW | | | 2 | | 10 | NW | | 0 | 0 | | Albert Senz. |
| Cassel | 28.88 | 733.5 | 29.47 | 748.6 | 53.6 | 12.0 | 74 | SE | | | 2 | | 10 | SE | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.26 | 743.3 | 29.42 | 747.3 | 51.8 | 11.0 | 91 | W | | | 3 | | 10 | | | 0.55 | 14. | Raining | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.12 | 739.5 | 29.48 | 748.7 | 58.6 | 14.8 | | SSW | | | 2 | | 10 | | | 0.358 | 9.1 | | Physical Society. |
| Freienwalde on the Oder | | | | | | | | | | | | | | | | | | | Assmann., M. D. |
| Friedrichshafen | 28.05 | 712.4 | 29.46 | 748.2 | 55.2 | 11.8 | 66 | W | | | 5 | | 3 | W | | 0.118 | 3.0 | | M. Wilhelm. |
| Hamburg | 29.50 | 749.3 | 29.57 | 751.1 | 48.9 | 9.4 | 63 | ENE | | | 5 | | 10 | | | 0 | 0 | Squally | Captain F. Hegemann. |
| Kiel | 29.65 | 753.0 | 29.66 | 753.4 | 41.4 | 5.2 | 72 | ENE | | | 8 | | 2 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.61 | 752.0 | 29.69 | 754.1 | 47.8 | 8.8 | 61 | E | | | 4 | | 4 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 29.61 | 752.2 | 48.7 | 9.3 | | E | | | 6 | | 0 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.05 | 738.2 | 29.48 | 748.9 | 47.3 | 8.5 | 88 | E | | | 4 | | 9 | ESE | | 0 | 0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.70 | 754.4 | 29.75 | 755.6 | 48.7 | 9.3 | 45 | NE | | | 2 | | 3ck | | | | | | Skalweit. |
| Neufahrwasser | 29.71 | 754.5 | 29.72 | 754.9 | 41.5 | 5.3 | 78 | NNE | | | 3 | | 9 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.27 | 743.5 | 29.56 | 750.8 | 53.4 | 11.9 | 52 | E | | | 8 | | 10 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 28.96 | 735.6 | 29.50 | 749.4 | 50.9 | 10.5 | 87 | Calm | | | 0 | | 10 | | | 0.430 | 10.93 | Rain & hail. | Imp. University Observatory. |
| Stuttgart | 28.54 | 724.8 | 29.47 | 748.4 | 52.7 | 11.5 | 72 | N | | | 1 | | 8 | N | | 0.028 | 0.7 | | Prof. Schoder. |
| Treves (Trier) | 28.94 | 735.0 | 29.45 | 748.1 | 54.5 | 12.5 | 66 | W | | | 4 | | 10 | | | 0 | 0 | | Prof. Flesch. |
| Weissenburg (Bavaria) | 27.96 | 710.2 | 29.44 | 747.7 | 54.1 | 12.3 | 56 | NW | 7 | 3 | | 9ck | | NW | | 0.205 | 5.2 | | Dr. Van Bebber. |
| Wustrow, Naval School | 29.65 | 753.0 | 29.67 | 753.6 | 41.7 | 5.4 | 80 | ENE | | | 6 | | 5s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.25 | 743.0 | 29.64 | 752.8 | 67.5 | 19.7 | | SW | | | 4.5 | | | | | | | Hazy | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.78 | 756.5 | 29.83 | 757.8 | 82.1 | 27.8 | 57 | WNW | 8 | 3.6 | | | 5 | | | 0 | 0 | D. clouds | |
| Deesa | 29.29 | 743.9 | 29.75 | 755.6 | 93.3 | 34.1 | 18 | W | 9.5 | 4.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.77 | 756.0 | 29.80 | 757.0 | 83.1 | 28.4 | 54 | NW | 19 | 8.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.79 | 705.8 | 29.74 | 755.3 | 92.0 | 33.3 | 23 | WNW | | | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 28.99 | 736.2 | 29.71 | 754.7 | 89.1 | 31.7 | 12 | W | 5.2 | 2.3 | | | 4 | | | 0 | 0 | | |
| Belgaum | 27.25 | 692.1 | 29.74 | 755.5 | 83.8 | 28.8 | 66 | W | 23 | 10.3 | | | 2 | E | E | 0 | 0 | D. clouds | |
| Roorkee | 28.78 | 731.1 | 29.66 | 753.3 | 91.8 | 33.2 | 15 | W | 1.4 | 0.6 | | | | | | 0 | 0 | Blue sky | |
| Agra | 29.14 | 740.0 | 29.68 | 753.8 | 97.6 | 36.4 | 16 | W | | | | | | | | 0 | 0 | | |
| Nagpur | 28.63 | 727.2 | 29.63 | 752.5 | 102.0 | 38.9 | 19 | Calm | 4.6 | 2.1 | | | 9 | | E | 0 | 0 | D. clouds | |
| Lucknow | 29.31 | 744.4 | 29.67 | 753.6 | 99.1 | 37.3 | 23 | NNW | 2.0 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.36 | 745.7 | 29.66 | 753.4 | 97.1 | 36.2 | 23 | Calm | 3.5 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.42 | 747.2 | 29.59 | 751.6 | 100.9 | 38.3 | 13 | W | 5.7 | 2.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.69 | 703.4 | 29.63 | 752.6 | 95.3 | 35.2 | 20 | NNW | 11.3 | 5.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.62 | 752.2 | 29.70 | 754.2 | 89.1 | 31.7 | 58 | SSE | 5.1 | 2.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.63 | 752.5 | 29.65 | 753.0 | 88.6 | 31.4 | 66 | SSW | 8.0 | 3.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.24 | 742.6 | 29.62 | 752.2 | 91.8 | 33.2 | 45 | Calm | 5.7 | 2.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.64 | 752.9 | 29.74 | 752.7 | 83.9 | 28.8 | 83 | SSW | 6.0 | 2.7 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.35 | 745.4 | 29.68 | 753.9 | 80.1 | 26.7 | 74 | ENE | 1.0 | 0.4 | | | 10 | W | W | 0 | 0 | D. clouds | |
| Jubbulpore | 28.32 | 719.2 | 29.64 | 752.8 | 93.5 | 34.2 | 19 | Calm | 2.3 | 1.0 | | | 9 | | | 0 | 0 | Overcast | |
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Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation. Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.02 | 737.2 | 29.44 | 747.7 | 60.3 | 15.7 | 61 | SW | 3.8 | 1.7 | ..... | ..... | 4 | ..... | ..... | 1.051 | 26.7 | ..... | Prof. Giovanni Clodig. |
| Milan | 28.95 | 735.2 | 29.46 | 748.2 | 56.8 | 13.8 | 66 | W | ..... | ..... | 2 | ..... | 7 | S | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.30 | 744.1 | 29.41 | 746.9 | 58.5 | 14.7 | 57 | WSW | 8.7 | 3.9 | ..... | ..... | 4 | SW | ..... | 0.394 | 10.0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.56 | 725.5 | 29.47 | 748.5 | 53.8 | 12.1 | 60 | S | 3.1 | 1.4 | ..... | ..... | 4 | ..... | ..... | 0.433 | 11.0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.32 | 744.7 | 29.51 | 749.5 | 52.2 | 11.2 | 64 | SW | 3.1 | 1.4 | ..... | ..... | 4 | SW | ..... | 0.551 | 14.0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.58 | 700.6 | 29.49 | 749.1 | 49.6 | 9.8 | 72 | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.358 | 9.1 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.40 | 746.8 | 29.45 | 748.0 | 57.2 | 14.0 | 69 | NE | 12.5 | 5.6 | ..... | ..... | 8 | SW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.24 | 742.6 | 29.49 | 749.1 | 59.4 | 15.2 | 46 | SW | ..... | ..... | 4 | ..... | 9 | SW | ..... | 0 | 0 | ..... | Cav. F. Meucci |
| Leghorn | 29.41 | 746.9 | 29.49 | 749.0 | 57.2 | 14.1 | 69 | S | ..... | ..... | 4 | ..... | 9 | S | ..... | 0.346 | 8.8 | ..... | Prof. P. Monte. |
| Rome | 29.37 | 746.0 | 29.55 | 750.5 | 60.6 | 15.9 | 58 | W | 11.9 | 5.3 | ..... | ..... | 7 | ..... | ..... | 0.067 | 1.7 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.33 | 742.4 | 29.48 | 748.8 | 63.5 | 17.5 | 48 | WNW | 1.8 | 0.8 | ..... | ..... | 6 | NW | ..... | 0.094 | 2.4 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.69 | 728.8 | 29.57 | 751.1 | 52.7 | 11.5 | 76 | SW | 1.3 | 0.6 | ..... | ..... | 10 | ..... | ..... | 0.992 | 25.2 | ..... | Prof. D. Conti. |
| Cagliari | 29.47 | 748.4 | 29.66 | 753.3 | 61.0 | 16.1 | 46 | W | ..... | ..... | 4 | ..... | 3 | NW | ..... | 0.083 | 2.1 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.39 | 746.5 | 29.64 | 752.9 | 57.2 | 14.0 | 63 | WNW | 12.5 | 5.6 | ..... | ..... | 9 | WSW | ..... | 0.673 | 17.1 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.55 | 750.5 | 29.62 | 752.4 | 61.9 | 16.6 | 43 | NNE | 15.0 | 6.7 | ..... | ..... | 5 | SE | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.04 | 737.6 | 29.60 | 751.7 | 52.2 | 11.2 | 90 | S | 2.5 | 1.1 | ..... | ..... | 10 | ..... | ..... | 0.630 | 16.0 | ..... | Prof. F. Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 29.91 | 759.7 | 29.93 | 760.2 | 47.0 | 8.3 | 97 | E | 0.9 | 0.4 | ..... | ..... | 10s | ..... | ..... | 0.790 | 20.07 | Cloudy | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.72 | 754.9 | 29.92 | 759.9 | 52.9 | 11.6 | 93 | N | 5.1 | 2.3 | ..... | ..... | 9s | ..... | ..... | 0.660 | 16.76 | Cloudy | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.98 | 761.5 | 30.05 | 763.3 | 39.5 | 4.2 | 97 | N | 8.2 | 3.7 | ..... | ..... | 10n | ..... | ..... | 0.690 | 17.53 | Raining | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.08 | 637.0 | 30.18 | 766.6 | 50.0 | 10.0 | 44 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Fine | Prof. L. Perez. |
| Leon | 24.45 | 621.2 | 30.14 | 765.6 | 62.2 | 16.8 | 64 | W | ..... | ..... | 1 | 1c | 0 | Calm | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.11 | 586.9 | 30.04 | 763.1 | 58.3 | 14.6 | 47 | W | 1.1 | 0.5 | ..... | 0 | 5k | ..... | W | 0 | 0 | Hazy | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 59.0 | 15.0 | 44 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. V. de Leon, M. E. |
| Tlacotalpam | 29.83 | 757.6 | 29.84 | 757.9 | 71.8 | 22.1 | 84 | SE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Light fog | M. M. Châzaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.50 | 595.0 | 30.19 | 766.8 | 50.0 | 10.0 | 63 | NE | 1.3 | 0.6 | ..... | 1 | 1 | W | W | 0.02 | 0.6 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. |
| Colima | 28.38 | 720.9 | 30.04 | 763.0 | 74.5 | 23.6 | 43 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guer |

NOTE.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.44 | 747.7 | 29.44 | 747.7 | 50.2 | 10.1 | ..... | W | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.157 | 4.0 | ..... | |
| Groningen | 29.45 | 748.0 | 29.50 | 749.4 | 46.9 | 8.3 | ..... | E | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.45 | 748.0 | 29.45 | 748.0 | 44.6 | 7.0 | ..... | NE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.165 | 4.2 | ..... | |
| Hellevoetsluis | 29.40 | 746.7 | 29.40 | 746.7 | 44.4 | 6.9 | 98 | WSW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.37 | 745.9 | 29.41 | 747.1 | 50.9 | 10.5 | 93 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.008 | 0.2 | Dull | H. v. d. Brink. |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.90 | 759.5 | 29.96 | 760.9 | 48.9 | 9.4 | 34 | NW | 8.9 | 4.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 30.17 | 766.3 | 30.21 | 767.3 | 36.1 | 2.3 | 59 | NE | 18 | 8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.92 | 760.0 | 30.07 | 763.8 | 38.8 | 3.8 | 48 | ENE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.41 | 772.3 | 30.45 | 773.4 | 29.8 | — 1.2 | 54 | E | 7 | 3 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p. m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.92 | 759.9 | 30.11 | 764.8 | 60.1 | 15.6 | 75 | NW | 6.3 | 2.8 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.64 | 728.4 | 29.71 | 754.6 | 59.5 | 15.3 | 66 | W | 17.4 | 7.8 | ..... | ..... | 9 | W | ..... | 0.130 | 3.3 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 29.99 | 761.7 | 30.08 | 763.9 | 69.6 | 20.9 | 68 | SW | 4.9 | 2.2 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.39 | 746.5 | 29.75 | 755.7 | 57.7 | 14.3 | 75 | WSW | 26.2 | 11.7 | ..... | ..... | 9 | ..... | ..... | 0.362 | 9.2 | ..... | The Staff. |
| Ponta Delgada, (Azores). | 30.05 | 763.3 | 30.08 | 764.1 | 64.4 | 18.0 | 56 | NNW | 16.8 | 7.5 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from — | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| Duque da Terceira, Santiago, Cape Verd I. | ..... | ..... | 30.06 | 763.5 | 72.5 | 22.5 | ..... | NE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 4 | ..... | D. clouds.... | C.C.da Fonseca Ferreira, Comd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, St. Thomas, Gulf of Guinea | ..... | ..... | 29.83 | 757.6 | 84 2 | 29 0 | ..... | S | ..... | ..... | 2 | ..... | 7 | ..... | SE | 2 | SE | D. clouds.... | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto Regina, Rio Grande, Senegambia | ..... | ..... | 29.87 | 758.7 | 84.6 | 29.2 | ..... | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | A. Ferreira, 2d Lt. |
| Sá da Bandeira. Ambrizette, S.7° 13', E. 12°52' | ..... | ..... | 29.72 | 755.0 | 83.3 | 28.5 | ..... | W | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 2 | SW | D clouds.... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo. Macao, China | ..... | ..... | 30.07 | 763.8 | 73.8 | 23.2 | ..... | N | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 2 | N | Blue sky..... | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeirá gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.12 | 739.7 | 29.54 | 750.4 | 50.7 | 10 4 | 54 | ENE | 16 | 7 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.27 | 743.4 | 29.69 | 754.2 | 44.4 | 6.9 | 56 | NE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds... | Astronomical Obs. |
| Dorpat | 29.56 | 750.7 | 29.80 | 757.0 | 43.2 | 6.2 | 55 | NNE | 7 | 3 | ..... | ..... | 7ck | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.78 | 756.5 | 29.80 | 756.9 | 38.5 | 3.6 | 78 | W | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 28.95 | 735.2 | 29.59 | 751.5 | 39.4 | 4.1 | 92 | SE | 9 | 4 | ..... | ..... | 10n;ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.63 | 752.6 | 29.70 | 754.4 | 54.9 | 12.7 | 67 | S | 31 | 14 | ..... | ..... | 7s | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.86 | 758.5 | 29.88 | 759.0 | 51.4 | 10.8 | 90 | S | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.16 | 740.6 | 29.72 | 754.9 | 34.3 | 1.3 | 87 | S | 7 | 3 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | Snowing..... | Meteorological Obs. |
| Lugan | 29.50 | 749.3 | 29.71 | 754.5 | 48.4 | 9.1 | 66 | W | 22 | 10 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.09 | 764.3 | 30.11 | 764.8 | 29.8 | — 1.2 | 71 | N | 2 | 1 | ..... | ..... | 1cs | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.52 | 724.4 | 29.91 | 759.7 | 63.5 | 17.5 | 18 | NW | 31 | 14 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.00 | 762.0 | 29.92 | 759.9 | 61.0 | 16.1 | 39 | WSW | 20 | 9 | ..... | ..... | 7k | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.23 | 742.4 | 29.71 | 754.6 | 35.2 | 1.8 | 83 | E | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.47 | 748.5 | 29.74 | 755.5 | 37.9 | 3.3 | 56 | ENE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.08 | 738.7 | 30.06 | 763.5 | 42.8 | 6.0 | 39 | SE | 9 | 4 | ..... | ..... | 3c | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Nukuss | 29.48 | 748.8 | 29.70 | 754.4 | 82.4 | 28.0 | 21 | SE | 9 | 4 | ..... | ..... | 7cs | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.36 | 720.3 | 29.86 | 758.4 | 76.3 | 24.6 | 34 | N | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.87 | 758.8 | 30.40 | 772.1 | 34.7 | 1.5 | 59 | NE | 0 | 0 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeniseisk | 30.15 | 765.8 | 30.46 | 773.7 | 28.0 | — 2.2 | 67 | E | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking, (China) | 30.37 | 771.4 | 30.51 | 775.0 | 35.8 | 2.1 | 38 | NW | 20 | 9 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 30.19 | 766.8 | 30.29 | 769.3 | 27.1 | — 2.7 | 64 | NNE | 9 | 4 | ..... | ..... | 10n | ..... | ..... | Blank | Blank | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47', E. 48° 34'.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.50 | 749.3 | 29.61 | 752.0 | 60.1 | 15.6 | 45 | SSW | 4.9 | 2.17 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Light solar halo | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 29.45 | 748.1 | 29.51 | 749.5 | 61.5 | 16.4 | 86 | S | 5 0 | 2.24 | ..... | 4 | 6 | NW | ..... | 0.051 | 1.3 | Covered..... | Prof. Manuel de Navera |
| Burgos, Met. Obs'y | 26.62 | 676.1 | ..... | ..... | 42.4 | 5.8 | 88 | SW | 6.7 | 3.10 | ..... | ..... | 8 | ..... | ..... | 0.169 | 4.3 | Cloudy..... | Domingo Martiny Perez. |
| Madrid, Royal Oservatory | 27.40 | 695.9 | ..... | ..... | 46.9 | 8.3 | 92 | SW | 4.5 | 2.00 | ..... | 0 | 10 | ..... | ..... | 0.126 | 3.2 | Covered..... | The Staff. |
| Murcia, Met. Obs'y | 29.54 | 750.2 | 29.69 | 754.0 | 67.6 | 19.8 | 43 | SSW | 4.4 | 1.97 | ..... | 5 | 4 | ENE | ..... | 0.084 | 2.13 | Raining..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.52 | 724.5 | 29.41 | 747.1 | 52.3 | 11.3 | 90 | SW | 8.7 | 3.9 | ..... | ..... | 10 | ..... | ..... | 0.843 | 21.4 | Raining..... | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.99 | 761.7 | 30.05 | 763.4 | 72.7 | 22.6 | 82 | E | 3.4 | 1.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Benito Vines, S. J. |
| Manilla, Philippine Islands. | 29.84 | 757.9 | 29.88 | 759.2 | 84.7 | 29.1 | 60 | ESE | 2.8 | 1.2 | ..... | 0 | 1s | ..... | ..... | 0 | 0 | Clear..... | Federico Faura, S. J. |
| San Fernando, Naval Obs'y. | 29.78 | 756.5 | 29.88 | 759.0 | 60.4 | 15.8 | 81 | WSW | 17.3 | 7.8 | ..... | 0 | 10 | ..... | S | 0.003 | 0.1 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W I | 29.91 | 759.8 | 30.00 | 762.1 | 78.1 | 25.6 | 86 | SW | 0 | 0 | ..... | 4sk | 3k | ..... | ..... | 0 | 0 | Cloudy..... | Leonardo de Tejeda, Ch't Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.28 | 769.2 | 30.32 | 770.2 | 27.7 | — 2.4 | ..... | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.22 | 767.6 | 30.27 | 768.9 | 26.6 | — 3.0 | 74 | NE | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.19 | 766.8 | 30.24 | 768.1 | 25.5 | — 3.6 | 78 | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.82 | 757.4 | 30.00 | 761.9 | 31.6 | — 0.2 | 60 | NNE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.78 | 756.5 | 29.84 | 758.0 | 33.4 | 0.8 | 75 | NE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.96 | 760.9 | 30.03 | 762.8 | 31.3 | — 0.4 | 94 | NNE | 21.9 | 9.8 | ..... | ..... | 7 | ..... | NE | 0.002 | 0.05 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.12 | 714.1 | 29.54 | 750.4 | 53.8 | 12.1 | 48 | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.106 | 2.7 | Covered | The Observatory. |
| Zurich | 27.90 | 708.7 | 29.55 | 750.6 | 50.0 | 10.0 | 71 | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.110 | 2.8 | Cloudy | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —10.1 mm.; Thermometer, +1.1 Cent.; Relative Humidity, —10 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.72 | 755.0 | 63.1 | 17.3 | 51 | SW | 9 | 3.9 | ..... | ..... | 10 | ..... | WSW | 0.094 | 2.4 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.24 | 768.0 | 75.7 | 24.3 | ..... | NW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.57 | 751.1 | 63.0 | 17.2 | ..... | SE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0.28 | 7. | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.89 | 759.2 | 30.01 | 762.2 | 66.7 | 19.3 | 61 | WNW | ..... | ..... | 1 | 6c | ..... | ..... | ..... | 0 | 0 | D clouds | Prof. C.V. A.Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.59 | 751.6 | 29.66 | 753.4 | 30.7 | — 0.7 | 75 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | Hon. J. Ferguson. |
| Brockville, Ontario | 29.69 | 754.1 | 30.01 | 762.2 | 35 | 1.7 | ..... | SW | 5 | 2.2 | ..... | 5c | 2s | SW | NW | 0 | 0 | Fair | W. R. Bigg. |
| *Chatham, N. B | 29.59 | 751.6 | 29.65 | 753.1 | 34 | 1.1 | 76 | SW | 2 | 0.9 | ..... | 2k | 0 | W | ..... | 0 | 0 | Fair | G. A. Blair. |
| Charlottetown, P. E. Island | 29.61 | 752.1 | 29.66 | 753.4 | 33 | 0.6 | 73 | W | 6 | 2.7 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.73 | 755.1 | 29.93 | 760.2 | 35.9 | 2.2 | 78 | W | ..... | ..... | 2 | ..... | 10s | ..... | ..... | 0 | 0 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 29.62 | 752.3 | 29.67 | 753.6 | 45.3 | 7.4 | 100 | SE | 8 | 3.6 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | W. H. Bevis. |
| *Father Point, Quebec | 29.75 | 755.6 | 29.77 | 756.1 | 24 | — 4.4 | 84 | NW | 25 | 11.2 | ..... | 5k | 5s | N | N | Inap. | Inap. | Cloudy | J. McWilliams. |
| Fredericton, N. B | 29.66 | 753.4 | 29.72 | 754.9 | 36.0 | 2.2 | 55 | SW | 6 | 2.7 | ..... | ck | 0 | W | ..... | 0 | 0 | Fine | Prof. Harrison. |
| *Fort Garry, Manitoba | 28.78 | 731.0 | 29.61 | 752.1 | 42 | 5.6 | 83 | E | 6 | 2.7 | ..... | 5k | 5n | S | W | 0.330 | 8.38 | Cloudy | James Stewart. |
| Granton, Ontario | 28.94 | 735.1 | 30.07 | 763.8 | 41 | 5.0 | ..... | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 29.60 | 751.8 | 29.73 | 755.1 | 38 | 3.3 | 83 | W | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | F. Allison, M. A. |
| Hamilton, Ontario | 29.75 | 755.6 | 30.14 | 765.5 | 42.5 | 5.8 | 97 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.68 | 753.9 | 30.03 | 762.8 | 37 | 2.8 | 81 | W | 4 | 1.8 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.58 | 751.3 | 29.62 | 752.3 | 38.0 | 3.3 | 85 | NW | 14 | 6.3 | ..... | 4k | 0 | NW | ..... | 0 | 0 | Fair | C. H. Rigby. |
| Moose Factory, Ontario | 30.24 | 768.1 | 30.28 | 769.1 | 14.0 | —10.0 | 80 | NE | ..... | ..... | 1 | 0 | 3 | ..... | ..... | 0 | 0 | Fair | J. R. Nason. |
| *Montreal, Quebec | 29.71 | 754.6 | 29.91 | 759.7 | 35 | 1.7 | 75 | W | 24 | 10.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.30 | 744.2 | 30.02 | 762.5 | 31 | — 0.6 | 79 | Calm | 0 | 0 | ..... | 2cs | 0 | E | ..... | 0 | 0 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 29.27 | 743.4 | 30.03 | 762.8 | 44.2 | 6.8 | 71 | W | ..... | ..... | 1 | 0 | 3s | ..... | ..... | 0 | 0 | Fine | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.38 | 746.2 | 30.10 | 764.5 | 37 | 2.8 | 81 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. Morgan. |
| Port Hastings, N. S | 29.63 | 752.6 | 29.70 | 754.4 | 35.4 | 1.9 | ..... | NW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.44 | 747.8 | 30.11 | 764.8 | 33 | 0.6 | 88 | E | 5 | 2.2 | ..... | 5ck | Haze | W | ..... | 0 | 0 | Hazy | M. Payne. |
| *Quebec, Quebec | 29.50 | 749.3 | 29.83 | 757.7 | 34 | 1.1 | 79 | NW | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.52 | 749.8 | 30.00 | 762.0 | 37 | 2.8 | 62 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. McIntyre. |
| St. Andrews, N. B | 29.72 | 754.9 | 29.77 | 756.1 | 36 | 2.2 | 80 | W | ..... | ..... | 3 | 5k | 5ks | NW | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| St. John, N. B | 29.60 | 751.8 | 29.77 | 756.1 | 33 | 0.6 | 89 | SW | 15 | 6.7 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Overcast | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.31 | 744.5 | 30.03 | 762.8 | 43 | 6.1 | 67 | S | 8 | 3.6 | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Clear | K. Stewart. |
| Stayner, Ontario | 29.22 | 742.2 | 30.02 | 762.5 | 38 | 3.3 | 78 | Calm | 0 | 0 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | R. J. Cole. |
| Stratford, Ontario | 28.73 | 729.7 | 30.04 | 763.0 | 38.0 | 3.3 | 78 | SW | 3 | 1.3 | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Fine | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.61 | 752.1 | 29.65 | 753.1 | 40 | 4.4 | 52 | W | 14 | 6.3 | ..... | 2k | 0 | ..... | ..... | 0 | 0 | Clear | T. C. Hill. |
| *Toronto, Ontario | 29.67 | 753.6 | 30.07 | 763.8 | 40 | 4.4 | 63 | SW | 5 | 2.2 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | Magnetic Observatory. |
| Windsor, N. S | 29.65 | 753.1 | 29.75 | 755.6 | 35.0 | 1.7 | 85 | W | 13 | 5.8 | ..... | ..... | 10n;k | ..... | ..... | 0 | 0 | Overcast | Prof. John E Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 36.0 | 2.2 | 90 | SW | ..... | ..... | ..... | 10k | 10s | ..... | SW | 0.35 | 8.9 | Fair | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.84 | 757.9 | 30.08 | 764.0 | 39 | 3.9 | 55 | S | 4 | 1.8 | ..... | 5c | Sm'e | W | ..... ... | 0 | 0 | Fair | |
| Alpena, Michigan | 29.32 | 744.7 | 30.00 | 762.0 | 35 | 1.7 | 61 | Calm | 0 | 0 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |
| Atlanta, Georgia | 28.98 | 736.1 | 30.14 | 765.5 | 50 | 10.0 | 78 | E | 15 | 6.7 | ..... | 5c | Hz';sm | Calm | Calm | 0 | 0 | Fair | |
| Atlantic City, New Jersey | 30.19 | 766.8 | 30.20 | 767.1 | 44 | 6.7 | 68 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Augusta, Georgia | 30.05 | 763.3 | 30.23 | 767.8 | 48 | 8.9 | 85 | S | 1 | 0.4 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Baltimore, Maryland | 30.16 | 766.1 | 30.21 | 767.3 | 42 | 5.6 | 66 | SW | 3 | 1.3 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Smoky | |
| Barnegat, New Jersey | 30.13 | 765.3 | 30.16 | 766.1 | 46 | 7.8 | 62 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 27.70 | 703.6 | 29.55 | 750.6 | 41 | 5.0 | 73 | NW | 25 | 11.2 | ..... | ..... | 10s | ..... | NW | Inap. | Inap. | Cloudy | |
| Boerne, Texas | 28.41 | 721 6 | 29.68 | 753.9 | 66 | 18.9 | 100 | N | ..... | ..... | 1 | ..... | Fog | ..... | N | 0 | 0 | Dense fog | |
| Boise City, Idaho | 27.30 | 693.4 | 30.26 | 768.6 | 43 | 6.1 | 28 | SE | 4 | 1.8 | ..... | 5cs | 0 | SW | ..... | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.86 | 758 4 | 30.02 | 762.5 | 41 | 5.0 | 49 | W | 14 | 6.3 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Brackettville, Texas | 28.72 | 729.2 | 29.71 | 754.6 | 70 | 21.1 | 24 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.50 | 723.9 | 29.47 | 748.5 | 44 | 6.7 | 92 | E | 19 | 8.5 | ..... | ..... | 10n | ..... | Calm | 0.25 | 6.3 | Light rain | |
| Brownsville, Texas | 29.70 | 754 4 | 29.74 | 755.4 | 74 | 23.3 | 81 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.36 | 745.7 | 30.08 | 764.0 | 37 | 2.8 | 58 | SW | 5 | 2.2 | ..... | 2c | Haze | Calm | Calm | 0 | 0 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 49 | 9.4 | 39 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.66 | 753.4 | 29.95 | 760.7 | 39 | 3.9 | 55 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.48 | 748.8 | 29.86 | 758.4 | 63 | 17.2 | 62 | S | 20 | 8.9 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.23 | 640.8 | 30.03 | 762.8 | 45 | 7.2 | 24 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 36 | 2.2 | 45 | S | ..... | ..... | 1 | 2c | 2s | Calm | Calm | 0 | 0 | Fair | |
| Campo, California | 27.50 | 698.5 | 30.07 | 763.8 | 26 | — 3.3 | 75 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.27 | 768.8 | 30.28 | 769.1 | 50 | 10.0 | 58 | NE | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Henry, Virginia | 30.26 | 768.6 | 30.27 | 768.8 | 40 | 4.4 | 82 | SW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.23 | 767.8 | 30.25 | 768.3 | 49 | 9.4 | 78 | NE | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape May, New Jersey | 30.16 | 766.1 | 30.20 | 767.1 | 43 | 6.1 | 66 | SW | 14 | 6.3 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Castroville, Texas | 29.02 | 737.1 | 29.69 | 754.1 | 69 | 20.6 | 85 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.16 | 766.1 | 30.21 | 767.3 | 56 | 13.3 | 74 | NE | 6 | 2.7 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 23.89 | 606.8 | 29.83 | 757.7 | 27 | — 2.8 | 76 | NW | 23 | 10.3 | ..... | 0 | 2ks | ..... | NW | Inap. | Inap. | Clear | |
| Chicago, Illinois | 29.13 | 739.9 | 29.81 | 757.2 | 48 | 8.9 | 70 | SE | 6 | 2.7 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Cincinnati, Ohio | 29.40 | 746.7 | 30.06 | 763.5 | 47 | 8.3 | 58 | SE | 4 | 1.8 | ..... | 7k | 0 | NW | ..... | 0 | 0 | Fair | |
| Cleveland, Ohio | 29.33 | 745.0 | 30.07 | 763.8 | 44 | 6.7 | 52 | SE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Coleman City, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Columbus, Ohio | 29.19 | 741.4 | 30.03 | 762.8 | 48 | 8.9 | 56 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Concho, Texas | 27.97 | 710.4 | 29.63 | 752.6 | 56 | 13.3 | 63 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.46 | 11.7 | Clear | |
| Corsicana, Texas | 29.28 | 743.7 | 29.73 | 755.1 | 65 | 18.3 | 84 | S | 11 | 4.9 | ..... | 5cs | 5s | Calm | SW | 0.44 | 11.2 | Cloudy | |
| Davenport, Iowa | 29.06 | 738.1 | 29.68 | 753.9 | 49 | 9.4 | 93 | SE | 12 | 5.4 | ..... | ..... | 10n | ..... | S | 0.10 | 2.5 | Light rain | |
| Deadwood, Dakota | 25.15 | 638.8 | ..... | ..... | 29 | — 1.7 | 67 | W | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 0.56 | 14.2 | Cloudy | |
| Decatur, Texas | 28.52 | 724.4 | 29.64 | 752.8 | 65 | 18.3 | 73 | S | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 28.84 | 732.5 | 29.59 | 751.6 | 64 | 17.8 | 83 | S | 12 | 5.4 | ..... | 5k | 2s | S | S | 0.10 | 2.5 | Fair | |
| Denver, Colorado | 24.66 | 626.4 | 29.88 | 758.9 | 35 | 1.7 | 27 | W | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Des Moines, Iowa | 28.61 | 726.7 | 29.45 | 748.0 | 54 | 12.2 | 87 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0.07 | 1.8 | Cloudy | |
| Detroit, Michigan | 29.35 | 745.5 | 30.02 | 762.5 | 45 | 7.2 | 53 | S | 4 | 1.8 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Dodge City, Kansas | 27.16 | 689.8 | 29.43 | 747.5 | 43 | 6.1 | 67 | N | 24 | 10.7 | ..... | 5c | 5ks | W | W | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 29.10 | 739.1 | 29.79 | 756.7 | 48 | 8.9 | 85 | SE | 9 | 4.0 | ..... | ..... | 10n | ..... | SE | 0.04 | 1.0 | Light rain | |
| Duluth, Minnesota | 29.04 | 737.6 | 29.72 | 754.9 | 38 | 3.3 | 81 | NE | 7 | 3.1 | ..... | 5cs | 5s | N | NE | 0 | 0 | Cloudy | |
| Eagle Pass, Texas | 29.06 | 738.1 | 29.77 | 756.1 | 69 | 20.6 | 85 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.70 | 754.4 | 29.77 | 756.1 | 37 | 2.8 | 53 | SW | 10 | 4.5 | ..... | ..... | 10ks | ..... | NW | 0 | 0 | Cloudy | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 72 | 22.2 | 80 | S | ..... | ..... | 1 | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| El Paso, Texas | 26.28 | 667.5 | ..... | ..... | 44 | 6.7 | 30 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.37 | 746.0 | 30.09 | 764.3 | 48 | 8.9 | 56 | S | 9 | 4.0 | ..... | 1c | Haze | Calm | Calm | 0 | 0 | Clear | |
| Escanaba, Michigan | 29.24 | 742.7 | 29.92 | 760.0 | 31 | — 0.6 | 69 | N | 4 | 1.8 | ..... | 2c | 0 | SW | ..... | 0 | 0 | Fair | |
| Florence, Arizona | 28.61 | 726.7 | 30.21 | 767.3 | 45 | 7.2 | 31 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.60 | 701.0 | ..... | ..... | 38 | 3.3 | 90 | NW | 34 | 15.2 | ..... | ..... | 10n | ..... | NW | 0.73 | 18.5 | Light rain | |
| Fort Craig, New Mexico | 25.53 | 648.4 | 29.60 | 751.8 | 47 | 8.3 | 19 | W | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.16 | 639.0 | 30.12 | 765.0 | 53 | 11.7 | 19 | NW | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.02 | 737.1 | 29.53 | 750.0 | 68 | 20.0 | 74 | S | 16 | 7.2 | ..... | 10cs | 0 | S | ..... | Inap. | Inap. | Cloudy | |
| Fort Griffin, Texas | 28.47 | 723.1 | 29.71 | 754.6 | 58 | 14.4 | 22 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.28 | 692.8 | ..... | ..... | 41 | 5.0 | 48 | NW | 28 | 12.5 | ..... | 2c | 0 | NW | ..... | 0.02 | 0.5 | Clear | |
| Fort McKavett, Texas | 27.61 | 701.3 | 29.50 | 749.3 | 55 | 12.8 | 50 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.26 | 6.6 | Clear | |
| Fort St. Michael, Alaska | 29.44 | 747.8 | 29.48 | 748.8 | 13 | —10.6 | 100 | NE | 2 | 0.9 | ..... | ..... | 10k | ..... | E | 0.14 | 3.6 | Cloudy | |
| Fort Sill, Indian Territory | 28.44 | 722.4 | 29.51 | 749.5 | 57 | 13.9 | 58 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Fort Stevenson, Dakota | 27.67 | 702.8 | ..... | ..... | 41 | 5.0 | 83 | W | 26 | 11.6 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Fredericksburg, Texas | 28.11 | 714.0 | 29.61 | 752.1 | 70 | 21.1 | 90 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 29.85 | 758.2 | 29.89 | 759.2 | 72 | 22.2 | 90 | W | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Graham, Texas | 28.64 | 727.4 | 29.65 | 753.1 | 61 | 16.1 | 40 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.26 | 743.2 | 29.91 | 759.7 | 44 | 6.7 | 68 | SE | 5 | 2.2 | ..... | 5cs | 2s | Calm | Calm | 0 | 0 | Fair | |
| Indianapolis, Indiana | 29.14 | 740.1 | 29.91 | 759 7 | 53 | 11.7 | 48 | SE | 11 | 4.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Indianola, Texas | 29.81 | 757.2 | 29.84 | 757.9 | 72 | 22.2 | 90 | S | 9 | 4.0 | ..... | 5cs | 5ks | W | W | 0 | 0 | Threatening | |
| Jacksboro, Texas | 28.55 | 725.2 | 29.64 | 752.8 | 61 | 16.1 | 40 | SE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.37 | 9.4 | Clear | |
| Jacksonville, Florida | 30.13 | 765 3 | 30.15 | 765.8 | 63 | 17.2 | 78 | NE | 7 | 3.1 | ..... | 5k | 0 | NE | ..... | Inap. | Inap. | Fair | |
| Keokuk, Iowa | 28.97 | 735.8 | 29.56 | 750.8 | 53 | 11.7 | 80 | SE | 11 | 4.9 | ..... | ..... | 9s | ..... | SW | 0.08 | 2.0 | Cloudy | |
| Key West, Florida | 30.04 | 763.0 | 30.07 | 763.8 | 72 | 22.2 | 80 | NE | 9 | 4.0 | ..... | 2ck | 0 | SW | ..... | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 30.25 | 768.3 | 30.28 | 769.1 | 43 | 6.1 | 83 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.12 | 739.6 | 30.14 | 765.5 | 44 | 6.7 | 76 | SE | 4 | 1.8 | ..... | Haze | Fog | ..... | ..... | 0 | 0 | Foggy | |
| La Crosse, Wisconsin | 28.92 | 734.6 | 29.64 | 752.8 | 52 | 11.1 | 73 | SE | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Light rain | |
| La Mesilla, New Mexico | 26.11 | 663.2 | 30.26 | 768.6 | 39 | 3.9 | 53 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.40 | 746.7 | 29.72 | 754.9 | 73 | 22.8 | 63 | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.64 | 727.4 | 29.44 | 747.8 | 57 | 13.9 | 87 | S | 6 | 2.7 | ..... | 0 | 2s;sm | ..... | Calm | 0.17 | 4.3 | Fair | |
| Los Angeles, California | 29.76 | 755.9 | 30.11 | 764.8 | 47.0 | 8.3 | 81 | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.43 | 747.5 | 29.98 | 761.5 | 53 | 11.7 | 54 | SE | 6 | 2.7 | ..... | sc;ck | 2s | Calm;S | Calm | 0 | 0 | Cloudy | |
| Lynchburg, Virginia | 29.50 | 749.3 | 30.20 | 767.1 | 39 | 3.9 | 47 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Madison, Wisconsin | 28.74 | 730.0 | 29.71 | 754.6 | 47 | 8.3 | 62 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Marquette, Michigan | 29.16 | 740.7 | 29.86 | 758.4 | 42 | 5.6 | 58 | Calm | 0 | 0 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Mason, Texas | 28.20 | 716.3 | 29.90 | 759.4 | 65 | 18.3 | 89 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.23 | 5.8 | Clear | |
| Memphis, Tennessee | 29.57 | 751.1 | 29.88 | 758.9 | 64 | 17.8 | 73 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Milwaukee, Wisconsin | 29.08 | 738.6 | 29.80 | 756.9 | 46 | 7.8 | 77 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Mobile, Alabama | 30.01 | 762.2 | 30.05 | 763.3 | 68 | 20.0 | 90 | SE | 8 | 3.6 | ..... | 2k | 8s | S | SE | 0 | 0 | Cloudy | |
| Montgomery, Alabama | 29.88 | 758.9 | 30.12 | 765.0 | 60 | 15.6 | 70 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Morgantown, West Virginia | 29.04 | 737.6 | 30.13 | 765.3 | 38 | 3.3 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mt. Washington, N. H. | 23.42 | 594.9 | 29.78 | 756.4 | 14 | —10.0 | 81 | NW | 90 | 40.3 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Clear | |
| Nashville, Tennessee | 29.49 | 749.0 | 30.02 | 762.5 | 56 | 13.3 | 63 | SE | 8 | 3.6 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| New Haven, Connecticut | 29.98 | 761.5 | 30.10 | 764.5 | 49 | 9.4 | 56 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| New London, Connecticut | 30.04 | 763.0 | 30.09 | 764.3 | 44 | 6.7 | 45 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Orleans, Louisiana | 29.89 | 759.2 | 29.95 | 760.7 | 67 | 19.4 | 95 | SE | 8 | 3.6 | ..... | 0 | 5s | ..... | SW | 0 | 0 | Fair | |
| Newport, Rhode Island | 30.00 | 762.0 | 30.06 | 763.5 | 43 | 6.1 | 36 | SW | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New York, New York | 29.96 | 761.0 | 30.14 | 765.5 | 40 | 4.4 | 56 | SW | 4 | 1.8 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Norfolk, Virginia | 30.21 | 767.3 | 30.27 | 768.8 | 43 | 6.1 | 92 | SW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrumental error and temperature. | | BAROMETER. Reduced to sea-level. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. Direction. | WIND. Velocity. | | WIND. Force. | CLOUDS. Amount. | | CLOUDS. Direction. | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10 | Up'er 0—10 | Low'r 0—10. | Upper. From— | Lower. From— | Inches. | Millimeters. | | |
| North Platte, Nebraska | 26.78 | 680.2 | 29.34 | 745.2 | 38 | 3.3 | 63 | NW | 48 | 21.5 | | | 10s | | NW | 0.02 | 0.5 | Cloudy | |
| Olympia, Washington Ter. | 29.88 | 758.9 | 29.92 | 760.0 | 40.0 | 4.4 | 91 | S | 15 | 6.7 | | | 10n | | Calm | 0.06 | 1.5 | Light rain | |
| Omaha, Nebraska | 28.28 | 718.3 | 29.31 | 744.5 | 56 | 13.3 | 81 | SW | 14 | 6.3 | | | 10s | | S | 0.28 | 7.1 | Cloudy | |
| Oswego, New York | 29.74 | 755.4 | 30.06 | 763.5 | 45 | 7.2 | 46 | SW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pembina, Dakota | 28.74 | 730.0 | 29.56 | 750.8 | 42 | 5.6 | 91 | SE | 8 | 3.6 | | | 10s | | SE | 0.03 | 0.8 | Cloudy | |
| Philadelphia, Pa | 30.12 | 765.0 | 30.17 | 766.3 | 42 | 5.6 | 66 | W | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Phœnix, Arizona | 28.90 | 734.0 | 30.76 | 781.3 | 45 | 7.2 | 53 | W | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.40 | 442.0 | 29.61 | 752.1 | — 8 | —22.2 | 100 | NW | 14 | 6.3 | | | 10n | | NW | 0.10 | 2.5 | Light snow | |
| Pioche, Nevada | 24.14 | 613.1 | 29.92 | 760.0 | 27 | — 2.8 | 64 | N | 2 | 0.9 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Pittsburg, Pennsylvania | 29.32 | 744.7 | 30.16 | 766.1 | 34 | 1.1 | 90 | Calm | 0 | 0 | | | Fog | | Calm | 0 | 0 | Foggy | |
| Port Huron, Michigan | 29.34 | 745.2 | 30.01 | 762.2 | 45 | 7.2 | 53 | S | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Portland, Maine | 29.86 | 758.4 | 29.91 | 759.7 | 40 | 4.4 | 56 | W | 12 | 5.4 | | 8k | 0 | Calm | | 0 | 0 | Cloudy | |
| Portland, Oregon | 29.89 | 759.2 | 29.99 | 761.7 | 46.0 | 7.8 | 81 | SE | 6 | 2.7 | | | 10n | | | 0.04 | 1.0 | Light rain | |
| Prescott, Arizona | 24.81 | 630.2 | 30.17 | 766.3 | 28 | — 2.2 | 66 | NW | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pilot Point, Texas | | | | | | | | | | | | | | | | | | | |
| Punta Rassa, Florida | 30.10 | 764.5 | 30.12 | 765.0 | 66 | 18.9 | 84 | NE | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Red Bluff, California | 29.81 | 757.2 | 30.18 | 766.6 | 44 | 6.7 | 84 | SE | 3 | 1.3 | | 10cs | 0 | Calm | | 0 | 0 | Cloudy | |
| Rio Grande City, Texas | 29.57 | 751.1 | 29.78 | 756.4 | 71 | 21.7 | 85 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Rochester, New York | 29.43 | 747.5 | 30.06 | 763.5 | 43 | 6.1 | 43 | W | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Roseburg, Oregon | 29.50 | 749.3 | 30.08 | 764.0 | 47.0 | 8.3 | 48 | S | 7 | 3.1 | | 8cs;ck | 2s | SW | SW | 0.01 | 0.3 | Cloudy | |
| Sacramento, California | 30.12 | 765.0 | 30.20 | 767.1 | 45 | 7.2 | 92 | SE | 3 | 1.3 | | 0 | 0 | | | 0.02 | 0.5 | Clear | |
| St. Louis, Missouri | 29.17 | 740 9 | 29.73 | 755.1 | 54 | 12.2 | 87 | SE | 8 | 3.6 | | | 10s | | S | 0.19 | 4.8 | Cloudy | |
| St. Marks, Florida | 30.12 | 765.0 | 30.14 | 765.5 | 59 | 15.0 | 82 | SE | 4 | 1.8 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| St. Paul, Minnesota | 28.73 | 729.7 | 29.53 | 750.0 | 47 | 8.3 | 85 | E | 12 | 5.4 | | | 10n | | | 0.07 | 1.8 | Light rain | |
| Salt Lake City, Utah | 25.83 | 656.1 | 30.16 | 766.1 | 31 | — 0.6 | 48 | Calm | 0 | 0 | | 0 | 0 | | | 0.21 | 5.3 | Clear | |
| San Antonio, Texas | 29.20 | 741.7 | 29.76 | 755.9 | 72 | 22.2 | 90 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| San Diego, California | 30.04 | 763.0 | 30.11 | 764.8 | 45 | 7.2 | 84 | N | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.38 | 746.2 | 30.05 | 763.3 | 47 | 8.3 | 62 | S | 11 | 4.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Sandy Hook, New Jersey | 30.11 | 764.8 | 30.14 | 765.5 | 46 | 7.8 | 54 | NW | 12 | 5.4 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| San Francisco, California | 30.17 | 766.3 | 30.24 | 768.1 | 48.7 | 9.3 | 71 | W | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 23.17 | 588.5 | 29.71 | 754.6 | 33 | 0.6 | 32 | NW | 13 | 5.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Savannah, Georgia | 30.10 | 764.5 | 30.20 | 767.1 | 57 | 13.9 | 69 | NE | 6 | 2.7 | | 0 | Sm'e | | Calm | 0 | 0 | Clear | |
| Shreveport, Louisiana | 29.63 | 752.6 | 29.84 | 757.9 | 68 | 20.0 | 84 | S | 6 | 2.7 | | | 10s | | W | Inap. | Inap. | Cloudy | |
| Silver City, New Mexico | 24.30 | 617.2 | 30.66 | 778.8 | 33 | 0.6 | 69 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.24 | 768.1 | 30.28 | 769.1 | 54 | 12.2 | 61 | E | 10 | 4.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.93 | 760.2 | 30.06 | 763.5 | 47 | 8.3 | 55 | S | 4 | 1.8 | | 5cs | Sm'e | SW | | 0 | 0 | Fair | |
| Stockton, Texas | 26.90 | 683.2 | 29.90 | 759.4 | 58 | 14.4 | 22 | W | 20 | 8.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.95 | 760.7 | 30.00 | 762.0 | 40 | 4.4 | 65 | NW | 13 | 5.8 | | 2k | 0 | NE | | 0 | 0 | Fair | |
| Toledo, Ohio, | 29.31 | 744.5 | 30.00 | 762.0 | 50 | 10.0 | 58 | S | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Tucson, Arizona | 27.61 | 701.3 | 30.16 | 766.1 | 43 | 6.1 | 43 | S | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.69 | 754.1 | 30.19 | 766.8 | 42.0 | 5.6 | 66 | SE | 6 | 2.7 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Unalashka, Aleutian Islands | | | | | 34 | 1.1 | 80 | SW | | | 6 | | 10s | | SW | 0.05 | 1.3 | Cloudy | |
| Uvalde, Texas | 28.98 | 736.1 | 29.77 | 756.1 | 71 | 21.7 | 75 | N | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.78 | 756.4 | 30.03 | 762.8 | 68 | 20.0 | 84 | SW | 4 | 1.8 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Virginia City, Montana | 24.30 | 617.2 | 29.78 | 756.4 | 20 | — 6.7 | 70 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Visalia, California | 29.81 | 757.2 | 30.20 | 767.1 | 44.7 | 7.1 | 86 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Washington, D. C. | 30.05 | 763.3 | 30.16 | 766.1 | 41.5 | 5.3 | 74 | W | 4 | 1.8 | | 0 | Sm'e | | | 0 | 0 | Clear | |
| Wickenburg, Arizona | | | | | 45 | 7.2 | 31 | NW | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.19 | 766.8 | 30.27 | 768.8 | 48 | 8.9 | 70 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.75 | 654.0 | 30.11 | 764.8 | 27 | — 2.8 | 76 | NE | 8 | 3.6 | | 5cs | 0 | Calm | | 0.05 | 1.3 | Fair | |
| Wood's Holl, Mass | 30.01 | 762.2 | 30.05 | 763.3 | 41 | 5.0 | 57 | W | 12 | 5.4 | | 5c | 0 | | | 0 | 0 | Fair | |
| Yankton, Dakota | 28.10 | 713.7 | 29.33 | 745.0 | 49 | 9.4 | 85 | E | 4 | 1.8 | | 5k | 2s | S | E | 0.03 | 0.8 | Cloudy | |
| Yuma, Arizona | 29.90 | 759.4 | 30.07 | 763.8 | 51 | 10.6 | 65 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.06 | 712.7 | 29.39 | 746.5 | 63 | 17.2 | 72 | | | | | | | | | | | | J. B. Gordon. |
| Havana, Cuba, W. I | 29.94 | 760.5 | 29.99 | 761.7 | 74 | 23.3 | 76 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | | | | | | | | | | | | | 10s | | | | | | James Gall. |
| Medellin, Colombia, S. A | 25.21 | 640.3 | | | 65.0 | 18.3 | 85 | Calm | 0 | 0 | | | 9s;ks | | | 0 | 0 | | Thomas Herran. |
| Navassa, W. I | 29.93 | 760.2 | 30.01 | 762.2 | 80 | 26.7 | | NE | 5.8 | 2.6 | | | | | | 0 | 0 | Partly cl'dy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.01 | 762.2 | 30.01 | 762.2 | 78 | 25.6 | 91 | E | | | 3 | | 10n | E | | 0.130 | 3.30 | Raining | C. J. Hering. |
| Santiago de Cuba, W. I | | | | | | | | | | | | | | | | | | | Robert Mason. |
| St. Thomas, W. I | | | | | | | | | | | | | | | | | | | G. O. Gellich. |
| York Factory, B. A | 30.15 | 765.8 | 30.20 | 767.1 | 4.0 | —15.6 | 87 | E | 9 | 4.0 | | 4k | 1s | E | E | 0 | 0 | Fair | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1.422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.15 | 765.8 | 49 | 9.4 | 44 | 6.7 | 84 | NW | 9 | 4.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 30.20 | 767.1 | 66 | 18.9 | 66 | 18.9 | 94 | E | 20 | 8.9 | ..... | ..... | 10 | ..... | SE | 0 | 0 | ..... | ..... | Threatening | |
| Navy Yard, Portsmouth, N.H. | 30.01 | 762.2 | 64 | 17.8 | 36 | 2.2 | 73 | N | 4 | 1.8 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant..... | |
| Naval Hospital, Yokohama, Japan.....* | 30.09‡ | 764.3‡ | ..... | ..... | 41 | 5.0 | 91 | NNE | ..... | ..... | 5 | ..... | 10n | ..... | ..... | 0.65 | 16.5 | ..... | ..... | Raining ..... | |
| Adams, Panama .....* | 29.95 | 760.7 | 80 | 26.7 | 79 | 26.1 | 86 | NW | ..... | ..... | 3 | ..... | 2 | ..... | NW | ..... | ..... | ..... | ..... | Clear..... | |
| Alaska, Sitka, Alaska..... | 29.28‡ | 743.7‡ | ..... | ..... | 39 | 3.9 | 91 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.40 | 10.2 | Smooth | ..... | Raining ..... | |
| Alliance, Naples, Italy..... | 29.56‡ | 750.8‡ | ..... | ..... | 56 | 13.3 | 94 | ENE | ..... | ..... | 1 | ..... | 10 | ..... | N;W | ..... | ..... | ..... | ..... | Drizzling..... | |
| Ashuelot, Hong-Kong, China. ...* | 29.93‡ | 760.2‡ | ..... | ..... | 73 | 22.8 | 85 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear ..... | |
| Canonicus, New Orleans, La.....* | 29.98 | 761.5 | 50.0 | 10.0 | 69 | 20.6 | 95 | SE | ..... | ..... | 2 | ..... | 5 | ..... | SE | ..... | ..... | ..... | ..... | Fair..... | |
| Colorado, New York, N. Y..... | 30.13 | 765.3 | 51 | 10.6 | 46 | 7.8 | 48 | SW | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Misty..... | |
| Constitution Lisbon, Portugal..... | 29.74‡ | 755.4‡ | ..... | ..... | 61 | 16.1 | 94 | WSW | ..... | ..... | 6 | ..... | 5 | ..... | W | ..... | ..... | ..... | ..... | Misty..... | |
| Despatch, Genoa, Italy..... | 29.49‡ | 749.0‡ | ..... | ..... | 53 | 11.7 | 80 | NE | ..... | ..... | 0–1 | ..... | 8 | ..... | SE | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Franklin, Norfolk, Va.....* | 30.56 | 776.0 | 64 | 17.8 | 45 | 7.2 | 76 | WSW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Gettysburg, Genoa, Italy .....* | 29.66‡ | 753.4‡ | ..... | ..... | 57 | 13.9 | 81 | SSE | ..... | ..... | 1 | ..... | 5 | ..... | S;E | 0.7 | 18. | ..... | ..... | Fair..... | |
| Hartford, Montevideo, Uruguay.* | 29.94 | 760.5 | 66 | 18.9 | 63 | 17.2 | 72 | SSE | ..... | ..... | 6 | ..... | 10 | ..... | SE | 0.01 | 0.3 | Mod'ate | SE | Cloudy..... | |
| Michigan, Erie, Pa.....† | 30.00‡ | 762.0‡ | ..... | ..... | 48 | 8.9 | 63 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Monocacy, Shanghai, China.....* | 30.21‡ | 767.3‡ | ..... | ..... | 45 | 7.2 | 100 | NNW | ..... | ..... | 3 | ..... | 10 | ..... | NNW | ..... | ..... | ..... | ..... | Rainy ..... | |
| Monongahela Yokohama, Japan .....* | 30.00‡ | 762.0‡ | ..... | ..... | 44 | 6.7 | 54 | N | ..... | ..... | 3 | ..... | 10 | ..... | ..... | Mod'ate | Mod'ate | Light | N | Raining..... | |
| New Hampshire, Port Royal, S. C.....* | 30.23 | 767.8 | 65 | 18.3 | 60 | 15.6 | 71 | NE | 15 | 6.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Onward, Callao, Peru.....†* | 30.00 | 762.0 | ..... | ..... | 65 | 18.3 | ?? | Var. | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Long | W | Clear?..... | |
| Palos, Tientsin, China.....* | 30.49 | 774.4 | 60 | 15.6 | 35 | 1.7 | 66 | NNW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 48 | 8.9 | 85 | SW | ..... | ..... | 3 | ..... | 5 | ..... | NE | ..... | ..... | ..... | ..... | Fair ..... | |
| Pensacola, S. 20° 12′, W. 71° 11′..... | 29.90‡ | 761.0‡ | ..... | ..... | 66 | 18.9 | 84 | ENE | 4.8 | 2.1 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | ..... | Cloudy ..... | |
| Plymouth, Portsmouth, N. H..... | 29.95‡ | 761.5‡ | ..... | ..... | 40 | 4.4 | 67 | WNW | ..... | ..... | 1 | ..... | 8 | ..... | E | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Powhatan, Norfolk, Va..... | 30.25‡ | 768.3‡ | ..... | ..... | 46 | 7.8 | 69 | WSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Quinnebaug, Tangier, Morroco..... | 29.90‡ | 759.4‡ | ..... | ..... | 62 | 16.7 | 77 | SW | ..... | ..... | 6 | ..... | 10 | ..... | SW | ..... | ..... | ..... | ..... | Hazy..... | |
| Ranger, Amoy, China.....* | 29.90‡ | 759.4‡ | ..... | ..... | 74 | 23.3 | 90 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear ..... | |
| Richmond, N. 10° 02′, E. 69° 17′..... | 29.86‡ | 758.2‡ | ..... | ..... | 84 | 28.9 | 79 | N | ..... | ..... | 3 | ..... | 5 | ..... | N | 0 | 0 | Smooth | ..... | Fair ..... | |
| Rio Bravo, Brownsville, Texas..... | 29.74 | 755.4 | 74 | 23.3 | 74 | 23.3 | 90 | S | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Saintee, Annapolis, Md..... | 30.18‡ | 766.6‡ | ..... | ..... | 47 | 8.3 | 55 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Saratoga, N. 37° 10′, W. 56° 35′..... | 29.95‡ | 760.7‡ | ..... | ..... | 55 | 12.8 | 62 | N | ..... | ..... | 5 | ..... | 10 | ..... | ..... | Heavy | Heavy | Mod'ate | N | D. clouds..... | |
| St. Louis, League Island, Pa ..... | 30.18‡ | 766.6‡ | ..... | ..... | 40 | 4.4 | 91 | SW | 4 | 1.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Supply, New York, N. Y..... | 30.14‡ | 765.5‡ | ..... | ..... | 45 | 7.2 | 61 | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Trenton Genoa, Italy.....* | 29.47‡ | 748.5‡ | ..... | ..... | 54 | 12.2 | 67 | SW | ..... | ..... | 1 | ..... | 8 | ..... | S | 0.06 | 1.5 | Heavy | S | Cloudy..... | |
| Tuscarora, Port Sacrificios, Mexico.* | 29.88‡ | 758.9‡ | ..... | ..... | 77 | 25.0 | 82 | W | ..... | ..... | 0–1 | ..... | 0 | ..... | ..... | 0 | 0 | Long | S | Clear..... | |
| Vandalia N. 38° 28′, W. 70° 19′....† | 30.13‡ | 765.3‡ | ..... | ..... | 48 | 8.9 | 78 | WNW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Mod'ate | NW | Clear..... | |
| Wabash, Boston, Mass..... | 30.06‡ | 763.5‡ | ..... | ..... | 40 | 4.4 | 91 | SW | 6 | 2.7 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Wyoming, Jaffa, Syria.....* | 29.99‡ | 761.7‡ | ..... | ..... | 66 | 18.9 | 89 | N | ..... | ..... | 2–3 | ..... | 5 | ..... | N | ..... | ..... | Mod'ate | N | Clear ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | SEA-SWELL | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | CHARACTER. | DIRECTION FROM— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | |
| S. S. City of Tokio, Capt. Maury N. 37° 01′, W. 139° 46′ | | 30.22‡ | 767.6‡ | 56 | 13.3 | | NW | | | 6 | | 3k | | | 0 | Heavy | NW | Squally | L. B. Walls. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota, Capt. H. G. Morse, Esquimault, Vancouver I † | | 29.76‡ | 755.9‡ | | | | NE | | | 5 | | 3 | | N | 0 | None | | Hazy | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, Auckland, New Zealand | | 30.16‡ | 765.8‡ | | | | ESE | | | 5 | | 4 | | S | | Mod'ate | SE | Fine | R. C. Ghest, 1st Officer |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroi *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, N. 42° 00′, W. 137° 07′ * | | 29.92‡ | 760.0‡ | 47 | 8.3 | 86 | W | | | 6 | | k | | W | | High | W | Hailing | J. A. Thompson, 2d Offr |
| S. S. Gaelic, Yokohama, Japan † * | | 29.82‡ | 757.4‡ | 62 | 16.7 | 100 | SW | | | 6 | | 8 | | N | Heavy | Smooth | | Raining | Capt. W. H. Kidley |
| § S. S. Oceanic, Capt. J. Metcalf, N. 34° 36′, E. 151° 06′ | | 29.87‡ | 758.7‡ | 64 | 17.8 | 100 | SW | | | 5 | | 10 | | SW | | 2 | SW | Overcast | J. G. Cameron. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. §The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the date may be in error one day; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andreesen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 40° 55′, W. 54° 59′ | | 29.95‡ | 760.7‡ | 47.0 | 8.3 | 77 | NNW | | | 4 | | 8 | | N | 10hours | Rough | NNW | Cloudy | Capt. C. Undütsch. |
| S. S. Leipzig, N. 48° 44′, W. 29° 56′ | | 29.93‡ | 760.2‡ | 54.5 | 12.5 | 61 | NW | | | 2–3 | | 2 | | NW | 0 | Mod'ate | NNW | Fair | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, Capt. G. Meyer, Baltimore, Md | | 29.60‡? | 754.1‡? | | | | NNW | | | 3 | | 5 | | NW | | | | Fair | G. Risius, 3rd Officer. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. Inches. | Barometer reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Lo'wr 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. | Sea-swell. Character. | Sea-swell. Direction From— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AMERICAN S. S. CO. MARINE SERIES.** Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Philadelphia, Pa | | 30.19‡ | 766.8‡ | 41 | 5.0 | | W | | | 2 | | 1 | | W | 0 | | | Clear | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

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| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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**ALLAN LINE MARINE SERIES.**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | J. Powell, 4th Officer. |
| Peruvian | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

**MARINE SERIES. Miscellaneous.**

Furnished by the cooperation of the Observer named.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
| Brigantine "George," of Halifax, N. 28° 15′, W. 65° 00′ †. | | 30.05‡ | 763.3‡ | 70 | 21.1 | | WSW | | | 2 | | 8 | | | | Tranquil | | D. clouds | Willard N. Pratt. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

# BULLETIN

OF

# INTERNATIOAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 10, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGEGIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 29.84 | 758.0 | 63.3 | 17.4 | 88 | WNW | | | 1 | | 10 | | | 0.220 | 5.6 | Covered | Kesxuche. |
| Algiers | | | 29.63 | 752.7 | 65.5 | 18.6 | 59 | W | | | 5 | | 0 | | | 0 | 0 | Clear | Tourillere. |
| La Calle | | | 29.69 | 754.1 | 70.2 | 21.2 | 82 | ENE | | | 1 | | 8 | | | 0 | 0 | Very cloudy | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 29.81 | 757.2 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 29.85 | 758.2 | 58.6 | 14.8 | 61 | N | | | 1 | | 10 | | | 0.079 | 2.0 | Raining | Herbin. |
| Tebessa | | | 29.84 | 757.9 | 70.2 | 21.2 | 28 | W | | | 5 | | 2 | | | 0 | 0 | Fair | Watrin. |
| Geriville | | | 29.87 | 758.8 | 64.6 | 18.1 | 47 | W | | | 4 | | 0 | | | 0 | 0 | Clear | Brugniaux. |
| Laghouat | | | 29.82 | 757.5 | 66.9 | 19.4 | 42 | SSW | | | 4 | | 2 | | | 0 | 0 | Fair | Bertrand. |
| Biskra | | | 29.77 | 756.1 | 77.7 | 25.4 | 15 | SE | | | 1 | | 2 | | | 0.039 | 1.0 | Fair | Chauvaux. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 28.95 | 735.2 | 29.49 | 749.0 | 52.0 | 11.1 | 67 | NE | | | 3 | | 10 | | | 0.059 | 1.5 | Raining | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 28.81 | 731.7 | 29.58 | 751.4 | 40.3 | 4.6 | 87 | N | | | 1 | | 10 | | | 0.185 | 4.7 | | Dr. Wierzbiski. |
| Eperies | 28.56 | 725.5 | 29.44 | 747.8 | 44.6 | 7.0 | 82 | N | | | 2 | | 10ns | | | 0.316 | 8.00 | | Julius Mikolik. |
| Gratz | 28.30 | 718.8 | 29.53 | 750.0 | 54.7 | 12.6 | 69 | S | | | 3 | | 9 | | | 0.457 | 11 6 | | Andreas Rospini. |
| Hermannstadt | 27.96 | 710.1 | 29.34 | 745.1 | 59.4 | 15.2 | 50 | WNW | | | 5 | | 8 | | | 0 | 0 | | Prof. A. Gottschling. |
| Kremsmünster | 28.25 | 717.5 | 29.60 | 751.7 | 44.6 | 7.0 | 92 | W | | | 1 | | 10 | | | 1.043 | 26.5 | | Prof. C. Wagner. |
| Lemberg | 28.39 | 721.0 | 29.36 | 745.7 | 79.5 | 9.7 | 92 | NE | | | 1 | | 10 | | | 0.280 | 7.1 | | Dr. T. Stanecki. |
| Pola | 29.51 | 749.6 | 29.62 | 752.4 | 58.5 | 14.7 | 64 | SSW | | | 1 | | 0 | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 28.89 | 733.8 | 29.35 | 745.4 | 51.6 | 10.9 | 96 | NW | | | 2 | | 10 | | | 0.697 | 17.7 | | Julius Csics, S. J. |
| Szegedin | 29.15 | 740.5 | 29.43 | 747.5 | 53.2 | 11.8 | 83 | W | | | 2 | | 10 | | | 0.805 | 20.45 | | Karl Stancel. |
| Trieste | 29.52 | 749.7 | 29 62 | 752.3 | 59.7 | 15.4 | 68 | W | | | 1 | | 4 | | | 0 | 0 | Almost clear | P. Busin. |
| Vienna | 28.85 | 732.9 | 29.58 | 751.2 | 46.6 | 8.1 | 77 | NNW | | | 2 | | 10 | | | 0.492 | 12.5 | | I. R. Central Met. Obs'y |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.49 | 749.0 | 29.69 | 754.0 | 52.2 | 11.2 | 73 | NE | | | 2 | | 9 | | NE,N | 0.035 | 0.90 | | Royal Observatory. |
| Furnes | 29.71 | 754.4 | 29.72 | 755.0 | 49.6 | 9.8 | 88 | NNW | | | 4 | | 7 | | | 0.004 | 0.1 | Foggy | M. E. de Cae. |
| Maeseyck | 29.60 | 751.8 | 29.72 | 755.0 | 44.2 | 6.8 | 89 | N | | | 2 | | 10 | | | 0.075 | 1.9 | Foggy | M. Pierrot. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:0 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London., Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.08 | 764.0 | 30.19 | 736.8 | 39.7 | 4.3 | ..... | E | 9 | 4.0 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | D. clouds | W. Boswell. |
| Ardrossan | 30.03 | 762.8 | 30.05 | 763.3 | 48 | 8.9 | ..... | ENE | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.03 | 762.8 | 43.2 | 6.3 | ..... | ENE | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.92 | 760.0 | 39.0 | 3.9 | ..... | ENE | 32 | 14.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.95 | 760.7 | 38.3 | 3.5 | ..... | E | 36 | 16.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Squally | Thomas Mackereth. |
| Bradford, Yorkshire | 29.59 | 751.6 | 29.98 | 761.5 | 38.1 | 3.4 | ..... | E | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.12 | 3.0 | Overcast | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.91 | 759.7 | 29.94 | 760.5 | 84 | 28.9 | ..... | SE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.84 | 757.9 | 40.0 | 4.4 | ..... | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | H. Todd. [O. |
| Cardington | ..... | ..... | 29.81 | 757.2 | 40.0 | 4.4 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | John McLaren. |
| Chatham, School M. E. | 29.64 | 752.8 | 29.78 | 756.4 | 43.2 | 6.2 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.20 | 716.3 | 29.69 | 754.1 | 39.0 | 3.9 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | Alexander Watt. |
| Donaghadee | 30.00 | 762.0 | 30.04 | 763.0 | 46 | 7.8 | ..... | E | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 29.71 | 754.6 | 29.74 | 755.4 | 48 | 8.9 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | J. Costello. |
| Falmouth, Observatory | 29.51 | 749.5 | 29.74 | 755.4 | 44.3 | 6.8 | ..... | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.45 | 697.2 | 29.77 | 756.1 | 73.5 | 23.1 | ..... | E | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.68 | 753.9 | 29.90 | 759.4 | 87 | 30.6 | ..... | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's college | ..... | ..... | 29.93 | 760.2 | 49 | 9.4 | ..... | NE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 29.81 | 757.2 | 29.86 | 758.4 | 56.5 | 13.6 | ..... | W | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | Blue sky | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.89 | 759.2 | 30.09 | 764.3 | 48.0 | 6.1 | ..... | NNE | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | D. G. Maclean. [O. |
| Great Yarmouth | 29.82 | 757.4 | 29.83 | 757.7 | 38 | 3.3 | ..... | ENE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Raining | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.60 | 751.8 | 29.77 | 756.1 | 43.0 | 6.1 | ..... | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The staff, for G.B. Airy. |
| Guernsey | 29.46 | 748.3 | 29.68 | 753.9 | 50.5 | 10.3 | ..... | ESE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Dr. S.E. Hoskins, F.R.S. |
| Helston | 29.75 | 755.6 | 29.87 | 758.7 | 48 | 8.9 | ..... | NE? | ..... | ..... | 0? | ..... | 10n | ..... | ..... | ..... | ..... | Raining | M. P. Moyle. |
| Holyhead | 29.88 | 758.9 | 29.94 | 760.5 | 42 | 5.6 | ..... | ENE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Tilston. |
| Jersey | 29.42 | 747.2 | 29.72 | 754.9 | 48.5 | 9.2 | ..... | SE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | Foggy | J. Fisher. |
| Kew, Observatory | 29.74 | 755.4 | 29.78 | 756.4 | 44.1 | 6.7 | ..... | NE | 18 | 8.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | The Meteorological Of. |
| Leicester, Museum | 29.62 | 752.3 | 29.88 | 758.9 | 38.1 | 3.4 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.79 | 756.7 | 29.86 | 758.4 | 64 | 17.8 | ..... | SE | ..... | ..... | 3 | ..... | 2k | ..... | ..... | ..... | ..... | Blue sky | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 30.06 | 763.5 | 30.15 | 765.8 | 43 | 6.1 | ..... | ESE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Clear | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.04 | 763.0 | 75.5 | 24.2 | ..... | SE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.79 | 755.1 | 29.93 | 760.2 | 36.8 | 2.7 | ..... | NNE | ..... | ..... | 5 | ..... | 10ck | ..... | ENE | 0.388 | 9.86 | Raining | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.33 | 745.0 | 29.87 | 758.7 | 37.0 | 2.8 | ..... | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.79 | 756.7 | 42 | 5.6 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | H. E. Bellamy. |
| Plymouth | 29.64 | 752.8 | 29.71 | 754.6 | 43.8 | 6.6 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Merrifield. |
| Roche's Point | 29.81 | 757.2 | 29.89 | 759.2 | 47 | 8.3 | ..... | NNE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Wm. Kennedy. |
| Saint Ann's Head | 29.63 | 752.6 | 29.79 | 756.7 | 42 | 5.6 | ..... | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 44.1 | 6.7 | ..... | N | 8 | 3.6 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.54 | 750.3 | 29.61 | 752.1 | 61.4 | 16.3 | ..... | SW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | W. H. Lyne. |
| Sheffield | 29.70 | 754.4 | 29.97 | 761.2 | 35.6 | 2.0 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.08 | 2.0 | Overcast | W. F. Cooper. |
| Silloth Rectory | 30.03 | 762.8 | 30.06 | 763.5 | 45.1 | 7.3 | 63 | E | ..... | ..... | 8 | ..... | 3 | ..... | ..... | 0 | 0 | D. clouds | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.53 | 750.0 | 29.93 | 760.2 | 38.7 | 3.7 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Squally | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.53 | 750.0 | 29.75 | 755.6 | 45.1 | 7.3 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Rain and fog | C. H. Griffith, F. M. S. |
| Thurso | 30.14 | 765.5 | 30.20 | 767.1 | 46 | 7.8 | ..... | NNE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy | John Trotter. |
| Truro, Royal Institution | 29.71 | 754.6 | 29.76 | 755.9 | 47 | 8.3 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | W. Newcombe. |
| Valencia, Observatory | 29.91 | 759.7 | 29.93 | 760.2 | 46.0 | 7.8 | ..... | NE | 17 | 7.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.97 | 761.2 | 30.01 | 762.2 | 59.3 | 15.2 | 71 | SW | 18 | 8.0 | ..... | 9 | 8 | ..... | ..... | 0.130 | 3.30 | Raining | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.02 | 762.5 | 57.0 | 13.9 | 88 | SE | ..... | ..... | 2 | ..... | 10kn | ..... | ..... | 0 | 0 | Cloudy | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 30.14 | 765.5 | 43.0 | 6.1 | ..... | E | ..... | ..... | 4 | ..... | 5k | ..... | ..... | 0 | 0 | Cloudy | Andrew Gibb. |
| Mauritius, Observatory | 29.90 | 759.4 | 30.09 | 764.3 | 80.4 | 26.9 | 73 | E | 18.0 | 8.0 | ..... | 0 | 4 | ..... | ESE | 0.08 | 2.0 | Squally | C. Meldrum. |
| Melbourne, Observatory | 30.06 | 763.5 | 30.15 | 765.8 | 59.0 | 15.0 | 70 | SSE | 8 | 3.6 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | Fine | R. L. J. Ellery. |
| MonachLt-house, (Hebrides) | ..... | ..... | 30.15 | 765.8 | 48 | 8.9 | ..... | SE | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.17 | 766.3 | 43 | 6.1 | ..... | NE | ..... | ..... | 6 | 0 | 5 | Calm | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

| British Marine Series. Vessels. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 45′, E. 29° 55′ | W | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Squally | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle-Isle, N. 48° 23′, W. 11° 54′ | NNW | ..... | 5 | ..... | 5 | ..... | ..... | ..... | 5 | NNE | D. clouds | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole, N. 52° 00′, W. 5° 36′ | NE | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Drizzling | Capt. E. W. Turner. |
| S. S. Nizam, N. 28° 33′, E. 122° 06′ | NNE | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Overcast | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.23 | 666.2 | 29.95 | 760.7 | 67.1 | 19.5 | ..... | SE | ..... | ..... | 2 | 3cs | ..... | ..... | ..... | 0 | 0 | ..... | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The elevation of San José is 1,145 meters, or 3,756.6 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.91 | 759.6 | 29.95 | 760.8 | 33.4 | 0.8 | 54 | ENE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Snowing |
| Faröe | 29.96 | 761.0 | 29.98 | 761.5 | 32.7 | 0.4 | 68 | NE | ..... | ..... | 6 | ..... | 9 | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.60 | 751.8 | 29.64 | 752.9 | 35.2 | 1.8 | 64 | Calm | ..... | ..... | 0 | ..... | 6 | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 30.27 | 768.8 | 30.30 | 769.7 | 45.0 | 7.2 | 70 | E | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.88 | 759.0 | 30.05 | 763.3 | 30.9 | — 0.6 | 85 | NE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.15 | 740.5 | 29.70 | 754.5 | 54.0 | 12.2 | 65 | NE | ..... | ..... | 1 | ..... | 8 | ..... | NW | 0.12 | 3. | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 29.45 | 748.0 | 29.56 | 750.7 | 62.2 | 16.8 | 87 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bonvallet, Director |
| Avignon, Normal School | 29 7 | 748.4 | 29.54 | 750.4 | 63.7 | 17.6 | 50 | SSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | M. Giraud, Director |
| Bar-sur-Seine | 2 .08 | 738.5 | 29.62 | 752.4 | 55.8 | 13.2 | 52 | ENE | ..... | ..... | 1 | ..... | 8kn | ..... | NE | 0 | 0 | Very cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.41 | 747.1 | 29.67 | 753.7 | 56.6 | 13.6 | 57 | ENE | ..... | ..... | 1 | ..... | 8 | ..... | NE | 0 | 0 | Very cloudy | Frere Eugene Marie, Dr |
| Besançon, Normal School | 28.72 | 729.4 | 29.59 | 751.6 | 57.7 | 14.3 | 58 | NE | ..... | ..... | 1 | ..... | 2 | ..... | E | 0.094 | 2.4 | Slightly cl'dy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.75 | 730.3 | 29.66 | 753.4 | 59.2 | 15.1 | 52 | W | ..... | ..... | 1 | ..... | ..... | W | W | 0.35 | 9. | Slightly cl'dy | M. Marlot, Director. |
| Bourges, Normal School | 29.08 | 738.5 | 29.62 | 752.3 | 57.2 | 14 | 67 | SE | ..... | ..... | 1 | ..... | 10sn | SE | SE | ..... | ..... | Raining | A. Waquet, Director |
| Brest, Naval Observatory | 29.41 | 747.1 | 29.66 | 753.3 | 51.8 | 11.0 | 77 | NNW | ..... | ..... | 1 | ..... | 10 | ..... | NNW | 0.157 | 4.00 | ..... | M. de Rermaree, Director |
| Carcassonne, Normal School | 29.06 | 738.2 | 29.47 | 748.6 | 55.8 | 13.2 | 69 | E | ..... | ..... | 3 | ..... | 5 | E | E | 0 | 0 | Cloudy | September, Director. |
| Caen, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Lair, Director. |
| Chartres, Normal School | 29.00 | 738.2 | 29.62 | 752.4 | 55.8 | 13.2 | 97 | N | ..... | ..... | 1 | ..... | 10 | ..... | SW | 0.08 | 2. | Raining | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.30 | 744.1 | 29.61 | 752.1 | 58.6 | 14.8 | 55 | SE | ..... | ..... | 3 | ..... | 8 | NNE | NNE | ..... | ..... | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.25 | 717.6 | 29.58 | 751.4 | 58.3 | 14.6 | 42 | W | ..... | ..... | 1 | ..... | 5 | ..... | W | 0.016 | 0.4 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.78 | 731.0 | 29.66 | 753.4 | 58.6 | 12 | 69 | NW | ..... | ..... | 1 | ..... | 8kn | ..... | NW | 0 | 0 | Very cloudy | Dr. Coulet, Director |
| Commune de Gréasque* | 28.43 | 722.2 | 29.58? | 751.2? | 54.1 | 12.3 | 57 | SE | ..... | ..... | 3 | ..... | 8 | ..... | S | 0 | 0 | ¾ covered | M. Kina, Director. |
| Grenoble, Normal School | 28.77 | 730.8 | 29.56 | 750.9 | 58.3 | 14.6 | 74 | NW | ..... | ..... | 3 | ..... | 5kn | ..... | SE | 0 | 0 | Cloudy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.46 | 748.2 | 29.67 | 753.5 | 59.7 | 15.4 | 61 | NW | ..... | ..... | 1 | ..... | 5 | ..... | NW | 0 | 0 | Cloudy | Mouillot, Director |
| Le Mans, Normal School | 29.36 | 745.6 | 29.66 | 753.4 | 52.7 | 11.5 | 78 | SE | ..... | ..... | 2 | ..... | 8 | ..... | NE | 0 | 0 | Very cloudy | Poirrier, Director |
| Lons-Le-Saulnier, N. School | 28.69 | 728.8 | 29.60 | 751.9 | 55.6 | 13.1 | 53 | N | ..... | ..... | 1 | ..... | 8n | ..... | N | 0 | 0 | Very cloudy | Baudry, Director. |
| Lorient, Naval Observatory | 29.60 | 751.8 | 29.70 | 754.3 | 54.0 | 12.2 | 74 | SW | ..... | ..... | 3 | ..... | ..... | ..... | SW | 0.331 | 8.40 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Marseilles, Observatory | ..... | ..... | 29.53 | 750.1 | 52.3 | 11.3 | 84 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.252 | 6.40 | Cloudy | The Staff |
| Mirecourt, Normal School | 28.57 | 725.7 | 29.00 | 751.7 | 53.4 | 11.9 | 85 | NE | ..... | ..... | 1 | ..... | 2 | ..... | NE | 0 | 0 | Slightly cl'dy | M. Barbier, Director. |
| Nîmes, Normal School | 29.34 | 745.3 | 29.54 | 750.3 | 57.3 | 10.6 | 60 | N | ..... | ..... | 2 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 28.53 | 724.6 | 29.57 | 751.0 | 59.9 | 15.5 | 55 | N | ..... | ..... | 1 | ..... | ..... | N | N | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.75 | 628.6 | ..... | ..... | 31.3 | 1.3 | 76 | E | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.65 | 753.0 | 29.68 | 753.8 | 55.8 | 13.2 | 66 | N | ..... | ..... | 1 | ..... | 10 | N | N | 0.08 | 2. | Raining | Lt. Decante, Director. |
| Rouen, Normal School | 29.58 | 751.4 | 29.67 | 753.6 | 59.0 | 15 0 | 40 | NNE | ..... | ..... | 1 | ..... | 5 | SE | NE | 0 | 0 | Cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.65 | 753.0 | 29.68 | 753.8 | 58.6 | 12.0 | 65 | N | ..... | ..... | 3 | ..... | 1 | NNE | NNE | 0 | 0 | Clear | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.49 | 749.0 | 29.65 | 753.2 | 56.1 | 13.4 | 56 | E | ..... | ..... | 1 | ..... | ..... | ..... | ENE | 0.854 | 21.7 | Stormy | E. Renou, Director. |
| Tarbes, Normal School | 28.68 | 728.5 | 29.70 | 755.8 | 53.6 | 12 | 54 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.28 | 7. | Raining | T. Huguet, Director. |
| Toulouse, Observatory | 28.93 | 734.9 | 29.65 | 753.1 | 48.9 | 9.4 | 92 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.106 | 2.8 | Raining | M. Mercadier Julier. |
| Versailles Observatory | 29.17 | 740.9 | 29.66 | 753.4 | 54.0 | 12.2 | 63 | E | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.360 | 9.16 | ..... | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 28.83 | 732.2 | 29.52 | 749.9 | 58.1 | 14.5 | 73 | E | ..... | ..... | 3 | ..... | 2 | ..... | W | 0 | 0 | Slightly cl'dy | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.78 | 756.5 | 29.81 | 757.2 | 77.7 | 25.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marci 6sl. |
| Lyons Obs'y, (Park Station) | 28.98 | 736.0 | 29.58 | 751.2 | 60.8 | 16.0 | 47 | NNE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Mr. Jays. |
| Mont-Louis | 24.39 | 619.5 | 29.70 | 754.5 | 37.4 | 3.0 | 79 | E | 18.6 | 8.3 | ..... | ..... | 9 | ..... | S | 0.079 | 2.0 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.58 | 751.3 | 59.9 | 15.5 | 72 | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.37 | 746.1 | ..... | ..... | 54.7 | 12.6 | 64 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | NE | 0.004 | 0.1 | Sprinkling | Marié Davy, Director. |
| Perpignan | 29.47 | 748.5 | 29.68 | 751.2 | 54.7 | 12.6 | 68 | NE | 11.2 | 5.0 | ..... | ..... | 9 | ..... | NE | 0.055 | 1.4 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.06 | 560.2 | ..... | ..... | 31.3 | — 0.4 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.945 | 24.0 | Snowy | Gen'l de Nansouty. |
| Tours | 29.46 | 748.1 | 29.65 | 753.1 | 53.6 | 12.0 | 76 | NW | ..... | ..... | 1 | ..... | 7 | ..... | NNW | 0 | 0 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.47 | 773.9 | 30.49 | 774.5 | 37.4 | 3.0 | 76 | NNW | 4.7 | 2.1 | ..... | 8ck | ..... | W | ..... | 0.457 | 11.6 | Fair | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.74 | 730.1 | 29.58 | 751.2 | 44.4 | 6.9 | 67 | NE | | | 6 | | 6 | E | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.62 | 752.3 | 29.80 | 756.8 | 41.5 | 5.3 | 62 | E | | | 1 | | 8 | | | 0.004 | 0.09 | | Prof. Arndt. |
| Breslau | 29.16 | 740.7 | 29.69 | 754.0 | 41.7 | 5.4 | 62 | NNE | | | 3 | | 10 | NNE | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.20 | 741.6 | 29.61 | 752.2 | 55.0 | 12.8 | 70 | NE | | | 2 | | 10 | N | | 0 | 0 | | Albert Senz. |
| Cassel | 29.14 | 740.2 | 29.74 | 755.5 | 43.9 | 6.6 | 78 | NE | | | 4 | | 10 | ENE | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.55 | 750.5 | 29.71 | 754.6 | 43.7 | 6.5 | 87 | NE | | | 5 | | 10 | | | 0.08 | 2. | Hazy | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.31 | 744.5 | 29.68 | 753.9 | 51.4 | 10.8 | | NNE | | | 2 | | 10 | | | 0.035 | 0.9 | | Physical Society. |
| Freienwalde on the Oder | | | | | | | | | | | | | | | | | | | Assmann., M. D. |
| Friedrichshafen | 28.18 | 715.7 | 29.59 | 751.6 | 54.7 | 12.6 | 71 | SSW | | | 3 | | 5 | NE | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.81 | 757.1 | 29.88 | 759.0 | 34 9 | 1.6 | 75 | ENE | | | 4 | | 10n | | | 0.008 | 0.2 | Light snow. | Captain F. Hegemann. |
| Kiel | 29.91 | 759.7 | 29.93 | 760.1 | 32.5 | 0.3 | 93 | NE | | | 4 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.67 | 753.6 | 29.75 | 755.7 | 39.7 | 4.3 | 76 | NE | | | 5 | | 4 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 29.78 | 756.3 | 33.1 | 0.6 | | NE | | | 6 | | 6 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.31 | 744.5 | 29.74 | 755.4 | 41.7 | 5.4 | 66 | NE | | | 2 | | 10 | | | | | Rainy | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.72 | 754.8 | 29.76 | 756.0 | 55.4 | 1.9 | 65 | NE | | | 4 | | 10ks | | | | | | Skalweit. |
| Neufahrwasser | 29.78 | 756.5 | 29.80 | 756.9 | 34.7 | 1.4 | 82 | NNE | | | 4 | | 10 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.34 | 745.1 | 29.63 | 752.5 | 47.8 | 8.8 | 41 | E | | | 8 | | 9 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.08 | 738.5 | 29.61 | 752.2 | 57.0 | 13.9 | 58 | ENE | | | 2 | | 6 | NE | | 0.525 | 13.33 | | Imp. University Observatory. |
| Stuttgart | 28.66 | 728.0 | 29.60 | 751.7 | 52.7 | 11.5 | 75 | NE | | | 1 | | 10 | | | 0 | 0 | | Prof. Schoder. |
| Treves (Trier) | 29.19 | 741.5 | 29.71 | 754.6 | 51.4 | 10.8 | 80 | E | | | 5 | | 10 | | | 0.160 | 1.53 | | Prof. Flesch. |
| Weissenburg (Bavaria) | 28.12 | 714.2 | 29.63 | 752.5 | 45.9 | 7.7 | 80 | NE | 1.1 | 0.5 | | | 10 | E | | 0.008 | 0.2 | Foggy | Dr. Van Bebber |
| Wustrow, Naval School | 29.86 | 758.6 | 29.89 | 759 2 | 32.5 | 0.3 | 85 | NE | | | 7 | | 10ks | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.43 | 747.4 | 29.81 | 757.2 | 68.9 | 20.5 | | SW | | | 1.5 | | | | | | | Clear | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.79 | 756.6 | 29.84 | 757.9 | 82.4 | 28.0 | 61 | W | 6 | 2.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.30 | 744.3 | 29.76 | 756.0 | 95.9 | 35.5 | 20 | W | 5.0 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.75 | 755.7 | 29.79 | 756.6 | 82.9 | 28.3 | 65 | NW | 21 | 9.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.80 | 706.0 | 29.74 | 755.4 | 93.7 | 34.3 | 14 | WNW | | | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.04 | 737.6 | 29.77 | 756.0 | 91.6 | 33.1 | 13 | W | 1.8 | 0.8 | | | 6 | | | 0 | 0 | | |
| Belgaum | 27.26 | 692.4 | 29.75 | 755.7 | 84.4 | 29.1 | 71 | W | 15 | 6.7 | | | 7 | E | E | 0 | 0 | Gloomy | |
| Roorkee | 28.83 | 732.4 | 29.71 | 754.6 | 92.0 | 33.3 | 10 | W | 3.0 | 1.3 | | | 1 | | | 0 | 0 | D. clouds | |
| Agra | 29.20 | 741.6 | 29.74 | 755.4 | 96.6 | 35.9 | 11 | N | | | | | | | | 0 | 0 | | |
| Nagpur | 28.64 | 727.5 | 29.64 | 752.8 | 101.0 | 33.3 | 24 | NE | 3.3 | 1.5 | | | 8 | | | 0 | 0 | D. clouds | |
| Lucknow | 29.34 | 745.2 | 29.71 | 754.5 | 96.1 | 35.6 | 32 | NW | 1.7 | 0.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.38 | 746.2 | 29.68 | 753.9 | 97.3 | 36.3 | 18 | Calm | 2.3 | 1.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.45 | 748.1 | 29.63 | 752.5 | 99.2 | 37.3 | 16 | WNW | 3.9 | 1.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.72 | 704.2 | 29.67 | 753.6 | 93.3 | 34.1 | 23 | NW | 14.3 | 6.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.61 | 752.1 | 29.69 | 754.1 | 89.9 | 33.2 | 56 | S | 4.9 | 2.2 | | | 3 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.64 | 752.9 | 29.66 | 753.4 | 90.8 | 32.7 | 68 | SSW | 6 | 2.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.20 | 741.7 | 29.58 | 751.3 | 91.5 | 33.1 | 44 | NE | 4.4 | 2.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.64 | 752.8 | 29.73 | 755.1 | 84.1 | 28.9 | 82 | Calm | 6.1 | 2.7 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.38 | 746.2 | 29.72 | 754.8 | 75.6 | 24.2 | 74 | ENE | 2.5 | 1.1 | | | 10 | W | W | 0.15 | 3.8 | D clouds | |
| Jubbulpore | 28.40 | 721.3 | 29.71 | 754.6 | 99.5 | 37.5 | 14 | Calm | 2.9 | 1.3 | | | 0 | | | 0 | 0 | Blue sky | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,352 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.19 | 741.5 | 29.61 | 752.0 | 60.6 | 15.9 | 57 | SE | 2.5 | 1.1 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.04 | 737.7 | 29.56 | 750.8 | 60.6 | 15.9 | 53 | WNW | ..... | ..... | 4 | ..... | 6 | SW | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.43 | 747.5 | 29.54 | 750.3 | 59.9 | 15.5 | 53 | WSW | 11.2 | 5.0 | ..... | ..... | 6 | SSW | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.63 | 727.3 | 29.54 | 750.3 | 57.7 | 14.3 | 56 | E | 4.3 | 1.9 | ..... | ..... | 5 | W | ..... | 0.091 | 2.3 | ..... | Prof. P. F. Denza. |
| Genoa | 29.42 | 747.2 | 29.61 | 752.1 | 56.1 | 13.4 | 78 | SE | 6.3 | 2.8 | ..... | ..... | 2 | S | ..... | 0.488 | 12.4 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.65 | 702.2 | 29.56 | 750.7 | 54.3 | 12.4 | 45 | E | ..... | ..... | 2 | ..... | 5 | NW | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.55 | 750.5 | 29.60 | 751.7 | 63.0 | 17.2 | 47 | SW | 11.2 | 5.0 | ..... | ..... | 4 | SW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.37 | 745.9 | 29.62 | 752.4 | 57.9 | 14.4 | 58 | N | ..... | ..... | 2 | ..... | 9 | SSE | ..... | 0.433 | 11.0 | ..... | Cav. F. Meucci |
| Leghorn | 29.52 | 749.7 | 29.60 | 751.8 | 58.8 | 14.9 | 62 | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 29.51 | 749.5 | 29.69 | 754.0 | 57.0 | 13.9 | 83 | S | 13.0 | 5.8 | ..... | ..... | 10 | ..... | ..... | 0.012 | 0.3 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.52 | 749.9 | 29.78 | 756.3 | 63.9 | 17.7 | 43 | NW | 15.4 | 6.9 | ..... | ..... | 3 | W | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.91 | 734.4 | 29.80 | 756.8 | 57.0 | 13.9 | 77 | SW | 0 | 0 | ..... | ..... | 9 | ..... | ..... | 0.134 | 3.4 | ..... | Prof. D. Conti. |
| Cagliari | 29.42 | 747.3 | 29.61 | 752.2 | 65.5 | 18.6 | 55 | SW | ..... | ..... | 4 | ..... | 8 | W | ..... | 0.024 | 0.6 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.51 | 749.6 | 29.77 | 756.1 | 57.6 | 14.2 | 87 | SW | 16.1 | 7.2 | ..... | ..... | 6 | WSW | ..... | 0.004 | 0.1 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.77 | 756.2 | 29.84 | 758.0 | 67.1 | 19.5 | 50 | W | 9.8 | 4.4 | ..... | ..... | 3 | WSW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.21 | 741.9 | 29.76 | 756.0 | 53.2 | 11.8 | 94 | SSW | 1.3 | 0.6 | ..... | ..... | 10 | ..... | ..... | 0.264 | 6.7 | ..... | Prof. V. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.13 | 765.3 | 30.15 | 765.8 | 45.6 | 7.6 | 74 | N | 6.1 | 2.7 | ..... | ..... | 10s | ..... | ..... | 0.040 | 1.02 | Cloudy | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 30.01 | 762.2 | 30.22 | 767.6 | 46.2 | 7.9 | 73 | NW | 1.6 | 0.7 | ..... | ..... | 0 | ..... | ..... | 0.150 | 3.81 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.81 | 757.2 | 29.88 | 758.9 | 46.5 | 8.1 | 96 | N | 3.3 | 1.5 | ..... | ..... | 10n | ..... | ..... | 0.053 | 1.35 | Light rain | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.06 | 636.5 | 30.16 | 766.0 | 50.0 | 10.0 | 42 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Fine | Prof. L. Perez. |
| Leon | 24.43 | 620.6 | 30.17 | 766.5 | 62.1 | 16.7 | 66 | SW | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.13 | 587.4 | 30.14 | 765.6 | 54.0 | 12.2 | 70 | NW | 2.0 | 0.9 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fine | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 59.5 | 15.3 | 49 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. V. de Leon, M. E. |
| Tlacotalpam | 29.90 | 759.5 | 29.91 | 759.8 | 74.1 | 23.4 | 77 | NW | ..... | ..... | 2 | 1 | 1 | NE | N | 0 | 0 | Light fog | M. M. Chàzaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.45 | 595.5 | 30.21 | 767.3 | 49.6 | 9.8 | 49 | NE | 0.4 | 0.2 | ..... | 0 | 1 | ..... | W | 1.09 | 27.7 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. |
| Colima | 28.31 | 719.8 | 29.98 | 761.5 | 75.7 | 24.3 | 42 | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guer |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.75 | 755.7 | 29.75 | 755.7 | 45.5 | 7.5 | ..... | NE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.476 | 12.1 | ..... | |
| Groningen | 29.82 | 757.4 | 29.87 | 758.8 | 37.8 | 3.2 | ..... | NE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.236 | 6.0 | ..... | |
| Helder | 29.84 | 757.8 | 29.84 | 757.8 | 38.1 | 3.4 | ..... | NE | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.063 | 1.6 | ..... | |
| Hellevoetsluis | 29.74 | 755.3 | 29.74 | 755.3 | 40.6 | 4.8 | 90 | ENE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.75 | 755.6 | 29.80 | 756.8 | 39.7 | 4.3 | 83 | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.016 | 0.4 | Dull | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.10 | 764.5 | 30.15 | 765.9 | 40.3 | 4.6 | 74 | S | 9.8 | 4.4 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 30.34 | 770.6 | 30.38 | 771.6 | 35.6 | 2.0 | 64 | NE | 18 | 8 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 30.00 | 762.1 | 30.15 | 765.9 | 30.6 | — 0.8 | 42 | NE | 16 | 7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.38 | 771.7 | 30.43 | 772.8 | 28.4 | — 2.0 | 80 | SW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.09 | 764.3 | 30.24 | 769.2 | 59.7 | 15.4 | 75 | E | 2.5 | 1.1 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.73 | 729.8 | 29.77 | 756.1 | 67.0 | 13.9 | 76 | WSW | 4.9 | 2.2 | ..... | ..... | 9 | NW | ..... | 0.114 | 2.9 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.06 | 763.5 | 30.15 | 765.7 | 65.8 | 18.8 | 58 | S | 4.9 | 2.2 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.46 | 748.3 | 29.82 | 757.4 | 56.3 | 13.5 | 64 | N | 34.9 | 15.6 | ..... | ..... | 4 | ..... | ..... | 0.350 | 8.9 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.23 | 767.9 | 30.30 | 769.7 | 65.1 | 18.4 | 53 | WNW | 2.5 | 1.1 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa. Com'd.t. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande,Com'd't. |
| Duque da Terceira, Santiago, Cape Verd I. | ..... | ..... | 30.04 | 763.0 | 71.6 | 22 | ..... | NE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 5 | ..... | D. clouds | C.C.da Fonseca Ferreira,Comd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, St. Thomas, Gulf of Guinea | ..... | ..... | 29.87 | 758.8 | 83.8 | 28 8 | ..... | S | ..... | ..... | 2 | ..... | 5 | ..... | SE | 1 | SE | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria,Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto Regina, Rio Grande, Senegambia | ..... | ..... | 29.92 | 760.0 | 85.3 | 29.6 | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | A. Ferreira, 2d Lt. |
| Sá da Bandeira. Ambrizette, S. 7° 13′, E. 12°52′ | ..... | ..... | 29.78 | 756.4 | 85.6 | 29.8 | ..... | SSW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 3 | SW | Blue sky | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 30.17 | 766.2 | 69.8 | 21.0 | ..... | N | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 3 | N | Blue sky | J. M. T. Guimaraes, Com'd't |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeirá gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.20 | 741.8 | 29.63 | 752.7 | 40.3 | 4.6 | 62 | NE | 13 | 6 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.25 | 743.0 | 29.68 | 753.8 | 41.2 | 5.1 | 64 | ENE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds | Astronomical Obs. |
| Dorpat | 29.58 | 751.4 | 29.83 | 757.7 | 37.2 | 2.9 | 79 | N | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.85 | 758.2 | 29.87 | 758.6 | 32.9 | 0.5 | 83 | NNE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 28.69 | 728.6 | 29.32 | 744.6 | 46.2 | 7.9 | 98 | E | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light rain | Physical Cabinet. |
| Nikolaiev | 29.29 | 744.0 | 29.36 | 745.8 | 53.8 | 12.1 | 75 | S | 45 | 20 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.63 | 752.7 | 29.65 | 753.2 | 52.2 | 11.2 | 94 | S | 4 | 2 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.19 | 741.5 | 29.75 | 755.6 | 39.4 | 4.1 | 69 | S | 4 | 2 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.40 | 746.7 | 29.60 | 751.8 | 69.1 | 20.6 | 37 | SSE | 31 | 14 | ..... | ..... | 6 | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 30.00 | 762.0 | 30.02 | 762.5 | 23.5 | — 4.7 | 62 | NNE | 4 | 2 | ..... | ..... | 2cs | ..... | ..... | ..... | ..... | ..... | Capt. Sselwerstow. |
| Tiflis | 28.50 | 723.5 | 29.89 | 759.1 | 64.9 | 18.3 | 36 | Calm | 0 | 0 | ..... | ..... | 5k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.01 | 762.2 | 29.93 | 760.1 | 63.5 | 17.5 | 41 | ESE | 4 | 2 | ..... | ..... | 6s;ck | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.45 | 748.0 | 29.93 | 760.3 | 44.1 | 6.7 | 70 | S | 2 | 1 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Light clouds | Cand. Fatjanow. |
| Kasan | 29.56 | 750.7 | 29.83 | 757.7 | 38.3 | 3.5 | 80 | SSW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 28.94 | 735.0 | 29.91 | 759.7 | 43.9 | 6.6 | 73 | SW | 9 | 4 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.51 | 749.5 | 29.75 | 755.2 | 74.7 | 23.7 | 37 | SSW | 16 | 7 | ..... | ..... | 6cs | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.28 | 718.3 | 29.78 | 756.3 | 76.3 | 24.6 | 32 | N | 13 | 6 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Light clouds | Teich, A. M. |
| Barnaul | 29.67 | 753.7 | 30.19 | 766.8 | 41.4 | 5.2 | 60 | W | 0 | 0 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeniseisk | 29.69 | 754.1 | 29.99 | 761.8 | 30.4 | — 0.9 | 93 | SW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking, (China) | 30.18 | 766.6 | 30.32 | 770.2 | 42.6 | 5.9 | 60 | NE | 4 | 2 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 30.06 | 763.4 | 30.15 | 765.9 | 21.0 | — 6.1 | 69 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.41 | 747.0 | 29.52 | 749.7 | 57.4 | 14.1 | 63 | SE | 3.2 | 1.44 | ..... | ..... | 6 | ..... | ..... | 0.285 | 7.25 | Raining | Antonio Rave, Directon. |
| Bilbao, Met. Obs'y | 29.72 | 754 8 | 29.78 | 756.3 | 50.5 | 10.3 | 88 | S | 2.2 | 0.98 | ..... | 1 | 7 | N | ..... | 0.346 | 8.8 | Rain & hail | Prof. Manuel deNavera |
| Burgos, Met. Obs'y | 26.74 | 679.2 | ..... | ..... | 42.8 | 6.0 | 85 | N | 9.9 | 4.44 | ..... | 1 | 6 | SE | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Osservatory | 27.43 | 696.6 | ..... | ..... | 52.7 | 11.5 | 75 | SW | 9.3 | 4.17 | ..... | 1 | 9 | ..... | ..... | 0.028 | 0.7 | Covered | The Staff. |
| Murcia, Met. Obs'y | 29.48 | 748.9 | 29.63 | 752.7 | 71.4 | 21.9 | 40 | NNW | 2.8 | 1.25 | ..... | 2 | 4 | ESE | ..... | 0.025 | 0.63 | Misty | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 26.89 | 733.7 | 29.78 | 756.5 | 51.8 | 11.0 | 68 | N | 8.1 | 3.6 | ..... | ..... | 9 | ..... | ..... | 0.232 | 5.9 | Rainy | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.94 | 760.6 | 30.01 | 762.2 | 73.8 | 23.2 | 80 | SE | 11.9 | 5.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.86 | 758.5 | 29.92 | 759.8 | 83.9 | 28.9 | 60 | ESE | 6.0 | 2.7 | ..... | 1c | 0 | E | ..... | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.73 | 755.2 | 29.83 | 757.7 | 60.3 | 15.7 | 79 | WSW | 19.2 | 8.6 | ..... | 0 | 9 | ..... | W | 0.083 | 2.1 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W I | 29.90 | 759.5 | 29.99 | 761.8 | 78.1 | 25.6 | 87 | SE | 0 | 0 | ..... | 3c | 6kn | SE | SE | 0.246 | 6.25 | Cloudy | Leonardo de Tejeda, Ch'f Eng'r. |

Note.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

**Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.**

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.28 | 769.2 | 30.32 | 770.2 | 29.8 | — 1.2 | ..... | NE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.22 | 767.6 | 30.27 | 768.9 | 25.9 | — 3.4 | 65 | NE | ..... | ..... | 7 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.11 | 764.9 | 30.17 | 766.2 | 26.6 | — 3.0 | 70 | NNE | ..... | ..... | 6 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.78 | 756.5 | 29.96 | 761.0 | 25.2 | — 3.8 | 60 | N | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.82 | 757.4 | 29.88 | 758.9 | 27.7 | — 2.4 | 79 | NE | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.024 | 0.6 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.91 | 759.6 | 29.98 | 761.5 | 28.0 | — 5.6 | 97 | N | 14.3 | 6.4 | ..... | 9 | ..... | ..... | N | 0.127 | 3.23 | Snowing | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

**Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.**

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.17 | 715.4 | 29.60 | 751.7 | 52.7 | 11.5 | 55 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear. | The Observatory. |
| Zurich | 27.98 | 710.6 | 29.61 | 752.1 | 55.4 | 13.0 | 62 | E | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | Cloudy | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —8.8 mm.; Thermometer, +0.3 Cent.; Relative Humidity, —3 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

**Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.**

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.67 | 753.7 | 66.2 | 19.0 | 52 | SW | 12 | 5.5 | ..... | 4 | ..... | SW | | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.32 | 770.0 | 78.8 | 26.0 | ..... | NW | ..... | ..... | 2 | 0 | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.85 | 758.2 | 62.2 | 16.8 | ..... | SW | ..... | ..... | 3 | 2 | ..... | ..... | ..... | 0.47 | 12. | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.79 | 756.7 | 29.90 | 759.5 | 72.0 | 22.2 | 56 | NE | ..... | ..... | 1 | 0 | ..... | ..... | ..... | 0 | 0 | Blue sky | Prof. C.V. A.Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

**Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.**

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.79 | 756.7 | 29.86 | 758.4 | 28.4 | — 2.0 | 76 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Hon. J. Ferguson. |
| Brockville, Ontario | 29.59 | 751.6 | 29.91 | 759.7 | 31 | — 0.6 | ..... | NE | 13 | 5.8 | ..... | ..... | 8s | ..... | NE | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 29.80 | 756.9 | 29.87 | 758.7 | 28 | — 2.2 | 82 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 29.80 | 756.9 | 29.84 | 757.9 | 28 | — 2.2 | 62 | W | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0.040 | 1.02 | Clear | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.71 | 754.6 | 29.92 | 760.0 | 29.0 | — 1.7 | 56 | E | ..... | ..... | 4 | ..... | 9s | ..... | ..... | 0 | 0 | Cloudy | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | 29.89 | 759.2 | 29.94 | 760.5 | 36.1 | 2.3 | 100 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | W. H. Bevis. |
| *Father Point, Quebec | 29.95 | 760.7 | 29.97 | 761.2 | 18 | — 7.8 | 79 | N | 12 | 5.4 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Clear | J. McWilliams |
| Fredericton, N. B | 29.89 | 759.2 | 29.96 | 761.0 | 27.0 | — 2.8 | 51 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.65 | 737.9 | 29.88 | 758.9 | 40 | — 4.4 | 82 | SE | 7 | 3.1 | ..... | 5k | 5ks | S | S | 0 | 0 | Fair | James Stewart. |
| Granton, Ontario | 28.43 | 722.1 | 29.64 | 760.3 | 38 | — 3.3 | ..... | E | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0.15 | 3.8 | Raining | James Grant. |
| *Halifax, N. S | 29.72 | 754.9 | 29.86 | 758.4 | 35 | 1.7 | 68 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | F. Allison, M. A. |
| Hamilton, Ontario | 29.34 | 745.2 | 29.72 | 754.9 | 35.7 | 2.1 | 90 | NE | ..... | ..... | 2 | 10cs | 0 | NE | ..... | 0.25 | 6.3 | Raining | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.48 | 748.8 | 29.83 | 757.7 | 34 | 1.1 | 63 | N | 10 | 4.5 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.76 | 755.9 | 29.80 | 756.9 | 28.6 | — 1.9 | 98 | W | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | C. H. Rigby. |
| Moose Factory, Ontario | 30.27 | 768.8 | 30.30 | 769.6 | 10.5 | —11.9 | 77 | NE | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. R. Nason. |
| *Montreal, Quebec | 29.80 | 756.9 | 30.01 | 762.2 | 27 | — 2.8 | 76 | NE | 10 | 4.5 | ..... | 8c | 2s | NW | ..... | 0 | 0 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.06 | 738.1 | 29.77 | 756.1 | 36 | 2.2 | 46 | NE | 18 | 8.0 | ..... | ..... | 10n | ..... | NE | 0 | 0 | Cloudy | Rev. R. Mosley. |
| Peterboro, Ontario | 29.03 | 737.3 | 29.80 | 756.9 | 34.7 | 1.5 | 88 | NE | ..... | ..... | 3 | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 28.88 | 733.5 | 29.67 | 751.1 | 44 | 6.7 | 100 | E | 15 | 6.7 | ..... | ..... | 10n | ..... | E | 0.09 | 2.3 | Light rain | H. Morgan. |
| Port Hastings, N. S | 29.76 | 755.9 | 29.81 | 757.2 | 30.5 | — 0.8 | ..... | NW | 4 | 1.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 28.89 | 733.8 | 29.03 | 750.0 | 46 | 7.8 | 88 | E | 20 | 8.9 | ..... | ..... | 10n | ..... | E | 0.38 | 9.7 | Heavy rain | M. Payne. |
| *Quebec, Quebec | 29.69 | 754.1 | 30.03 | 762.8 | 21 | — 6.1 | 57 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.48 | 748.8 | 29.96 | 761.0 | 31 | — 0.6 | 74 | NE | 8 | 3.6 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.91 | 759.7 | 29.96 | 761.0 | 29 | — 1.7 | 60 | NW | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| St. John, N. B | 29.76 | 755.9 | 29.94 | 760.5 | 29 | — 1.7 | 77 | NW | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. Murdock, C. E. |
| *Saugeen, Ontario | 28.90 | 734.0 | 29.62 | 752.3 | 37 | 2.8 | 90 | NE | 26 | 11.6 | ..... | ..... | 10ks | ..... | ..... | 0.11 | 2.8 | Heavy rain | K. Stewart. |
| Stayner, Ontario | 28.89 | 733.8 | 29.69 | 754.1 | 33 | 0.6 | 90 | SE | 9 | 4.0 | ..... | ..... | 10n | ..... | SE | Inap. | Inap | Sleeting | R. J. Cole. |
| Stratford, Ontario | 28.26 | 717.8 | 29.55 | 750.6 | 35.2 | 1.8 | 88 | SE | 14.5 | 6.5 | ..... | ..... | 10n | ..... | ..... | 0.28 | 7.1 | Raining | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.78 | 756.1 | 29.77 | 756.1 | 29 | — 1.7 | 65 | NW | 16 | 7.2 | ..... | ..... | 10ks | ..... | NW | 0.02 | 0.5 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.33 | 745.0 | 29.72 | 754.9 | 36 | 2.2 | 74 | NE | 20 | 8.9 | ..... | ..... | 10n | ..... | Calm | 0.130 | 3.30 | Light rain | Magnetic Observatory. |
| Windsor, N. S | 29.78 | 756.4 | 29.88 | 758.9 | 31.0 | — 0.6 | 100 | NW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 32.0 | 0.0 | 90 | SW | ..... | ..... | ..... | 10k | 10s | ..... | ..... | 0.06 | 1.5 | Cloudy | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Cloud. Amount. Up'er 0—10. | Cloud. Amount. Low'r 0—10. | Cloud. Direction. Upper. From— | Cloud. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.64 | 752.8 | 29.88 | 758.9 | 38 | 3.3 | 54 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Alpena, Michigan | 28.98 | 736.1 | 29.63 | 752.6 | 35 | 1.7 | 61 | E | 34 | 15.2 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Atlanta, Georgia | 28.58 | 725.9 | 29.68 | 753.9 | 60 | 15.6 | 94 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0.18 | 4.6 | Cloudy | |
| Atlantic City, New Jersey | 29.82 | 757.4 | 29.84 | 757.9 | 46 | 7.8 | 92 | SW | 12 | 5.4 | ..... | 0 | 8s | ..... | SW | 0 | 0 | Cloudy | |
| Augusta, Georgia | 29.65 | 753.1 | 29.82 | 757.4 | 65 | 18.3 | 78 | S | 7 | 3.1 | ..... | 2ck | 5ks | S | S | 0 | 0 | Fair | |
| Baltimore, Maryland | 29.70 | 754.4 | 29.75 | 755.6 | 53 | 11.7 | 67 | SE | 3 | 1.3 | ..... | 2k | 8s | SW | Calm | 0 | 0 | Cloudy | |
| Barnegat, New Jersey | 29.80 | 756.9 | 29.82 | 757.4 | 44 | 6.7 | 92 | S | 10 | 4.5 | ..... | 10cs | 0 | S | ..... | 0 | 0 | Cloudy | |
| Bismarck, Dakota | 28.08 | 713.2 | 29.94 | 760.5 | 38 | 3.3 | 90 | N | 16 | 7.2 | ..... | ..... | 10c | ..... | N | 0.58 | 14.7 | Cloudy | |
| Boerne, Texas | 28 60 | 726.4 | 29.95 | 760.7 | 43 | 6.1 | 43 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boise City, Idaho | 27.05 | 687.1 | 30.01 | 762.2 | 50 | 10.0 | 65 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boston, Massachusetts | 29.82 | 757.4 | 29.98 | 761.5 | 36 | 2.2 | 61 | E | 16 | 7.2 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Brackettville, Texas | 28.93 | 734.8 | 29.98 | 761.5 | 49 | 9.4 | 57 | Calm | 0 | 0 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Breckenridge, Minnesota | 28.72 | 729.5 | 29.72 | 754.9 | 42 | 5.6 | 91 | N | 12 | 5.4 | ..... | ..... | 10ks | ..... | N | 0.23 | 5.8 | Cloudy | |
| Brownsville, Texas | 29.94 | 760.5 | 29.98 | 761.5 | 66 | 18.9 | 95 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 28.92 | 734.6 | 29.62 | 752.3 | 42 | 5.6 | 87 | NE | 15 | 6.7 | ..... | ..... | 10n | ..... | S | 0.10 | 2.5 | Light rain | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 48 | 8.9 | 33 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.66 | 753.4 | 29.96 | 761.0 | 32.5 | 0.3 | 65 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.24 | 742.7 | 29.62 | 752.3 | 53 | 11.7 | 61 | SW | 15 | 6.7 | ..... | 0 | 8s | ..... | SW | 0.94 | 23.9 | Fair | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.24 | 641.1 | 30.04 | 763.0 | 46 | 7.8 | 19 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 42 | 5.6 | 34 | SW | ..... | ..... | 2 | 8c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Campo, California | 27.41 | 696.2 | 29.98 | 761.5 | 29 | — 1.7 | 78 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 29.98 | 761.5 | 29.99 | 761.7 | 62 | 16.7 | 83 | S | 17 | 7.6 | ..... | 1cs | 1s | NW | S | 0 | 0 | Clear | |
| Cape Henry, Virginia | 29.83 | 757.7 | 29.84 | 757.9 | 58 | 14.4 | 82 | S | 18 | 8.0 | ..... | ..... | 10n | ..... | S | Inap. | Inap. | Light rain | |
| Cape Lookout, N. Carolina | 29.94 | 760.5 | 29.96 | 761.0 | 60 | 15.6 | 88 | SW | 22 | 9.8 | ..... | 10ck | Haze | W | SW | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 29.77 | 756.1 | 29.80 | 756.9 | 49 | 9.4 | 85 | S | 21 | 9.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Castroville, Texas | 29.28 | 743.7 | 29.99 | 761 7 | 56 | 13.3 | 81 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 29.84 | 757.9 | 29.89 | 759.2 | 66 | 18.9 | 89 | SW | 15 | 6.7 | ..... | 0 | 7s | ..... | SW | 0.02 | 0.5 | Fair | |
| Cheyenne, Wyoming | 24.10 | 612.1 | 30.04 | 763.0 | 31 | — 0.6 | 69 | NW | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 28.59 | 726.2 | 29.24 | 742.7 | 49 | 9.4 | 78 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | SW | 1.45 | 36.8 | Cloudy | |
| Cincinnati, Ohio | 28.87 | 733.3 | 29.49 | 749.0 | 57 | 13.9 | 75 | SW | 6 | 2.7 | ..... | ..... | 9ks | ..... | SW | 0.10 | 2.5 | Threatening | |
| Cleveland, Ohio | 28.75 | 730.2 | 29.44 | 747.8 | 56 | 13.3 | 87 | SE | 13 | 5.8 | ..... | ..... | 10ks | ..... | SW | 0.20 | 5.1 | Cloudy | |
| Coleman City, Texas | 28.29 | 718.6 | 29.99 | 761.7 | 45 | 7.2 | 61 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Columbus, Ohio | 28.63 | 727.2 | 29.42 | 747.2 | 57 | 13.9 | 69 | S | 12 | 5.4 | ..... | ..... | 10ks | ..... | SW | 0.02 | 0.5 | Cloudy | |
| Concho, Texas | 28.18 | 715.8 | 29.90 | 759.4 | 45 | 7.2 | 68 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.57 | 751.1 | 30.05 | 763.3 | 48 | 8.9 | 63 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 28.69 | 728.7 | 29.30 | 744.2 | 45 | 7.2 | 84 | W | 12 | 5.4 | ..... | ..... | 10s | ..... | SW | 0.26 | 6.6 | Cloudy | |
| Deadwood, Dakota | 25.41 | 645.4 | ..... | ..... | 31 | — 0.6 | 79 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear | |
| Decatur, Texas | 28 90 | 734.0 | 30.06 | 763.5 | 60 | 15.6 | 65 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.19 | 741.4 | 29.99 | 761.7 | 52 | 11.1 | 35 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.86 | 631.4 | 30.08 | 764.0 | 32 | 0.0 | 40 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Des Moines, Iowa | 28.57 | 725.7 | 29.42 | 747.2 | 46 | 7.8 | 92 | NW | 10 | 4.5 | ..... | ..... | 10s | ..... | NW | 0.02 | 0.5 | Cloudy | |
| Detroit, Michigan | 28.76 | 730.5 | 29.40 | 746.7 | 46 | 7.8 | 92 | E | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.56 | 14.2 | Light rain | |
| Dodge City, Kansas | 27.41 | 696.2 | 29.78 | 755.1 | 41 | 5.0 | 41 | NW | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 28.63 | 727.2 | 29.31 | 744.5 | 45 | 7.2 | 92 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | N | 1.62 | 41.1 | Light rain | |
| Duluth, Minnesota | 29.09 | 738.9 | 29.77 | 756.1 | 38 | 3.3 | 72 | NE | 30 | 13.4 | ..... | ..... | 10s | ..... | NE | 0.15 | 3.8 | Cloudy | |
| Eagle Pass, Texas | 29.30 | 744.2 | 30.05 | 763.3 | 53 | 11.7 | 48 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.90 | 759.4 | 29.97 | 761.2 | 30 | — 1.1 | 47 | NW | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 62 | 16.7 | 79 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| El Paso, Texas | 26.31 | 668.3 | ..... | ..... | 40 | 4.4 | 18 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 28.83 | 732.3 | 29.53 | 750.0 | 49 | 9.4 | 85 | S | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | 0.22 | 5.6 | Light rain | |
| Escanaba, Michigan | 28.97 | 735.8 | 29.61 | 752.1 | 40 | 4.4 | 39 | E | 37 | 16.5 | ..... | ..... | 10s | ..... | E | Inap. | Inap. | Cloudy | |
| Florence, Arizona | 28.46 | 722.9 | 30.06 | 763.5 | 50 | 10.0 | 20 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 28.05 | 712.5 | ..... | ..... | 28 | — 2.2 | 100 | SW | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0.05 | 1.3 | Foggy | |
| Fort Craig, New Mexico | 25.54 | 648.7 | 29.61 | 752.1 | 37 | 2.8 | 52 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.30 | 642.6 | 30.26 | 768.6 | 40 | 4.4 | 18 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.29 | 744.0 | 29.82 | 757.4 | 53 | 11.7 | 31 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.84 | 732.5 | 30.16 | 766.1 | 41 | 5.0 | 57 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.50 | 698.5 | ..... | ..... | 28 | — 2.2 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort McKavett, Texas | 27.80 | 706.1 | 29.76 | 755.9 | 45 | 7.2 | 53 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.09 | 738.9 | 29.13 | 739.9 | 17 | — 8.3 | 100 | NE | 3 | 1.3 | ..... | ..... | 10ks | ..... | NL | 0.04 | 1.0 | Cloudy | |
| Fort Sill, Indian Territory | 28.80 | 731.5 | 29.92 | 760.0 | 48 | 8.9 | 36 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Stevenson, Dakota | 28.11 | 714.0 | ..... | ..... | 36 | 2.2 | 89 | NW | 14 | 6.3 | ..... | ..... | 8s | ..... | NW | 0.47 | 11.9 | Cloudy | |
| Fredericksburg, Texas | 28.33 | 719.6 | 29.86 | 758.4 | 70 | 21.1 | 32 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 29.96 | 761.0 | 30.01 | 762.2 | 68 | 20.0 | 38 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Graham, Texas | 29.09 | 736.6 | 30.09 | 764.3 | 40 | 4.4 | 65 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 28.68 | 728.5 | 29.30 | 744.2 | 48 | 8.9 | 85 | SW | 25 | 11.2 | ..... | ..... | 10s | ..... | Calm | 1.24 | 31.5 | Cloudy | |
| Indianapolis, Indiana | 28.68 | 728.5 | 29.43 | 747.5 | 51 | 10.6 | 65 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0.35 | 8.9 | Cloudy | |
| Indianola, Texas | 30.00 | 762.0 | 30.03 | 762.8 | 71 | 21.7 | 45 | E | 22 | 9.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.95 | 735.3 | 30.08 | 764.0 | 55 | 12.8 | 39 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.94 | 760.5 | 29.96 | 761.0 | 68 | 20.0 | 84 | SE | 10 | 4.5 | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 28.74 | 730.0 | 29.33 | 745.0 | 45 | 7.2 | 88 | W | 12 | 5.4 | ..... | ..... | 9s | ..... | W | 0.11 | 2.8 | Cloudy | |
| Key West, Florida | 29.98 | 761.5 | 30.02 | 762.5 | 76 | 24.4 | 82 | SE | 6 | 2.7 | ..... | 5k | 0 | SE | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 29.87 | 758.7 | 29.89 | 759.2 | 59 | 15.0 | 88 | SW | 19 | 8.5 | ..... | 5c | Haze | W | Calm | 0 | 0 | Fair | |
| Knoxville, Tennessee | 28.67 | 728.2 | 29.64 | 752.8 | 58 | 14.4 | 88 | W | 13 | 5.8 | ..... | ..... | 10ks | ..... | W | 1.05 | 26.7 | Cloudy | |
| La Crosse, Wisconsin | 28.66 | 728.0 | 29.37 | 746.0 | 45 | 7.2 | 92 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | N | 0.12 | 3.0 | Light rain | |
| La Mesilla, New Mexico | 26.17 | 664.7 | 30.32 | 770.1 | 36 | 2.2 | 45 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.64 | 752.8 | 29.98 | 761.5 | 63 | 17.2 | 42 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.74 | 730.0 | 29.57 | 751.1 | 43 | 6.1 | 83 | NW | 20 | 8.9 | ..... | ..... | 10s | ..... | NW | 0.02 | 0.5 | Threatening | |
| Los Angeles, California | 29.65 | 753.1 | 30.00 | 762.0 | 45.2 | 7.3 | 72 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.00 | 736.6 | 29.53 | 750.0 | 56 | 13.3 | 69 | SW | 8 | 3.6 | ..... | 2cs | 0 | Calm | ..... | 0.58 | 14.7 | Clear | |
| Lynchburg, Virginia | 29.05 | 737.9 | 29.71 | 754.6 | 57 | 13.9 | 75 | S | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | Light rain | |
| Madison, Wisconsin | 28.22 | 716.8 | 29.17 | 740.9 | 41 | 5.0 | 91 | N | 28 | 12.5 | ..... | ..... | 10n | ..... | N | 2.47 | 62.7 | Light rain | |
| Marquette, Michigan | 29.02 | 737.1 | 29.73 | 755.1 | 36 | 2.2 | 80 | SE | 8 | 3.6 | ..... | 5c | 5s | SE | Calm | 0 | 0 | Cloudy | |
| Mason, Texas | 28.44 | 722.4 | 30.24 | 768 1 | 44 | 6.7 | 84 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.44 | 747.8 | 29.76 | 755.9 | 57 | 13.9 | 57 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.56 | 14.2 | Clear | |
| Milwaukee, Wisconsin | 28.36 | 720 3 | 29.05 | 737.9 | 45 | 7.2 | 92 | SW | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 1.54 | 39.1 | Light rain | |
| Mobile, Alabama | 29.83 | 757.7 | 29.87 | 758.7 | 68 | 20.0 | 90 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.74 | 19.1 | Clear | |
| Montgomery, Alabama | 29.60 | 751.8 | 29.82 | 757.4 | 65 | 18.3 | 73 | W | 4 | 1.8 | ..... | 2k | 5ks | W | W | 0.01 | 0 3 | Fair | |
| Morgantown, West Virginia | 28.48 | 723.4 | 29.48 | 748.8 | 61 | 16.1 | 55 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Mt. Washington, N. H. | 23.52 | 597.4 | 29.88 | 758.9 | 11 | —11.7 | 79 | W | 40 | 17.9 | ..... | 8c | 2s | W | W | 0 | 0 | Cloudy | |
| Nashville, Tennessee | 29.14 | 740.1 | 29.66 | 753.4 | 59 | 15.0 | 70 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 1.40 | 35.6 | Clear | |
| New Haven, Connecticut | 29.76 | 755.9 | 29.88 | 758.9 | 47 | 8.3 | 53 | E | 8 | 3.6 | ..... | 5cs | 5s | Calm | Calm | 0 | 0 | Cloudy | |
| New London, Connecticut | 29.87 | 758.7 | 29.92 | 760.0 | 44 | 6.7 | 60 | NE | 12 | 5.4 | ..... | 10cs | Haze | W | Calm | 0 | 0 | Cloudy | |
| New Orleans, Louisiana | 29.85 | 758.2 | 29.91 | 759.7 | 69 | 20.6 | 85 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Newport, Rhode Island | 29.89 | 759.2 | 29.94 | 760.5 | 43 | 6.1 | 51 | NE | 13 | 5.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| New York, New York | 29.67 | 753.6 | 29.85 | 758.2 | 48 | 8.9 | 77 | NE | 12 | 5.4 | ..... | 2cs | Fgsmk | Calm | ..... | 0 | 0 | Foggy | |
| Norfolk, Virginia | 29.79 | 756.7 | 29.85 | 758.2 | 56 | 13.3 | 87 | S | 9 | 4.0 | ..... | ..... | 10n | ..... | W | 0.03 | 0.8 | Light rain | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.04 | 686.8 | 29.65 | 753.1 | 36 | 2.2 | 45 | NW | 22 | 9.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.95 | 760.7 | 29.99 | 761.7 | 37.2 | 2.9 | 90 | S | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0.25 | 6.3 | Cloudy | |
| Omaha, Nebraska | 28.44 | 722.4 | 29.52 | 749.8 | 43 | 6.1 | 83 | NW | 21 | 9.4 | ..... | ..... | 10s | ..... | NW | 0.10 | 2.5 | Cloudy | |
| Oswego, New York | 29.44 | 747.8 | 29.77 | 756.1 | 40 | 4.4 | 73 | NE | 2 | 0.9 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Light rain | |
| Pembina, Dakota | 29.00 | 736.6 | 29.84 | 757.9 | 38 | 3.3 | 91 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Philadelphia, Pa | 29.73 | 755.1 | 29.78 | 756.4 | 51 | 10.6 | 65 | S | 10 | 4.5 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.82 | 732.0 | 30.64 | 778.2 | 53 | 11.7 | 48 | SE | 1 | 0.4 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.74 | 450.6 | 29.95 | 760.7 | 12 | —11.1 | 23 | NE | 30 | 13.4 | ..... | 1c | 0 | Calm | ..... | 0.03 | 0.8 | Clear | |
| Pioche, Nevada | 24.02 | 610.1 | 29.79 | 756.7 | 41 | 5.0 | 25 | S | 6 | 2.7 | ..... | 0 | 8s | ..... | S | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 28.72 | 729.5 | 29.49 | 749.0 | 59 | 15.0 | 82 | S | 7 | 3.1 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Port Huron, Michigan | 28.78 | 731.0 | 29.42 | 747.2 | 45 | 7.2 | 100 | SE | 10 | 4.5 | ..... | ..... | 10n | ..... | SE | 0.52 | 13.2 | Heavy rain | |
| Portland, Maine | 29.96 | 761.0 | 30.01 | 762.2 | 38 | 3.3 | 54 | E | 8 | 3.6 | ..... | 5k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Portland, Oregon | 29.94 | 760.5 | 30.04 | 763.0 | 42.0 | 5.6 | 87 | SE | 2 | 0.9 | ..... | ..... | 10s | ..... | ..... | 0 29 | 7.4 | Cloudy | |
| Prescott, Arizona | 24.75 | 628.6 | 30.11 | 764.8 | 31 | — 0.6 | 38 | NW | 2 | 0.9 | ..... | 10c | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Pilot Point, Texas | 29.05 | 737.9 | 29.86 | 758.4 | 61 | 16.1 | 94 | SE | 1 | 0.4 | ..... | 5k | 5s | S | SE | 0 | 0 | Cloudy | |
| Punta Rassa, Florida | 30.00 | 762.0 | 30.02 | 762.5 | 71 | 21.7 | 80 | SE | 8 | 3.6 | ..... | 5cs;k | 0 | W;SE | ..... | 0 | 0 | Fair | |
| Red Bluff, California | 29.63 | 752.6 | 29.99 | 761.7 | 52 | 11.1 | 66 | S | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light rain | |
| Rio Grande City, Texas | 29.83 | 757.7 | 30.05 | 763.3 | 58 | 14.4 | 76 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rochester, New York | 29.09 | 738.9 | 29.71 | 754.6 | 37 | 2.8 | 81 | E | 10 | 4.5 | ..... | ..... | 10s | ..... | E | 0.06 | 1.5 | Cloudy | |
| Roseburg, Oregon | 29.37 | 746.0 | 29.95 | 760.7 | 42.0 | 5.6 | 96 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.70 | 17.8 | Light rain | |
| Sacramento, California | 29.96 | 761.0 | 30.04 | 763.0 | 52 | 11.1 | 79 | S | 6 | 2.7 | ..... | 1cs | 8ks | S | SW | 0 | 0 | Cloudy | |
| St. Louis, Missouri | 28.93 | 734.8 | 29.49 | 749.0 | 48 | 8.9 | 63 | SW | 15 | 6.7 | ..... | ..... | 10s | ..... | W | 0.31 | 7.9 | Cloudy | |
| St. Marks, Florida | 29.88 | 758.9 | 29.89 | 759.2 | 67 | 19.4 | 95 | S | 17 | 7.6 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| St. Paul, Minnesota | 28.68 | 728.5 | 29.48 | 748.8 | 47 | 8.3 | 70 | N | 16 | 7.2 | ..... | ..... | 10s | ..... | E | 0.21 | 5.3 | Cloudy | |
| Salt Lake City, Utah | 25.64 | 651.2 | 29.97 | 761.2 | 38 | 3.3 | 54 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| San Antonio, Texas | 29.37 | 746.0 | 29.96 | 761.0 | 58 | 14.4 | 42 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.95 | 760.7 | 30.01 | 762.2 | 50 | 10.0 | 93 | NE | 4 | 1.8 | ..... | 2ck | 0 | E | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 28.78 | 731.0 | 29.42 | 747.2 | 56 | 13.3 | 81 | SW | 10 | 4.5 | ..... | 5k | 5s | SW | SW | 0.23 | 5.8 | Cloudy | |
| Sandy Hook, New Jersey | 29.81 | 757.2 | 29.84 | 757.9 | 43 | 6.1 | 75 | SE | 12 | 5.4 | ..... | 10ck | Haze | NW | Calm | 0 | 0 | Cloudy | |
| San Francisco, California | 30.00 | 762.0 | 30.06 | 763.5 | 52.8 | 11.6 | 79 | SW | 1 | 0.4 | ..... | 5c | Fog | Calm | Calm | 0 | 0 | Fair | |
| Santa Fé, New Mexico | 23.34 | 592.8 | 29.88 | 758.9 | 30 | — 1.1 | 26 | N | 4 | 1.8 | ..... | 1c | 0 | SW | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.79 | 756.7 | 29.88 | 758.9 | 69 | 20.6 | 80 | S | 19 | 8.5 | ..... | 8k | Haze | S | Calm | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.72 | 754.9 | 29.94 | 760.5 | 58 | 14.4 | 53 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Silver City, New Mexico | 24.36 | 618.7 | 30.71 | 780.0 | 35 | 1.7 | 35 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 29.91 | 759.7 | 29.94 | 760.5 | 62 | 16.7 | 88 | S | 20 | 8.9 | ..... | 10cs | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 29.80 | 756.9 | 29.94 | 760.5 | 45 | 7.2 | 53 | NE | 5 | 2.2 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Threatening | |
| Stockton, Texas | 27.05 | 687.1 | 30.05 | 763.3 | 45 | 7.2 | 18 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.93 | 760.2 | 29.98 | 761.5 | 40 | 4.4 | 56 | E | 16 | 7.2 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Toledo, Ohio | 28.71 | 729.2 | 29.36 | 745.7 | 55 | 12.8 | 87 | S | 7 | 3.1 | ..... | ..... | 10n | ..... | Calm | 0.45 | 11.4 | Light rain | |
| Tucson, Arizona | 27.54 | 699.5 | 30.09 | 764.3 | 46 | 7.8 | 40 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.62 | 752.3 | 30.11 | 764.8 | 44.0 | 6.7 | 86 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | W | 0.15 | 3.8 | Light rain | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 28 | — 2.2 | 88 | SW | ..... | ..... | 6 | ..... | 10s | ..... | SW | 0.22 | 5.6 | Cloudy | |
| Uvalde, Texas | 29.21 | 741.9 | 30.04 | 763.0 | 51 | 10.6 | 46 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.65 | 753.1 | 29.90 | 759.4 | 59 | 15.0 | 70 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.26 | 6.6 | Clear | |
| Virginia City, Montana | 24.22 | 615.2 | 29.70 | 754.4 | 32 | 0.0 | 59 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Visalia, California | 29.64 | 752.8 | 30.03 | 762.2 | 49 | 9.4 | 85 | NW | 2 | 0.9 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Washington, D. C. | 29.62 | 752.3 | 29.73 | 755.1 | 54.5 | 12.5 | 67 | S | 11 | 4.9 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 45 | 7.2 | 46 | NW | ..... | ..... | 1 | 10c | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Wilmington, N. Carolina | 29.82 | 757.4 | 29.89 | 759.2 | 64 | 17.8 | 73 | S | 16 | 7.2 | ..... | 10k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Winnemucca, Nevada | 25.54 | 648.7 | 29.90 | 759.4 | 41 | 5.0 | 57 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 29.90 | 759.4 | 29.94 | 760.5 | 42 | 5.6 | 65 | E | 20 | 8.9 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Yankton, Dakota | 28.42 | 721.9 | 29.70 | 754.4 | 41 | 5.0 | 82 | NW | 28 | 12.5 | ..... | ..... | 10s | ..... | NW | 0.21 | 5.3 | Cloudy | |
| Yuma, Arizona | 29.76 | 755.9 | 29.92 | 760.0 | 57 | 13.9 | 52 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.20 | 716.3 | 29.60 | 751.8 | 47 | 8.3 | 34 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 29.94 | 760.5 | 29.99 | 761.7 | 74 | 23.3 | 76 | SE | 2.4 | 1.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.18 | 639.6 | ..... | ..... | 68.5 | 20.3 | 85 | Calm | 0 | 0 | ..... | 2cs | 6s;ks | ..... | ..... | 0.35 | 8.9 | ..... | Thomas Herran. |
| Navassa, W. I | 29.90 | 759.4 | 29.98 | 761.5 | 79 | 26.1 | ..... | NE | 6.7 | 3.0 | ..... | ..... | ..... | ..... | ..... | 0.05 | 1.3 | Cloudy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.01 | 762.2 | 30.01 | 762.2 | 79 | 26.1 | 91 | E | ..... | ..... | 2 | 5k | 8ks | E | ..... | 0 | 0 | ⅛ Clouded | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | 30.11 | 764.8 | 30.17 | 766.3 | 6.0 | —14.4 | 88 | NE | 7 | 3.1 | ..... | 1c | 0 | NE | ..... | 0 | 0 | Fair | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m., Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.97 | 761.2 | 52 | 11.1 | 51 | 10.6 | 93 | SSW | 11 | 4.9 | ..... | ..... | 2cs | ..... | W | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 29.95 | 760.7 | 68 | 20.0 | 68 | 20.0 | 95 | W | 2 | 0.9 | ..... | ..... | 5? | ..... | SE | 0.62 | 15.7 | ..... | ..... | Threatening? | |
| Navy Yard, Portsmouth, N. H | 30.00 | 762.0 | 60 | 15.6 | 38 | 3.3 | 59 | E | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Naval Hospital. Yokohama, Japan.....* | 29.84‡ | 757.9‡ | ..... | ..... | 47 | 8.3 | 92 | N | ..... | ..... | 3 | ..... | 10n | ..... | N | 0.17 | 4.3 | ..... | ..... | Light rain... | |
| Adams, Panama .....* | 29.95 | 760.7 | 80 | 26.7 | 79 | 26.1 | 91 | NW | ..... | ..... | 2 | ..... | 10 | ..... | NW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Alaska, Sitka, Alaska..... | 29.52‡ | 749.8‡ | ..... | ..... | 38 | 3.3 | 90 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.25 | 6.3 | Smooth | ..... | Raining..... | |
| Alliance, Naples, Italy..... | 29.78‡ | 756.4‡ | ..... | ..... | 58 | 14.4 | 82 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Raining ..... | |
| Ashuelot, Hong-Kong, China. ...* | 30.06‡ | 764.0‡ | ..... | ..... | 66 | 18.9 | 68 | N | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Canonicus, New Orleans, La.....* | 29.92 | 760.0 | 50 | 10.0 | 67 | 19.4 | 89 | W | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Colorado, New York, N. Y..... | 29.85 | 758.2 | 50 | 10.0 | 49 | 9.4 | 71 | ENE | 2 | 0.9 | ..... | ..... | 8 | ..... | WNW | 0 | 0 | ..... | ..... | Hazy..... | |
| Constitution Lisbon, Portugal..... | 29.82‡ | 757.4‡ | ..... | ..... | 58 | 14.4 | 88 | NNW | ..... | ..... | 6 | ..... | 2 | ..... | NNW | ..... | ..... | ..... | ..... | Clear. ..... | |
| Despatch, Genoa, Italy..... | 29.61‡ | 752.1‡ | ..... | ..... | 57 | 13.9 | 81 | NE | ..... | ..... | 2 | ..... | 5 | ..... | SE | ..... | ..... | Smooth | ..... | Fair..... | |
| Franklin, Norfolk, Va.....* | 29.99 | 761.7 | 65 | 18.3 | 56 | 13.3 | 87 | SW | 18 | 8.0 | ..... | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Raining ..... | |
| Gettysburg, Genoa, Italy .....* | 29.68‡ | 753.9‡ | ..... | ..... | 55 | 12.8 | 93 | ESE | ..... | ..... | 2 | ..... | 5 | ..... | S;E | 0.2 | 5. | ..... | ..... | Fair..... | |
| Hartford, Montevideo, Uruguay.* | 29.99 | 761.7 | 65 | 18.3 | 65 | 18.3 | 68 | SSE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair..... | |
| Michigan, Erie, Pa.....† | 29.75‡ | 755.6‡ | ..... | ..... | 48 | 8.9 | 92 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast.... | |
| Monocacy. Shanghai, China.....* | 30.46‡ | 773.7‡ | ..... | ..... | 39 | 3.9 | 73 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monongahela Yokohama, Japan .....* | 29.82‡ | 757.4‡ | ..... | ..... | 51 | 10.6 | 65 | N | ..... | ..... | 2-3 | ..... | 10 | ..... | ..... | Light | Light | ..... | ..... | Drizzling.... | |
| New Hampshire, Port Royal, S. C .....* | 29.95 | 760.7 | 67 | 19.4 | 65 | 18.3 | 94 | S | 20 | 8.9 | ..... | ..... | 8? | ..... | S | 0 | 0 | ..... | ..... | Clear?..... | |
| Onward, Callao, Peru. .....†* | 30.00 | 762.0 | ..... | ..... | 65 | 18.3 | 89 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Palos, Tientsin, China.....* | 30.40 | 772.1 | 77 | 25.0 | 37 | 2.8 | 90 | S? | ..... | ..... | 0? | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 56 | 13.3 | 94 | S | ..... | ..... | 5 | ..... | 8 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Pensacola. Iquique, Peru..... | 29.97‡ | 761.2‡ | ..... | ..... | 65 | 18.3 | 89 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Plymouth. Portsmouth, N. H..... | 30.10‡ | 764.5‡ | ..... | ..... | 39 | 3.9 | 60 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Powhatan. Norfolk, Va..... | 29.92‡ | 760.0‡ | ..... | ..... | 57 | 13.9 | 87 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.02 | 0.5 | ..... | ..... | Light rain.. | |
| Quinnebaug, Tangier, Morocco..... | 29.85‡ | 758.2‡ | ..... | ..... | 62 | 16.7 | 77 | W | ..... | ..... | 5 | ..... | 8 | ..... | W | ..... | ..... | ..... | ..... | Fair..... | |
| Ranger. Amoy, China.....* | 30.24‡ | 768.1‡ | ..... | ..... | 59 | 15.0 | 76 | ENE | ..... | ..... | 4 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy.. .... | |
| Richmond. N. 9° 36', E. 71° 17'..... | 29.85‡ | 758.2‡ | ..... | ..... | 84 | 28.9 | 71 | WNW | ..... | ..... | 3 | ..... | 2 | ..... | WNW | 0 | 0 | Smooth | ..... | Fair..... | |
| Rio Bravo. Brownsville, Texas..... | 29.96‡ | 761.0‡ | 67 | 19.4 | 66 | 18.9 | 100 | E | ..... | ..... | 1 | ..... | Fog | ..... | Calm | ..... | ..... | ..... | ..... | Clear..... | |
| Santee, Annapolis, Md... ..... | 29.76‡ | 755.9‡ | ..... | ..... | 50 | 10.0 | 86 | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Saratoga. N. 37° 45', W. 54° 05'..... | 30.02‡ | 762.5‡ | ..... | ..... | 60 | 15.6 | 71 | W | ..... | ..... | 6 | ..... | 10 | ..... | E | 0 | 0 | Mod'ate | W | D. clouds..... | |
| St. Louis, League Island, Pa..... | 29.83 | 757.7‡ | ..... | ..... | 51 | 10.6 | 72 | S | 8 | 3.6 | ..... | ..... | 10 | ..... | SW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Supply, New York, N. Y..... | 29.85‡ | 758.2‡ | ..... | ..... | 47 | 8.3 | 85 | ENE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Trenton Genoa, Italy.....* | 29.58‡ | 751.3‡ | ..... | ..... | 57 | 13.9 | 81 | SE | ..... | ..... | 1-2 | ..... | 8 | ..... | S | 0.04 | 1.0 | Mod'ate | S | Showery... | |
| Tuscarora. Port Sacrificios, Mexico.* | 29.83‡ | 757.7‡ | ..... | ..... | 77 | 25.0 | 86 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Long | SW | Foggy ..... | |
| Vandalia N 39° 50', W. 70° 55'....† | 29.99‡ | 761.7‡ | ..... | ..... | 43 | 6.1 | 100 | SW | ..... | ..... | 2 | ..... | 8 | ..... | SE | ..... | ..... | Mod'ate | WSW | Cloudy..... | |
| Wabash, Boston, Mass..... | 30.03‡ | 762.8‡ | ..... | ..... | 40 | 4.4 | 83 | SW | 5 | 2.2 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Fair..... | |
| Wyoming. Jaffa, Syria.....* | 29.85‡ | 758.2‡ | ..... | ..... | 73 | 22.8 | 90 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the air. | | Relative humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | |
| S. S. City of Tokio, Capt. Maury N. 36° 32′, W. 144° 42′ | | 30.47‡ | 773.9‡ | 68 | 14.4 | | W | | | 3 | | 2c | | | 0 | Heavy | NW | Fine | L. B. Walls. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitehu |
| S. S. Dakota, Capt. H. G. Morse, Esquimault, Vancouver I † | | 29.99‡ | 761.7‡ | | | | Calm | | | 0 | | 3 | | N | 0 | None | | Hazy | B. Lawless. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, S. 34° 15′, E. 171° 50′ | | 30.25‡ | 768.3‡ | | | | ESE | | | 2 | | 7 | | SE | | Mod'ate Light | SE | Fine | R. C. Ghest, 1st Officer |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kenn[illegible]y. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroi *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, N. 40°38′, W. 130° 49′ | | 30.17‡ | 766.3‡ | 48 | 8.9 | 78 | NW | | | 4 | | k | | NW | 0 | High | W | Squally | J. A. Thompson, 2d Off |
| S. S. Gaelic, N. 34° 50′, E. 140° 23′ | | 29.80‡ | 759.2‡ | 63 | 17.2 | 83 | NE | | | 5 | | Haze | | N | 0 | Swell | NE | Overcast | Capt. W. H. Kidley |
| §S. S. Oceanic, Capt. J. Metcalf, N. 34° 34′, E. 146° 02′ | | 29.98‡ | 761.6‡ | 53 | 11.7 | 93 | N | | | 3–5 | | 0 | | NW | | 3 | W | Showery | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. §The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the date may be in error one day; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andreessen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 42° 11′, W. 49° 32′ | | 29.86‡ | 758.4‡ | 43.0 | 6.1 | 68 | SW | | | 4 | | 8 | | | 3 hours | Long | SW | Cloudy | Capt. C. Undütsch. |
| S. S. Leipzig, N. 47° 55′, W. 30° 37′ | | 29.77‡ | 756.1‡ | 55.5 | 13.1 | 97 | Var. | | | 4–5 | | 8 | | NW | 4 hours | Mod'ate | WSW | Fair | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, Capt. G. Meyer, Baltimore, Md | | 29.50‡ | 749.3‡ | | | | SSE | | | 3 | | 8 | | S | | | | Cloudy | G. Risius, 3rd Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Philadelphia, Pa | | 29.86‡ | 758.4‡ | 48 | 8.9 | | S | | | 4 | | 6 | | SW | 0 | | | Cloudy | Captain Sargent Wm. Shackford, Chief Officer. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| Peruvian, N. 41° 30′ W. 67° 00′...† | | 29.97‡ | 761.2‡ | 34 | 1.1 | 82 | | SW | | 2 | | 2 | | SW | 0 | Smooth | | Clear | J. Powell, 4th Officer. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

**MARINE SERIES. (Miscellaneous.**

Furnished by the cooperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
| Brigantine "George," of Halifax | | | | | | | | | | | | | | | | | | | Willard N. Pratt. |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

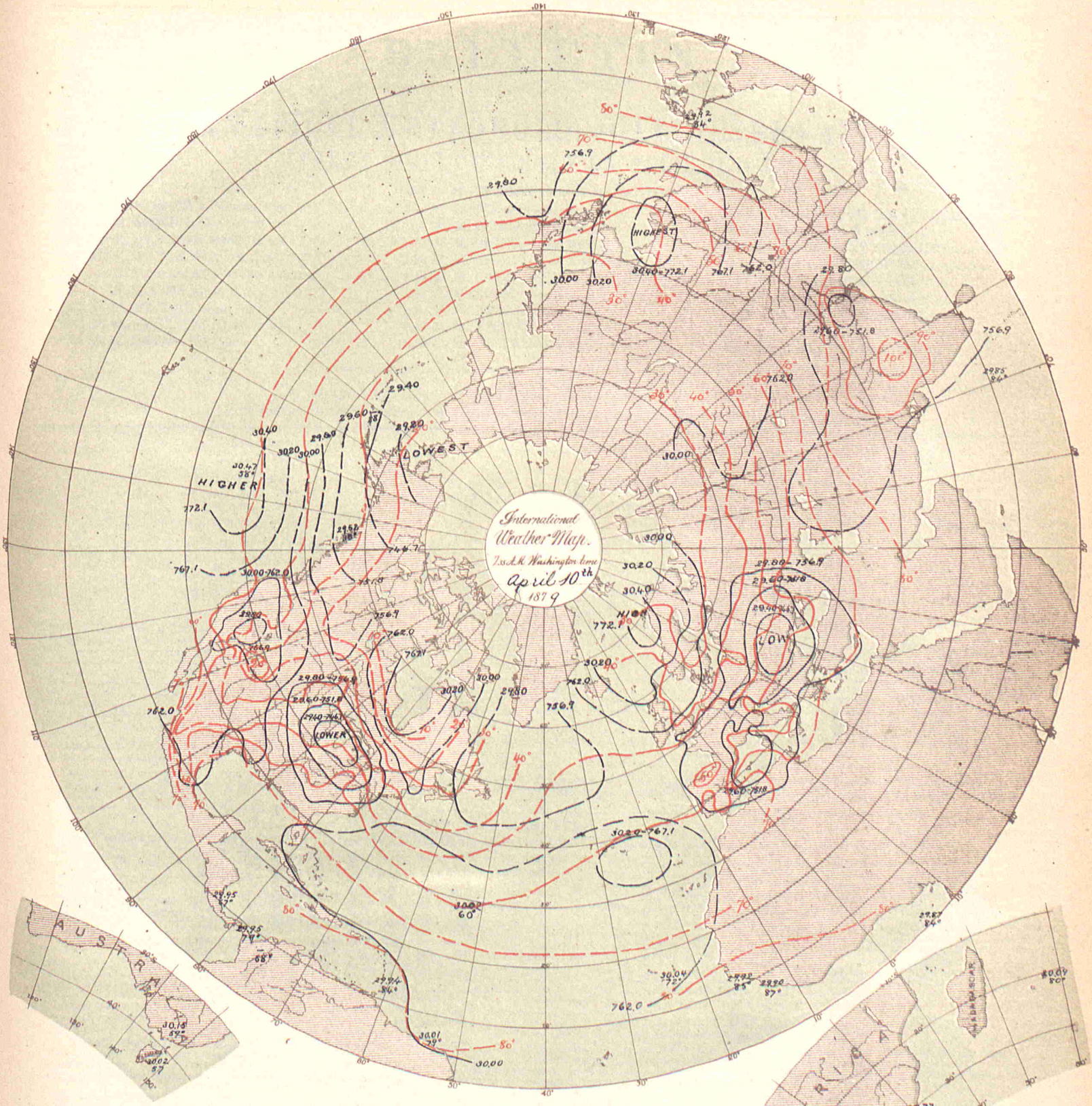
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$.) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

# BULLETIN

OF

# INTERNATIOAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 11, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:38 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGEGIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer: Corrected for instru'tal error and temperature. Inches. | Barometer: Corrected for instru'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 29.93 | 760.1 | 63.5 | 17.5 | 65 | NW | | | 4 | | 5 | | | 0.150 | 3.8 | Cloudy | Kesxuche. |
| Algiers | | | 29.69 | 754.1 | 59.0 | 15.0 | 72 | W | | | 8 | | 8 | | | 0.272 | 6.9 | Very cloudy | Tourliere. |
| La Calle | | | 29.67 | 753.7 | 62.6 | 17.0 | 80 | NE | | | 4 | | 5 | | | 0.224 | 5.7 | Cloudy | Foufredo. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 29.67 | 753.5 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 29.89 | 759.2 | 45.0 | 7.2 | 69 | W | | | 7 | | 10 | | | 0.228 | 5.8 | Raining | Herbin. |
| Tebessa | | | 29.74 | 755.3 | 62.2 | 16.8 | 55 | NNW | | | 2 | | 5 | | | 0.028 | 0.7 | Cloudy | Watrin. |
| Geriville | | | 29.87 | 758.8 | 65.8 | 18.8 | 66 | NNW | | | 6 | | 8 | | | 0 | 0 | Very cloudy | Brugnlaux. |
| Laghouat | | | 29.82 | 757.5 | 59.4 | 15.2 | 50 | WNW | | | 4 | | 2 | | | 0.110 | 2.8 | Fair | Bertrand. |
| Biskra | | | 29.73 | 755.2 | 70.2 | 21.2 | 21 | NW | | | 2 | | 2 | | | 0 | 0 | Fair | Chanvaux. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.10 | 739.0 | 29.64 | 752.9 | 52.9 | 11.6 | 72 | NE | | | 2 | | 10 | | | 0.736 | 18.7 | Raining | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.91 | 736.9 | 29.79 | 756.6 | 46.8 | 8.2 | 62 | E | | | 2 | | 10 | | | 0.004 | 0.1 | | Dr. Wierzbiski. |
| Eperies | 28.84 | 732.4 | 29.72 | 754.8 | 48.2 | 9.0 | 67 | N | | | 1 | | 10s | | | 0.406 | 10.30 | | Julius Mikolik. |
| Gr tz | 28.46 | 722.9 | 29.73 | 755.1 | 44.6 | 7.0 | 93 | ESE | | | 2 | | 10 | | | 0.201 | 5.1 | | Andreas Rospini. |
| Hermannstadt | 28.26 | 717.9 | 29.65 | 753.2 | 60.8 | 16.0 | 53 | WNW | | | 1 | | 10 | | | 0.063 | 1.65 | | Prof. A. Gottschling. |
| Kremsmünster | 28.32 | 719.3 | 29.67 | 753.6 | 44.6 | 7.0 | 82 | ENE | | | 4 | | 10 | | | 0.322 | 8.2 | | Prof. C. Wagner. |
| Lemberg | 28.76 | 730.6 | 29.77 | 756.1 | 40.3 | 4.6 | 64 | E | | | 1 | | 10 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 29.47 | 748.5 | 29.58 | 751.4 | 52.2 | 11.2 | 95 | SSE | | | 2 | | 10 | | | 0.437 | 11.1 | | I.R.Hydrographic Office |
| Szathmar | 29.29 | 743.9 | 29.76 | 755.8 | 49.3 | 9 6 | 79 | N | | | 1 | | 10 | | | 0 | 0 | | Julius Csics, S. J. |
| Szegedin | 29.41 | 747.0 | 29.69 | 754.0 | 62.1 | 16.7 | 66 | W | | | 1 | | 7 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 29.49 | 749.0 | 29.59 | 751.6 | 48.6 | 9.2 | 91 | E | | | 2 | | 10 | | | 1.193 | 30.3 | Rainy | P. Busin. |
| Vienna | 29.01 | 736.8 | 29.73 | 755.1 | 45.5 | 7.5 | 73 | NNE | | | 1 | | 10 | | | 0 | 0 | | I. R. Central Met. Obs'y |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.76 | 755.8 | 29.96 | 760.9 | 36.5 | 2.5 | 51 | NNE | | | 4 | | 10 | | NE | 0 | 0 | | Royal Observatory. |
| Furnes | 30.01 | 762.3 | 30.04 | 762.9 | 41.2 | 5.1 | 63 | ENE | | | 6 | | 5 | | | 0.091 | 2.3 | | M. E. de Cae. |
| Maeseyck | 29.83 | 757.6 | 29.95 | 760 8 | 36.3 | 2.4 | 72 | NNE | | | 4 | | 10 | | | 0 | 0 | | M. Pierrot. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.14 | 765.5 | 30.24 | 768.1 | 40.6 | 4.8 | ..... | E | 12 | 5.4 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | Blue sky..... | W. Boswell. |
| Ardrossan | 30.20 | 767.1 | 30.21 | 767.3 | 47 | 8.3 | ..... | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.29 | 769.4 | 43.2 | 6.2 | ..... | NNE | 3 | 1.3 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 30.21 | 767.3 | 40.0 | 4.4 | ..... | NW | 13 | 5.8 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 30.17 | 766.3 | 41.6 | 5.3 | ..... | ENE | 6 | 2.7 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Thomas Mackereth. |
| Bradford, Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.93 | 760.2 | 29.96 | 761.0 | 84 | 28.9 | ..... | SE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 30.14 | 765.5 | 39.0 | 3.9 | ..... | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Showery..... | H. Todd. [C. |
| Cardington | ..... | ..... | 30.12 | 765.0 | 37.4 | 3.0 | ..... | E | ..... | ..... | 3 | ..... | 8 | ..... | ..... | Blank | Blank | Overcast..... | John McLaren. |
| Chatham, School M. E. | 29.96 | 761.0 | 30.10 | 764.5 | 39.1 | 3.9 | ..... | NE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.50 | 723.9 | 30.03 | 762.8 | 34.0 | 1.1 | ..... | NE | ..... | ..... | 5 | ..... | 4 | ..... | ..... | ..... | ..... | Squally..... | Alexander Watt. |
| Donaghadee | 30.18 | 766.6 | 30.23 | 767.8 | 45 | 7.2 | ..... | NE | ..... | ..... | 5 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 30.00 | 762.0 | 30.03 | 762.8 | 39 | 3.9 | ..... | ENE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded... | J. Costello. |
| Falmouth, Observatory | 29.90 | 759.4 | 30.14 | 765.5 | 39.4 | 4.1 | ..... | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.70 | 703.6 | 30.01 | 762.2 | 71.4 | 21.9 | ..... | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.70 | 754.4 | 29.93 | 760.2 | 86 | 30.0 | ..... | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds.. | |
| Galway, Queen's college | ..... | ..... | 30.20 | 767.1 | 47 | 8.3 | ..... | ENE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 29.92 | 760.0 | 29.98 | 761.5 | 60.2 | 15.7 | ..... | W | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.99 | 761.7 | 30.20 | 767.1 | 46.8 | 8.2 | ..... | N | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | D. G. Maclean. [C. |
| Great Yarmouth | 30.10 | 764.5 | 30.11 | 764.8 | 35 | 1.7 | ..... | NNE | ..... | ..... | 5 | ..... | 6 | ..... | ..... | ..... | ..... | Snowing..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.93 | 760.2 | 30.11 | 764.8 | 39.8 | 4.3 | ..... | NE | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | The staff, for G.B. Airy. |
| Guernsey | 29.79 | 756.7 | 30.02 | 762.5 | 39.5 | 4.2 | ..... | NE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S.E.Hoskins, F.R.S. |
| Helston | 30.13 | 765.3 | 30.25 | 768.3 | 46 | 7.8 | ..... | E | ..... | ..... | 4 | ..... | 3ck | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 30.18 | 766.6 | 30.24 | 768.1 | 41 | 5.0 | ..... | NNE | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 29.73 | 755.1 | 30.03 | 762.8 | 39.2 | 4.0 | ..... | NE | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | J. Fisher. |
| Kew, Observatory | 30.08 | 764.0 | 30.11 | 764.8 | 39.5 | 4.2 | ..... | NE | 25 | 11.2 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | The Meteorological Of. |
| Leicester, Museum | 29.92 | 760.0 | 30.18 | 766.6 | 37.1 | 3.9 | ..... | NE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | Blank | Blank | D. clouds..... | Wm, J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.47 | 748.5 | 29.55 | 750.6 | 64 | 17.8 | ..... | NE | ..... | ..... | 2 | ..... | 3k | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 30.15 | 765.8 | 30.25 | 768.3 | 47 | 8.3 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Clear..... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 29.95 | 760.7 | 78.0 | 25.6 | ..... | SW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.. | C. S. Duncombe. |
| Nottingham, Observatory | 29.98 | 761.5 | 30.18 | 766.6 | 41.3 | 5.2 | ..... | NE | ..... | ..... | 3 | ..... | 8k;d | ..... | NE | 0 | 0 | D. clouds..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.64 | 752.8 | 30.18 | 766.6 | 40.5 | 4.7 | ..... | ENE | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.14 | 765.5 | 38 | 3.3 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. E. Bellamy. |
| Plymouth | 30.02 | 762.5 | 30.10 | 764.5 | 40.6 | 4.8 | ..... | NE | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | John Merrifield. |
| Roche's Point | 30.17 | 766.3 | 30.25 | 768.3 | 42 | 5.6 | ..... | ESE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded.... | Wm. Kennedy. |
| Saint Ann's Head | 30.00 | 762.0 | 30.17 | 766.3 | 42 | 5.6 | ..... | ENE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 41.8 | 5.4 | ..... | NNE | 10 | 4.5 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds..... | Rev C.Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.77 | 756.1 | 29.84 | 757.9 | 67.0 | 19.4 | ..... | SW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | W. H.Lyne. |
| Sheffield | ..... | ..... | ..... | ..... | ..... | ..... | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | D. clouds..... | W. F. Cooper. |
| Silloth Rectory | 30.19 | 766.8 | 30.22 | 767.6 | 45.2 | 7.3 | 65 | W | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | D. clouds..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.79 | 756.7 | 30.19 | 766.8 | 44.4 | 6.9 | ..... | NE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.89 | 759.2 | 30.11 | 764.8 | 41.4 | 5.2 | ..... | NE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | Squally..... | C. H. Griffith, F. M. S. |
| Thurso | 30.21 | 767.3 | 30.27 | 768.8 | 47 | 8.3 | ..... | NNW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John Trotter. |
| Truro, Royal Institution | 30.06 | 763.5 | 30.11 | 764.8 | 46 | 7.8 | ..... | NE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy ..... | W. Newcombe. |
| Valencia, Observatory | 30.20 | 767.1 | 30.22 | 767.6 | 48.6 | 9.2 | ..... | E | 13 | 5.8 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | The Meteorological Of. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.24 | 768.1 | 30.28 | 769.1 | 66.5 | 19.2 | 67 | NW | 9 | 4.0 | ..... | 0 | 4 | ..... | ..... | 0 | 0 | Fine..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.52 | 749.8 | 55.0 | 12.8 | 88 | S | ..... | ..... | 2 | ..... | 10k | ..... | ..... | 0 | 0 | Cloudy ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 30.26 | 768.6 | 42.2 | 5.7 | ..... | E | ..... | ..... | 2 | ..... | 6k | ..... | ..... | 0 | 0 | Cloudy..... | Andrew Gibb. |
| Mauritius, Observatory | 29.95 | 760.7 | 30.14 | 765.5 | 78.8 | 26.0 | 75 | ESE | 16.0 | 7.2 | ..... | 1 | 4 | ..... | ..... | 0.09 | 2.3 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 29.95 | 760.7 | 30.04 | 763.0 | 54.6 | 12.5 | 80 | W | 14 | 6.3 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| MonachLt-house, (Hebrides) | ..... | ..... | 30.27 | 768.8 | 47 | 8.3 | ..... | E | ..... | ..... | 4 | 0 | 0 | ..... | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.25 | 768.3 | 42 | 5.6 | ..... | NE | ..... | ..... | 4 | 0 | 0 | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

## BRITISH MARINE SERIES.

| VESSELS. | Sea or swell: Height scale 0—9 | Sea or swell: Direction from— | Weather. | Observer |
|---|---|---|---|---|
| H. M. S. "Fawn," | | | | |
| N. 40° 45′, E. 29° 55′ | ..... | W | D. clouds..... | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... |
| Brig Alliance | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda. | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle-Isle, | | | | |
| N. 48° 46′, W. 10° 17′ | ..... | NE | Overcast..... | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra, | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole, | | | | |
| N. 49° 47′, W. 8° 53′ | ..... | E | Overcast..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven, | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | Capt. W.R. McMontry. |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.26 | 667.0 | 29.98 | 761.5 | 67.1 | 19.5 | ..... | NE | ..... | ..... | 1 | p | 1k | ..... | ..... | 0 | 0 | ..... | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The elevation of San José is 1,145 meters, or 3,756.6 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.92 | 760.0 | 29.97 | 761.2 | 29.8 | — 1.2 | 52 | NE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 29.95 | 760.7 | 29.97 | 761.2 | 33.3 | 0.7 | 73 | NE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 30.03 | 762.7 | 30.07 | 763.8 | 31.3 | — 0.4 | 90 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Foggy | |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Faröe) | 30.35 | 770.9 | 30.39 | 771.8 | 44.2 | 6. 8 | 60 | E | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | |
| Vestervig | 29.79 | 756.7 | 29.96 | 761.0 | 29.1 | — 1.6 | 88 | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.39 | 746.6 | 29.95 | 760.6 | 39.6 | 4.2 | 70 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.126 | 3.2 | Snowing | Collignon, Director. |
| Amiens, Normal School | 29.80 | 756.8 | 29.83 | 757.6 | 56.1 | 13.4 | 73 | NNE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bonvallet, Director. |
| Avignon, Normal School | 29.53 | 750.1 | 29.61 | 752.1 | 64.0 | 17.8 | 46 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | M. Giraud, Director. |
| Bar-sur-Seine | 29.20 | 741.6 | 29.76 | 756.0 | 43.3 | 6.8 | 76 | ENE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Inap. | Inap. | Covered | C. Saillard, Director. |
| Beauvais, Normal School | 29.67 | 753.6 | 29.95 | 760.6 | 37.8 | 3.2 | 60 | NNE | ..... | ..... | 3 | ..... | 8 | ..... | NE | 0 | 0 | Very cloudy | Frere Eugene Marie, Dr |
| Besançon, Normal School | 28.80 | 731.4 | 29.69 | 754.1 | 51.1 | 10.6 | 83 | N | ..... | ..... | 4 | ..... | 5 | ..... | NW | 0.217 | 5.5 | Cloudy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.85 | 732.7 | 29.75 | 755.7 | 47.7 | 8.7 | 89 | W | ..... | ..... | 1 | ..... | 10kn | S | S | 0.488 | 12.4 | Covered | M. Marlot, Director. |
| Bourges, Normal School | 29.22 | 742.2 | 29.79 | 756.7 | 41.0 | 5 | 95 | E | ..... | ..... | 1 | ..... | 10n | E | E | 0.256 | 6.5 | Raining | A. Waquet, Director. |
| Brest, Naval Observatory | 29.70 | 754.5 | 29.95 | 760.7 | 43.5 | 6.4 | 65 | NNE | ..... | ..... | 4 | ..... | 10 | ..... | NNE | 0.039 | 1.00 | ..... | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.10 | 739.1 | 29.51 | 749.5 | 53.2 | 11.8 | 64 | E | ..... | ..... | 4 | ..... | 2 | E | E | 0.177 | 4.5 | Slightly cl'dy | September, Director. |
| Caen, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Lair, Director. |
| Chartres, Normal School | 29.24 | 742.8 | 29.83 | 757.6 | 36.5 | 2.5 | 95 | NW | ..... | ..... | 4 | ..... | 10 | ..... | S | 0.24 | 6. | Snowing | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.45 | 748.0 | 29.78 | 756.3 | 38.5 | 3.6 | 80 | NE | ..... | ..... | 3 | ..... | 8 | NE | NE | ..... | ..... | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.33 | 719.5 | 29.68 | 753.8 | 50.5 | 10.3 | 60 | W | ..... | ..... | 1 | ..... | 10 | ..... | NW | 0 | 0 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.91 | 734.2 | 29.79 | 756.6 | 39.9 | 4.4 | 83 | NE | ..... | ..... | 1 | ..... | 5kn | ..... | NE | 0.098 | 2.5 | Raining | Dr. Coulet, Director |
| Commune de Gréasque* | 28.47 | 723.0 | 29.61? | 752.0? | 59.5 | 15.3 | 45 | NW | ..... | ..... | 3 | ..... | 2 | ..... | NW | 0 | 0 | ¼ covered | M. Kina, Director. |
| Grenoble, Normal School | 28.85 | 732.8 | 29.61 | 752.1 | 53.8 | 12.1 | 57 | NW | ..... | ..... | 3 | ..... | kn | ..... | ..... | 0 | 0 | ..... | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.65 | 753.2 | 29.87 | 758.7 | 46.2 | 7.9 | 89 | N | ..... | ..... | 3 | ..... | 8 | ..... | N | 0.016 | 0.4 | Very cloudy | Mouillot, Director |
| Le Mans, Normal School | 29.58 | 751.2 | 29.89 | 759.2 | 37.9 | 3.3 | 83 | SW | ..... | ..... | 4 | ..... | 5 | ..... | SW | 0 | 0 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.83 | 732.2 | 29.74 | 755.5 | 50.9 | 10.5 | 70 | N | ..... | ..... | 1 | ..... | 8n | ..... | N | 0 | 0 | Very cloudy | Baudry, Director. |
| Lorient, Naval Observatory | 29.79 | 756.6 | 29.89 | 759.2 | 44.2 | 6.8 | 71 | NE | ..... | ..... | 5 | ..... | ..... | ..... | NE | 0 | 0 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Marseilles, Observatory | ..... | ..... | 29.58 | 751.2 | 62.8 | 17.1 | 57 | WNW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | The Staff |
| Mirecourt, Normal School | 28.63 | 727.2 | 29.69 | 754.2 | 39.2 | 4 | 83 | NNE | ..... | ..... | 3 | ..... | 10 | ..... | NE | 0 | 0 | Covered | M. Barbier, Director. |
| Nîmes, Normal School | 29.45 | 747.9 | 29.65 | 753.0 | 63.0 | 17.2 | 70 | N | ..... | ..... | 4 | ..... | 5 | ..... | N | 0.098 | 2.5 | Cloudy | Boyer, Director. |
| Privas, Normal School | 28.57 | 725.7 | 29.62 | 752.3 | 58.3 | 14.6 | 44 | N | ..... | ..... | 1 | ..... | ..... | N | N | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.81 | 630.1 | ..... | ..... | 31.3 | — 0.4 | 100 | W | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.067 | 1.7 | Foggy | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.79 | 756.7 | 29.82 | 757.5 | 51.1 | 10.6 | 77 | NNE | ..... | ..... | 1 | ..... | 10 | NNE | NNE | 0.04 | 1. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.87 | 758.7 | 29.96 | 760.9 | 40.5 | 4.7 | 47 | NE | ..... | ..... | 6 | ..... | 5 | W | NE | 0 | 0 | Cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.89 | 759.3 | 29.93 | 760.1 | 41.5 | 5.3 | 66 | NE | ..... | ..... | 6 | ..... | 8 | NNE | NNE | 0 | 0 | Very cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.72 | 754.8 | 29.88 | 759.0 | 36.7 | 2.6 | 80 | NNE | ..... | ..... | 3–4 | ..... | ..... | ..... | NNE | 0.008 | 0.2 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.72 | 729.5 | 29.80 | 756.9 | 53.6 | 12 | 65 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.16 | 4. | Raining | T. Huguet, Director. |
| Toulouse, Observatory | 29.05 | 737.9 | 29.76 | 756.0 | 54.0 | 12.2 | 65 | NW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | M. Mercadier Julier. |
| Versailles Observatory | 29.39 | 746.6 | 29.89 | 759.1 | 36.0 | 2.2 | 72 | NE | ..... | ..... | 8 | ..... | ..... | ..... | ..... | 0.004 | 0.11 | ..... | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.03 | 737.3 | 29.74 | 755.4 | 55.4 | 13 | 77 | NE | ..... | ..... | 1 | ..... | 10 | ..... | N | 0 | 0 | Covered | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.80 | 756.8 | 29.82 | 757.5 | 78.8 | 26 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 29.07 | 738.3 | 29.68 | 753.9 | 50.9 | 10.5 | 81 | NNW | ..... | ..... | 1 | ..... | 7 | ..... | NNW | ..... | ..... | Showery | Mr. Jays. |
| Mont-Louis | 24.51 | 622.5 | 29.82 | 757.5 | 37.4 | 3.0 | 66 | WNW | 24.2 | 10.8 | ..... | ..... | 2 | ..... | W | 0.028 | 0.7 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.61 | 752.0 | 60.4 | 15.8 | 83 | E | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.60 | 751.9 | ..... | ..... | 36.5 | 2.5 | 73 | NNE | ..... | ..... | 4 | ..... | 10 | ..... | NE | 0.693 | 17.6 | ..... | Marié Davy, Director. |
| Perpignan | 29.58 | 751.2 | 29.68 | 753.9 | 57.4 | 14.1 | 39 | NW | 20.6 | 9.2 | ..... | ..... | 1 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.14 | 562.4 | ..... | ..... | 37.0 | 2.8 | ..... | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 1.161 | 29.5 | Snowy | Gen'l de Nansouty. |
| Tours | 29.66 | 753.3 | 29 86 | 758.3 | 40.3 | 4.6 | 78 | NE | ..... | ..... | 3 | ..... | 10 | ..... | NE | 0.720 | 18.3 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.39 | 771.9 | 30.41 | 772.5 | 44.4 | 6.9 | 80 | ENE | 6.5 | 2.9 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-1 | Clouds. Amount. Up'er 0-10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.92 | 734.5 | 29.78 | 755.8 | 36.0 | 2.2 | 67 | NE | | | 6 | | 10 | E | | | | Snowing | Prof. Dr. Hoh. |
| Berlin | 29.75 | 755.7 | 29.93 | 760.3 | 34.5 | 1.4 | 88 | NE | | | 2 | | 10 | | | 0.020 | 0.5 | Raining | Prof. Arndt. |
| Breslau | 29.29 | 743.9 | 29.82 | 757.3 | 46.6 | 8.1 | 44 | ESE | | | 2 | | 10 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.29 | 744.0 | 29.72 | 755.0 | 44.4 | 6.9 | 73 | NE | | | 2 | | 10 | NE | | 0.394 | 10.0 | | Albert Senz. |
| Cassel | 29.23 | 742.4 | 29.83 | 757.7 | 35.2 | 1.8 | 69 | NE | | | 3 | | 10 | NE | | 0.013 | 0.3 | Snowing | Dr. H. Möhl. |
| Crefeld | 29.76 | 755.9 | 29.92 | 760.0 | 35.8 | 2.1 | 63 | N | | | 6 | | 8 | | | | | Snowy | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.46 | 748.3 | 29.83 | 757.6 | 39.2 | 4.0 | | NNE | | | 2 | | 10 | | | 0.130 | 3.3 | | Physical Society. |
| Freienwalde on the Oder | 29.86 | 758.6 | 29.91 | 759.6 | 32.5 | 0.3 | 92 | N | | | 3 | | 10ks | N | | 0.075 | 1.9 | Snowing | Assmann., M. D. |
| Friedrichshafen | 28.22 | 716.8 | 29.65 | 753.1 | 49.5 | 9.7 | 58 | NE | | | 7 | | 9 | NE | | 0.193 | 4.9 | | M. Wilhelm. |
| Hamburg | 29.91 | 759.6 | 29.98 | 761.5 | 32.7 | 0.4 | 64 | NE | | | 2 | | 7k;n | | | 0.016 | 0.4 | Snowy | Captain F. Hegemann. |
| Kiel | 29.97 | 761.2 | 29.98 | 761.6 | 33.1 | 0.6 | 74 | NE | | | 2 | | 4 | | | 0.084 | 2.13 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.81 | 757.2 | 29.89 | 759.3 | 42.4 | 5.8 | 66 | NE | | | 2 | | 4 | | | 0 | 0 | | Prof. E Luther. |
| Köslin | | | 29.83 | 757.7 | 32.2 | 0.1 | | NE | | | 4 | | 6 | | | 0.130 | 3.3 | | H. Müller. |
| Leipsic, Observatory | 29.48 | 748.7 | 29.91 | 759.8 | 34.0 | 1.1 | 70 | NNE | | | 2 | | 10 | NE | | 0.008 | 0.2 | Snowy | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.86 | 758.5 | 29.91 | 759.7 | 39.0 | 3.9 | 69 | NE | | | 2 | | 10cs;s | | | | | | Skalweit. |
| Neufahrwasser | 29.89 | 759.1 | 29.93 | 760.1 | 37.8 | 3.2 | 70 | NNE | | | 1 | | 9 | | | 0.012 | 0.3 | | A. Lothes. |
| Posen | 29.56 | 750.7 | 29.85 | 758.1 | 46.2 | 7.9 | 64 | E | | | 6 | | 10 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.18 | 741.1 | 29.74 | 755.3 | 43.0 | 6.1 | 81 | NNE | | | 4 | | 10 | NE | | | | Rain & snow | Imp. University Observatory. |
| Stuttgart | 28.75 | 730.3 | 29.69 | 754.2 | 47.8 | 8.8 | 63 | N | | | 1 | | 10 | | | 0.209 | 5.3 | | Prof. Schoder. |
| Treves (Trier) | 29.27 | 743.5 | 29.79 | 756.7 | 39.9 | 4.4 | 71 | E | | | 7 | | 10 | | | 0.006 | 0.14 | | Prof. Flesch. |
| Weissenburg (Bavaria) | 28.18 | 715.8 | 29.71 | 754.7 | 43.2 | 6.2 | 72 | NE | 11 | 5 | | | 10 | E | | 0 | 0 | Light fog | Dr. Van Bebber |
| Wustrow, Naval School | 29.93 | 760.1 | 29.95 | 760.7 | 32.4 | 0.2 | 96 | NNE | | | 3 | | 8ks | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.54 | 750.2 | 29.92 | 760.0 | 66.0 | 18.9 | | SW | | | 1.0 | | | | | | | Covered | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.77 | 756.1 | 29.82 | 757.4 | 85.7 | 29.8 | 55 | SW | 9 | 4.0 | | | 3 | W | | 0 | 0 | D. clouds | |
| Deesa | 29.24 | 742.7 | 29.70 | 754.3 | 96.8 | 36.0 | 18 | WSW | 6.0 | 2.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.72 | 754.9 | 29.76 | 755.8 | 85.0 | 29.4 | 62 | NW | 17 | 7.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.77 | 705.2 | 29.71 | 754.5 | 93.7 | 34.3 | 23 | WNW | | | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 28.92 | 734.6 | 29.64 | 752.8 | 95.2 | 35.1 | 15 | W | 3.2 | 1.4 | | | 4 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.25 | 692.6 | 29.74 | 755.4 | 83.7 | 28.7 | 71 | W | 17 | 7.6 | | | 1 | | | 0 | 0 | Gloomy | |
| Roorkee | 28.72 | 729.5 | 29.59 | 751.5 | 93.8 | 34.3 | 6 | NW | 5.4 | 2.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Agra | 29.11 | 739.4 | 29.66 | 753.2 | 97.6 | 36.4 | 12 | W | | | | | | | | 0 | 0 | | |
| Nagpur | 28.62 | 726.9 | 29.62 | 752.5 | 97.0 | 36.1 | 22 | W | 3 | 1.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.26 | 743.3 | 29.63 | 752.5 | 94.1 | 34.5 | 36 | WNW | 4.2 | 1.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.33 | 744.9 | 29.63 | 752.6 | 97.1 | 36.2 | 15 | WNW | 4.0 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.40 | 746.8 | 29.57 | 751.2 | 97.2 | 36.2 | 13 | NW | 2.0 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.66 | 702.6 | 29.61 | 752.0 | 93.3 | 34.1 | 21 | NW | 6.6 | 3.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.54 | 750.4 | 29.62 | 752.4 | 89.6 | 32.0 | 55 | S | 6 | 2.7 | | | 3 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.61 | 752.0 | 29.63 | 752.5 | 87.4 | 30.8 | 71 | S | 10.0 | 4.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.15 | 740.3 | 29.52 | 749.8 | 94.7 | 34.8 | 15 | W | 4.8 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.60 | 751.9 | 29.69 | 754.2 | 84.4 | 29.1 | 80 | SSW | 7.1 | 3.2 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.33 | 744.9 | 29.66 | 753.4 | 76.1 | 24.5 | 73 | ENE | 4.4 | 2.0 | | | 2 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.32 | 719.4 | 29.64 | 752.8 | 96.9 | 36.1 | 11 | N | 2.8 | 1.2 | | | 0 | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.21 | 741.9 | 29.62 | 752.3 | 50.7 | 10.4 | 68 | SE | 8.1 | 3.6 | ..... | ..... | 10 | ..... | ..... | 0.106 | 2.7 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.04 | 737.6 | 29.55 | 750.6 | 62.4 | 16.9 | 50 | SSW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.220 | 5.6 | ..... | Prof. Schiaparelli. |
| Padua | 29.50 | 749.2 | 29.61 | 752.0 | 54.5 | 12.5 | 69 | NNE | 13.0 | 5.8 | ..... | ..... | 10 | W | ..... | 0.197 | 5.0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.65 | 727.8 | 29.56 | 750.7 | 57.4 | 14.1 | 58 | SW | 3.1 | 1.4 | ..... | ..... | 3 | NE | ..... | 0.303 | 7.7 | ..... | Prof. P. F. Denza. |
| Genoa | 29.40 | 746.8 | 29.60 | 751.7 | 60.8 | 16.0 | 52 | SW | 4.9 | 2.2 | ..... | ..... | 4 | NW | ..... | 0.020 | 0.5 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.66 | 702.6 | 29.58 | 751.2 | 55.6 | 13.1 | 45 | E | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.59 | 751.6 | 29.64 | 752.8 | 54.0 | 12.2 | 79 | NE | 4.9 | 2.2 | ..... | ..... | 10 | ..... | ..... | 0.354 | 9.0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.36 | 745.8 | 29.62 | 752.3 | 59.0 | 15.0 | 58 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.571 | 14.5 | ..... | Cav. F. Meucci |
| Leghorn | 29.50 | 749.2 | 29.58 | 751.4 | 57.7 | 14.3 | 78 | SW | ..... | ..... | 4 | ..... | 5 | WSW | ..... | 0.496 | 12.6 | ..... | Prof. P. Monte. |
| Rome | 29.48 | 748.7 | 29.65 | 753.1 | 61.7 | 16.5 | 63 | S | 11.9 | 5.3 | ..... | ..... | 5 | ..... | ..... | 0.260 | 6.6 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.50 | 749.4 | 29.76 | 755.8 | 62.8 | 17.1 | 60 | SW | 19.9 | 8.9 | ..... | ..... | 8 | SW | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.82 | 732.1 | 29.70 | 754.4 | 64.4 | 18.0 | 77 | SE | 1.8 | 0.8 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.40 | 746.8 | 29.60 | 751.7 | 60.1 | 15.6 | 69 | SE | ..... | ..... | 4 | ..... | 10 | S | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.47 | 748.5 | 29.72 | 754.9 | 60.4 | 15.8 | 75 | ENE | 9.8 | 4.4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.64 | 752.8 | 29.71 | 754.6 | 59.4 | 15.2 | 88 | S | 7.4 | 3.3 | ..... | ..... | 9 | S | ..... | 0.031 | 0.8 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.17 | 740.8 | 29.72 | 754.9 | 55.4 | 13.0 | 93 | NE | 8.7 | 3.9 | ..... | ..... | 10 | ..... | ..... | 0.217 | 5.5 | ..... | Prof. V. Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.*

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.36 | 771.1 | 30.38 | 771.6 | 42.5 | 5.8 | 73 | N | 1.5 | 0.7 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Dull | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 30.14 | 765.5 | 30.35 | 770.9 | 46.5 | 8.1 | 69 | N | 5.1 | 2.3 | ..... | ..... | 7s | ..... | ..... | 0 | 0 | Cloudy | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 30.18 | 766.6 | 30.25 | 768.3 | 41.2 | 5.1 | 60 | NNE | 3.0 | 1.3 | ..... | ..... | 10s;n | ..... | ..... | 0.005 | 0.13 | Lt. graupel. | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.08 | 637.1 | 30.19 | 766.8 | 50.0 | 10.0 | 41 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Fine | Prof. L. Perez. |
| Leon | 24.46 | 621.3 | 30.11 | 764.8 | 62.1 | 16.7 | 70 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.14 | 587.6 | 30.14 | 765.6 | 54.5 | 12.5 | 66 | Calm | 0 | 0 | ..... | 9k | 0 | SW | ..... | 0 | 0 | Cloudy | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. V. de Leon, M. E. |
| Tlacotalpam | 29.98 | 761.4 | 29.99 | 761.7 | 77.4 | 25.2 | 90 | W | ..... | ..... | 1 | 0 | 7 | ..... | N | 0 | 0 | Cloudy | M. M. Chàzaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.45 | 595.5 | 30.21 | 767.3 | 49.6 | 9.8 | 63 | N | 0.9 | 0.4 | ..... | 0 | 6 | ..... | NW | 0.02 | 0.4 | ½ clouded | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. |
| Colima | 28.39 | 721.0 | 30.04 | 763.1 | 73.9 | 23.3 | 55 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Fine | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guera |

NOTE.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.03 | 762.8 | 30.03 | 762.8 | 38.1 | 3.4 | ..... | NNE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.031 | 0.8 | ..... | |
| Groningen | 29.99 | 761.7 | 30.00 | 762.1 | 32.4 | 0.2 | ..... | N | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.012 | 0.3 | ..... | |
| Helder | 30.02 | 762.6 | 30.02 | 762.6 | 34.9 | 1.6 | ..... | NNE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.039 | 1.0 | ..... | |
| Hellevoetsluis | 30.01 | 762.2 | 30.01 | 762.2 | 37.4 | 3.0 | 51 | NE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.97 | 761.2 | 30.02 | 762.4 | 36.5 | 2.5 | 57 | NE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.004 | 0.1 | Cloudy | H. v. d. Brink. |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.13 | 765.3 | 30.19 | 766.7 | 41.7 | 5.4 | 27 | NE | 16.3 | 7.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 30.30 | 769.7 | 30.34 | 770.7 | 34.9 | 1.6 | 69 | S | 9 | 4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 30.02 | 762.5 | 30.17 | 766.3 | 37.2 | 2.9 | 41 | NE | 20 | 9 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.08 | 764.0 | 30.12 | 765.1 | 32.4 | 0.2 | 92 | SSW | 29 | 13 | ..... | ..... | 10 | ..... | ..... | 0.039 | 1.0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.07 | 763.8 | 30.26 | 768.7 | 63 0 | 17.2 | 90 | WSW | 2.5 | 1.1 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.94 | 735.0 | 29.97 | 761.2 | 58.3 | 14.6 | 50 | WNW | 16.1 | 7.2 | ..... | ..... | 8 | WNW | ..... | 0.102 | 2.6 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.16 | 766.0 | 30.24 | 768.2 | 65.3 | 18.5 | 50 | SW | 6.3 | 2.8 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.71 | 754.7 | 30.08 | 763.9 | 56.8 | 13.8 | 59 | NW | 21.0 | 9.4 | ..... | ..... | 8 | ..... | ..... | 0.004 | 0.1 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.24 | 768.0 | 30.31 | 769 8 | 66 2 | 19.0 | 77 | SW | 6.9 | 3.1 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | A. G. da Silva Costa, Com'd.t. |
| D. Fernando | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| Duque da Terceira, Santiago, Cape Verd I. | 3 | ..... | D. clouds | C.C.da Fonseca Ferreira, Comd't |
| India | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, St. Thomas, Gulf of Guinea | 1 | SE | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. San Jose de Bissao, Senegambia | ..... | ..... | Blue sky | A. Ferreira, 2d Lt. |
| Sá da Bandeira, Ambrizette, S. 7° 13′, E. 12° 52′ | ..... | ..... | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo. Macao, China | 2 | NW | Overcast | J. M. T. Guimaraes, Com'd't |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.41 | 746.9 | 29.84 | 757.9 | 40.3 | 4.6 | 57 | NNE | 7 | 3 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.39 | 746.5 | 29.82 | 757.4 | 37.8 | 3.2 | 71 | NNE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds | Astronomical Obs. |
| Dorpat | 29.73 | 755.2 | 29.98 | 761.6 | 33.1 | 0.6 | 61 | NNE | 18 | 8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.03 | 762.7 | 30.04 | 763.1 | 31.1 | — 0.5 | 71 | NE | 16 | 7 | ..... | ..... | 2cs | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 28.93 | 734.9 | 29.58 | 751.3 | 38.3 | 3.5 | 90 | NW | 13 | 6 | ..... | ..... | 10ks;n | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.66 | 753.4 | 29.73 | 755.2 | 48.4 | 9.1 | 77 | WSW | 18 | 8 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.77 | 756.2 | 29.79 | 756.7 | 62.2 | 16.8 | 63 | S | 11 | 5 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.10 | 739.0 | 29.65 | 753.1 | 38 5 | 3.6 | 97 | SE | 9 | 4 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.36 | 745 8 | 29.56 | 750.9 | 61.9 | 16.6 | 59 | SW | 31 | 14 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 30.07 | 763.7 | 30.09 | 764.2 | 22.3 | — 5.4 | 78 | W | 18 | 8 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.44 | 722.4 | 29.81 | 757.2 | 69.1 | 20.6 | 51 | NW | 45 | 20 | ..... | ..... | 3c | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 29.84 | 757.9 | 29.76 | 755.8 | 62.8 | 17.1 | 41 | NW | 7 | 3 | ..... | ..... | 10ns | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.47 | 748.4 | 29.94 | 760.4 | 47.5 | 8.6 | 61 | NW | 2 | 1 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.64 | 752.8 | 29.91 | 759.8 | 41.4 | 5.2 | 74 | S | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.00 | 736.5 | 29.97 | 761.2 | 42.4 | 5.8 | 58 | W | 18 | 8 | ..... | ..... | 7ck | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.60 | 751.8 | 29.83 | 757.6 | 69.6 | 20.9 | 41 | W | 4 | 2 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.31 | 719.1 | 29.82 | 757.5 | 71.2 | 21.8 | 42 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Teich, A. M. |
| Barnaul | 29.48 | 748.8 | 29.99 | 761.8 | 40.8 | 4.9 | 64 | N | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeniseisk | 29.88 | 758.9 | 30.18 | 766.6 | 31.6 | — 0.2 | 65 | SE | 4 | 2 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking, (China) | 29.94 | 760.4 | 30.08 | 764.0 | 48.2 | 9.0 | 49 | SW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 30.08 | 764.1 | 30.18 | 766.6 | 22.8 | — 5.1 | 93 | N | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.54 | 750.3 | 29.65 | 753.0 | 61.6 | 16.1 | 62 | ENE | 2.7 | 1.19 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Rainy | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 29.80 | 757.0 | 29.86 | 758.5 | 54.3 | 12.4 | 85 | NW | 2.4 | 1.06 | ..... | ..... | 10 | ..... | ..... | 0.307 | 7 8 | Raining | Prof. Manuel de Navera |
| Burgos, Met. Obs'y | 26.86 | 682.2 | ..... | ..... | 42.8 | 6.0 | 77 | NW | 6.4 | 2.88 | ..... | ..... | 8 | ..... | ..... | 0.059 | 1.5 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.57 | 700.3 | ..... | ..... | 54.5 | 12.5 | 52 | W | 8.9 | 4.00 | ..... | 3 | 5 | W | ..... | 0.165 | 4.2 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.54 | 750.3 | 29.69 | 754.1 | 64.4 | 18.0 | 46 | N | 5.3 | 2.39 | ..... | 4 | 5 | S | ..... | 0 | 0 | Almost cov'd | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.03 | 737.3 | 29.94 | 760.4 | 49.1 | 9.5 | 86 | NW | 15.0 | 6.7 | ..... | ..... | 10 | ..... | ..... | 0.276 | 7.0 | Rainy | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.92 | 760.0 | 29.99 | 761.7 | 73.9 | 23.3 | 86 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| Manilla, Philippine Islands. | 29.84 | 757.9 | 29.88 | 759.1 | 82.8 | 28.2 | 65 | E | 2.9 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0.197 | 5.0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y. | 29.92 | 760.1 | 30.02 | 762.6 | 57.4 | 14.1 | 62 | WNW | 20.6 | 9.2 | ..... | 0 | 5 | ..... | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W.I. | 29.91 | 759.6 | 30.00 | 761.9 | 77.4 | 25.2 | 89 | SE | 0 | 0 | ..... | 4c | 3kn | SE | SE | 1.417 | 36.00 | Cloudy | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer, corrected for instrum'tal error and temperature. | | Barometer, reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. Direction. | Wind. Velocity. | | Wind. Force. | Clouds. Amount. | | Clouds. Direction. | | Rain-fall or melted snow in the past 24 hours. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | L'w'r 0—10. | Upper. From— | Lower From— | Inches. | Millimeters. | | |
| Haparanda | 30.25 | 768.3 | 30.29 | 769.3 | 32.0 | 0.0 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.27 | 768.8 | 30.32 | 770.1 | 37.4 | 3.0 | 50 | SW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.26 | 768.7 | 30.32 | 770.0 | 38.5 | 3.6 | 47 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0.012 | 0.3 | ..... | |
| Stockholm | 29.95 | 760.6 | 30.12 | 765.1 | 29.1 | — 1.6 | 60 | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.075 | 1.9 | ..... | |
| Wisby | 29.87 | 758.8 | 29.93 | 760.3 | 35.6 | 2.0 | 78 | E | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.08 | 763.9 | 30.15 | 765.8 | 29.5 | — 1.4 | 76 | ENE | 16.3 | 7.3 | ..... | ..... | 8 | ..... | E | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.21 | 716.5 | 29.64 | 752.8 | 53.4 | 11.9 | 58 | N | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | The Observatory. |
| Zurich | 28.04 | 712.1 | 29.69 | 754.1 | 49.3 | 9.6 | 71 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.205 | 5.2 | Covered..... | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —7.7 mm.; Thermometer, +0.6 Cent.; Relative Humidity, 0 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.88 | 759.0 | 68.5 | 20.3 | 46 | SSW | 7 | 3.0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Observatory. | |
| Fao, Persian Gulf | ..... | ..... | 30.32 | 770.0 | 84.2 | 29.0 | ..... | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.84 | 757.8 | 69.6 | 20.9 | ..... | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered ..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.82 | 757.4 | 29.93 | 760.3 | 71.4 | 21.9 | 67 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.79 | 756.7 | 29.86 | 758.4 | 29.4 | — 1.4 | 88 | NE | 15 | 6.7 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Overcast..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.43 | 747.5 | 29.74 | 755.4 | 29 | — 1.7 | ..... | NE | 12 | 5.4 | ..... | ..... | 10s | ..... | NE | 0.30 | 7.6 | Cloudy..... | W. R. Bigg. |
| *Chatham, N. B | 29.77 | 756.1 | 29.83 | 757.7 | 30 | — 1.1 | 87 | NE | 11 | 4.9 | ..... | ..... | 10n | ..... | NE | 0 | 0 | Cloudy ..... | G. A. Blair. |
| Charlottetown, P. E. Island | 29.76 | 755.9 | 29.81 | 757.2 | 31 | — 0.6 | 100 | E | 13 | 5.8 | ..... | ..... | 10n | ..... | ..... | 0.75 | 1.91 | Light snow.. | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.45 | 748.0 | 29.65 | 753.1 | 32.0 | 0.0 | 86 | NE | ..... | ..... | 4 | ..... | 10s | ..... | ..... | 0.05 | 1.3 | Overcast..... | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 30.15 | 765.8 | 30.20 | 767.1 | 37.1 | 2.8 | 100 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | W. H. Bevis. |
| *Father Point, Quebec | 29.87 | 758.7 | 29.89 | 759.2 | 27 | — 2.8 | 91 | NE | 42 | 18.8 | ..... | 8k | 2n | NE | NE | 0 | 0 | Threatening | J. McWilliams. |
| Fredericton, N. B | 29.64 | 752.8 | 29.70 | 754.4 | 28.0 | — 2.2 | 99 | NE | 15 | 6.7 | ..... | ..... | 10n | ..... | ..... | 0.65 | 16.5 | Snowing..... | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.25 | 742.9 | 30.10 | 764.5 | 32 | 0.0 | 90 | W | 2 | 0.9 | ..... | 2c | Haze | W | ..... | 0 | 0 | Fair ..... | James Stewart. |
| Granton, Ontario | 28.79 | 731.2 | 29.94 | 760.5 | 27 | — 2.8 | ..... | N | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0.20 | 5.1 | Clear..... | James Grant. |
| *Halifax, N. S | 29.43 | 747.5 | 29.57 | 751.1 | 32 | 0.0 | 98 | SE | 28 | 12.5 | ..... | ..... | 10n | ..... | ..... | 0.350 | 8.89 | Heavy rain.. | F. Allison, M. A. |
| Hamilton, Ontario | 29.51 | 749.5 | 29.89 | 759.2 | 28.7 | — 1.8 | 93 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.42 | 10.7 | Clear..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.50 | 749.3 | 29.85 | 758.2 | 29 | — 1.7 | 86 | NW | 16 | 7.2 | ..... | 8ck | 0 | Calm | ..... | 0.32 | 8.1 | Fair ..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.84 | 757.9 | 29.88 | 758.9 | 29.8 | — 1.2 | 94 | S | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing. .... | C. H. Rigby. |
| Moose Factory, Ontario | 30.33 | 770.4 | 30.37 | 771.4 | 9.8 | —12.3 | 79 | N | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | J. R. Nason. |
| *Montreal, Quebec | 29.50 | 749.3 | 29.70 | 754.4 | 31 | — 0.6 | 70 | NE | 25 | 11.2 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.24 | 742.7 | 29.97 | 761.2 | 24 | — 4.4 | 57 | N | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Rev. R. Mosley. |
| Peterboro, Ontario | 29.06 | 738.1 | 29.85 | 758.2 | 28.6 | — 1.9 | 64 | N | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0.40 | 10.2 | Fine..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.15 | 740.4 | 29.88 | 758.9 | 29 | — 1.7 | 66 | N | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.18 | 4.6 | Clear..... | H. Morgan. |
| Port Hastings, N. S | 29.71 | 754.6 | 29.76 | 755.9 | 29.7 | — 1.3 | ..... | E | 15 | 6.7 | ..... | ..... | ..... | ..... | ..... | 0.20 | 5.1 | Snowing..... | Peter Grant. |
| Port Stanley, Ontario | 29.23 | 742.4 | 29.90 | 759.4 | 30 | — 1.1 | 80 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.25 | 6.3 | Clear..... | M. Payne. |
| *Quebec, Quebec | 29.43 | 747.5 | 29.77 | 756.1 | 20 | — 1.7 | 67 | E | ..... | ..... | 7 | ..... | 10n | ..... | E | 0 | 0 | Cloudy..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.46 | 748.3 | 29.94 | 760.5 | 27 | — 2.8 | 55 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | W. H. McIntyre. |
| St. Andrews, N. B | 29.46 | 748.3 | 29.51 | 749.5 | 31 | — 0.6 | 96 | NE | ..... | ..... | 4 | ..... | 10n | ..... | ..... | 0.40 | 10.2 | Light snow.. | Dr. Gove. |
| St. John, N. B | 29.38 | 746.2 | 29.55 | 750.6 | 30 | — 1.1 | 94 | NE | 22 | 9.8 | ..... | ..... | 10n | ..... | ..... | 0.85 | 21.6 | Heavy snow | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.24 | 742.7 | 29.99 | 761.7 | 25 | — 3.9 | 89 | N | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear..... | K. Stewart. |
| Stayner, Ontario | 29.12 | 739.6 | 29.95 | 760.7 | 23 | — 5.0 | 68 | E | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0.59 | 15.0 | Clear..... | R. J. Cole. |
| Stratford, Ontario | 28.57 | 725.7 | 29.92 | 760.0 | 25.0 | — 3.9 | 86 | N | 10 | 4.5 | ..... | ..... | 0 | ..... | ..... | 0.15 | 3.8 | Clear..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.92 | 760.0 | 29.96 | 761.0 | 32 | 0.0 | 91 | SE | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.01 | 0.3 | Light snow. | T. C. Hill. |
| *Toronto, Ontario | 29.54 | 750.3 | 29.94 | 760.5 | 27 | — 2.8 | 56 | N | 23 | 10.3 | ..... | 0 | 0 | ..... | ..... | 0.200 | 5.08 | Clear..... | Magnetic Observatory. |
| Windsor, N. S | 29.43 | 747.5 | 29.53 | 750.0 | 32.0 | 0.0 | 100 | E | 16 | 7.2 | ..... | ..... | 10n | ..... | ..... | 0.36 | 9.1 | Overcast..... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 33.0 | 0.6 | 100 | W | ..... | ..... | ..... | 0 | 8s | ..... | ..... | Inap. | Inap. | Fair ..... | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Cloud. Amount. Up'er 0—10. | Cloud. Amount. Low'r 0—10. | Cloud. Direction. Upper. From— | Cloud. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.37 | 746.0 | 29.60 | 751.8 | 33 | 0.6 | 84 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | N | 0.26 | 6.6 | Cloudy | |
| Alpena, Michigan | 29.42 | 747.2 | 30.10 | 764.5 | 27 | — 2.8 | 76 | NE | 19 | 8.5 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Atlanta, Georgia | 28.58 | 725.2 | 29.70 | 754.4 | 55 | 12.8 | 62 | W | 6 | 2.7 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Atlantic City, New Jersey | 29.59 | 751.6 | 29.60 | 751.8 | 41 | 5.0 | 100 | N | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 1.70 | 43.2 | Cloudy | |
| Augusta, Georgia | 29.56 | 750.8 | 29.73 | 755.1 | 57 | 13.9 | 63 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.32 | 8.1 | Clear | |
| Baltimore, Maryland | 29.54 | 750.3 | 29.59 | 751.6 | 52 | 11.1 | 86 | NW | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | 0.65 | 16.5 | Light rain | |
| Barnegat, New Jersey | 29.57 | 751.1 | 29.59 | 751.6 | 40 | 4.4 | 91 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 1.43 | 36.3 | Cloudy | |
| Bismarck, Dakota | 28.16 | 715.3 | 30.02 | 762.5 | 39 | 3.9 | 91 | E | 4 | 1.8 | ..... | 10c | 0 | W | ..... | 0 | 0 | Cloudy | |
| Boerne, Texas | 28.59 | 726.2 | 29.94 | 760.5 | 42 | 5.6 | 50 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boise City, Idaho | 27.12 | 688.8 | 30.08 | 764.0 | 40 | 4.4 | 73 | W | 8 | 3.6 | ..... | 2k | 2s | W | Calm | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.34 | 745.2 | 29.50 | 749.3 | 32 | 0.0 | 79 | N | 16 | 7.2 | ..... | ..... | 10n | ..... | N | 1.88 | 47.8 | Cloudy | |
| Brackettville, Texas | 28.87 | 733.3 | 29.89 | 759.2 | 61 | 16.1 | 40 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 29.10 | 739.1 | 30.14 | 765.5 | 33 | 0.6 | 70 | SE | 15 | 6.7 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Brownsville, Texas | 29.96 | 761.0 | 30.00 | 762.0 | 71 | 21.7 | 75 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.10 | 739.1 | 29.82 | 757.4 | 30 | — 1.1 | 62 | N | 14 | 6.3 | ..... | 0 | 1s | ..... | N | 0.47 | 11.9 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 56 | 13.3 | 24 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.31 | 744.5 | 29.60 | 751.8 | 30 | — 1.1 | 94 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | NE | 0.16 | 4.1 | Light snow | |
| Cairo, Illinois | 29.61 | 752.1 | 30.01 | 762.2 | 50 | 10.0 | 72 | NW | 16 | 7.2 | ..... | ..... | 10s | ..... | NW | 0.11 | 2.8 | Cloudy | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.02 | 635.5 | 29.82 | 757.4 | 54 | 12.2 | 15 | NE | 8 | 3.6 | ..... | 5k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 46 | 7.8 | 40 | SW | ..... | ..... | 4 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.26 | 692.6 | 29.84 | 757.9 | 33 | 0.6 | 89 | SW | 16 | 7.2 | ..... | ..... | 10s | ..... | SW | 0.36 | 9.1 | Cloudy | |
| Cape Hatteras, N. Carolina | 29.60 | 751.8 | 29.60 | 751.8 | 59 | 15.0 | 94 | SW | 6 | 2.7 | ..... | 10cs | Haze | Calm | ..... | 0.66 | 16.8 | Cloudy | |
| Cape Henry, Virginia | 29.58 | 751.3 | 29.60 | 751.8 | 52 | 11.1 | 86 | NW | 8 | 3.6 | ..... | ..... | 10ks | ..... | SW | 0.88 | 22.4 | Cloudy | |
| Cape Lookout, N. Carolina | 29.57 | 751.1 | 29.58 | 751.3 | 59 | 15.0 | 94 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.27 | 6.9 | Clear | |
| Cape May, New Jersey | 29.54 | 750.3 | 29.58 | 751.3 | 45 | 7.2 | 92 | E | 10 | 4.5 | ..... | 10ck | Fog | W | ..... | 1.16 | 29.5 | Cloudy | |
| Castroville, Texas | 29.26 | 743.2 | 29.98 | 761.5 | 52 | 11.1 | 47 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 29.66 | 753.4 | 29.72 | 754.9 | 60 | 15.6 | 60 | W | 8 | 3.6 | ..... | Haze | 0 | Calm | ..... | 0.01 | 0.3 | Clear | |
| Cheyenne, Wyoming | 24.01 | 609.8 | 29.95 | 760 7 | 31 | — 0.6 | 38 | NW | 5 | 2.2 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Chicago, Illinois | 29.38 | 746.2 | 30.09 | 764.3 | 37 | 2.8 | 71 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Cincinnati, Ohio | 29.25 | 742.9 | 29.91 | 759.7 | 42 | 5.6 | 74 | N | 14 | 6.3 | ..... | ..... | 10s | ..... | N | 0.08 | 2.0 | Cloudy | |
| Cleveland, Ohio | 29.16 | 740.7 | 29.90 | 759.4 | 34 | 1.1 | 79 | N | 19 | 8.5 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Coleman City, Texas | 28.25 | 717.5 | 29.95 | 760.7 | 46 | 7.8 | 77 | Calm | 0 | 0 | ..... | 8c | 0 | W | ..... | 0 | 0 | Fair | |
| Columbus, Ohio | 29.05 | 737.9 | 29.91 | 759.7 | 36 | 2.2 | 71 | N | 14 | 6.3 | ..... | ..... | 10ks | ..... | N | 0.02 | 0.5 | Cloudy | |
| Corpus Christi, Texas | 28.13 | 714.5 | 29.84 | 757.9 | 44 | 6.7 | 92 | NW | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Corsicana, Texas | 29.60 | 751.8 | 30.08 | 764.0 | 51 | 10 6 | 53 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.49 | 749.0 | 30.16 | 766.1 | 35 | 1.7 | 70 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.25 | 6.3 | Clear | |
| Deadwood, Dakota | 25.27 | 641.8 | ..... | ..... | 43 | 6.1 | 36 | W | 12 | 5.4 | ..... | 8k | 0 | W | ..... | 0 | 0 | Fair | |
| Decatur, Texas | 28.89 | 733.8 | 30.06 | 763.5 | 55 | 12.8 | 74 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.28 | 743.7 | 30.08 | 764.0 | 50 | 10.0 | 72 | N | 2 | 0.9 | ..... | 2c | 0 | N | ..... | 0 | 0 | Fair | |
| Denver, Colorado | 24.75 | 628.6 | 29.97 | 761.2 | 39 | 3.9 | 31 | NW | 4 | 1.8 | ..... | 5c | 5s | W | Calm | 0 | 0 | Cloudy | |
| Des Moines, Iowa | 29.28 | 743.7 | 30.20 | 767.1 | 35 | 1.7 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 29.28 | 743.7 | 29.97 | 761.2 | 31 | — 0.6 | 69 | N | 10 | 4.5 | ..... | Haze | 0 | Calm | ..... | 0.14 | 3.6 | Clear | |
| Dodge City, Kansas | 27.54 | 699.5 | 29.91 | 759.7 | 35 | 1.7 | 80 | NW | 4 | 1.8 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.46 | 748.3 | 30.19 | 766.8 | 36 | 2.2 | 71 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Clear | |
| Duluth, Minnesota | 29.55 | 750.6 | 30.26 | 768.6 | 34 | 1.1 | 79 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.21 | 741.9 | 29.95 | 760.7 | 57 | 13.9 | 47 | E | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.39 | 746.5 | 29.46 | 748.3 | 31 | — 0.6 | 100 | NE | 43 | 19.2 | ..... | ..... | 10n | ..... | ..... | 0.30 | 7.6 | Sleeting | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 62 | 16.7 | 83 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| El Paso, Texas | 26.12 | 663.4 | ..... | ..... | 49 | 9.4 | 18 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.13 | 739.9 | 29.86 | 758.4 | 32 | 0.0 | 79 | N | 9 | 4.0 | ..... | 1ck | 0 | N | ..... | 0.44 | 11.2 | Clear | |
| Escanaba, Michigan | 29.54 | 750.3 | 30.24 | 768.1 | 26 | — 3.3 | 52 | N | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.23 | 717.0 | 29.83 | 757.7 | 58 | 14.4 | 27 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.86 | 707.6 | ..... | ..... | 44 | 6.7 | 75 | E | 7 | 3.1 | ..... | 10c | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Fort Craig, New Mexico | 25.43 | 645.9 | 29.50 | 749.3 | 40 | 4.4 | 38 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.16 | 639.0 | 30.12 | 765.0 | 58 | 14.4 | 16 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.53 | 750.0 | 30.07 | 763.8 | 51 | 10.6 | 79 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.85 | 732.8 | 30.16 | 766.1 | 47 | 8.3 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.30 | 693.4 | ..... | ..... | 44 | 6.7 | 52 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort McKavett, Texas | 27.77 | 705.4 | 29.69 | 754.1 | 52 | 11.1 | 54 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.12 | 739.6 | 29.15 | 740.4 | 16 | — 8.9 | 100 | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Sill, Indian Territory | 28.89 | 733.8 | 30.03 | 762.8 | 45 | 7.2 | 84 | N | 12 | 5.4 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Fort Stevenson, Dakota | 28.15 | 715.0 | ..... | ..... | 37 | 2.8 | 71 | NE | 2 | 0.9 | ..... | 4cs | 0 | W | ..... | 0 | 0 | Fair | |
| Fredericksburg, Texas | 28.31 | 719.1 | 29.86 | 758.4 | 62 | 16.7 | 36 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 29.99 | 761.7 | 30.03 | 762.8 | 62 | 16.7 | 88 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Graham, Texas | 29.01 | 736.8 | 30.09 | 764.3 | 44 | 6.7 | 60 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.44 | 747.8 | 30.11 | 764.8 | 34 | 1.1 | 61 | NE | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear | |
| Indianapolis, Indiana | 29.14 | 740.1 | 29.93 | 760.2 | 40 | 4.4 | 73 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | N | 0.13 | 3.3 | Cloudy | |
| Indianola, Texas | 30.04 | 763.0 | 30.06 | 763.5 | 68 | 20.0 | 90 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.98 | 736.1 | 30.12 | 765.0 | 55 | 12.8 | 45 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.80 | 756.9 | 29.82 | 757.4 | 66 | 18.9 | 64 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.45 | 748.0 | 30.09 | 764.3 | 38 | 3.3 | 63 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Key West, Florida | 29.93 | 760.2 | 29.97 | 761.2 | 76 | 24.4 | 86 | SW | 9 | 4.0 | ..... | 0 | 5s | ..... | SW | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 29.55 | 750.6 | 29.57 | 751.1 | 57 | 13.9 | 100 | W | 3 | 1.3 | ..... | ..... | Fog | ..... | Calm | 0.43 | 10.9 | Foggy | |
| Knoxville, Tennessee | 28.76 | 730.5 | 29.76 | 755.9 | 50 | 10.0 | 90 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | N | 0.02 | 0.5 | Cloudy | |
| La Crosse, Wisconsin | 29.44 | 747.8 | 30.21 | 767.3 | 33 | 0.6 | 61 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| La Mesilla, New Mexico | 25.96 | 659.4 | 30.11 | 764.8 | 45 | 7.2 | 39 | Calm | 0 | 0 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.55 | 750.6 | 29.89 | 759.2 | 65 | 18.3 | 49 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.26 | 743.2 | 30.12 | 765.0 | 41 | 5.0 | 65 | NE | 14 | 6.3 | ..... | 0 | 4ks | ..... | NE | 0.01 | 0.3 | Fair | |
| Los Angeles, California | 29.49 | 749.0 | 29.83 | 757.7 | 45.0 | 7.2 | 72 | W | 6 | 2.7 | ..... | 0 | 4s | ..... | W | Inap. | Inap. | Fair | |
| Louisville, Kentucky | 29.30 | 744.2 | 29.86 | 758.4 | 47 | 8.3 | 85 | N | 7 | 3.1 | ..... | ..... | 10s | ..... | N | 0.11 | 2.8 | Cloudy | |
| Lynchburg, Virginia | 28.99 | 736.3 | 29.65 | 753.1 | 55 | 12.8 | 61 | NW | 2 | 0.9 | ..... | 0 | 8s | ..... | Calm | 0.12 | 3.0 | Cloudy | |
| Madison, Wisconsin | 29.14 | 740.1 | 30.17 | 766.3 | 32 | 0.0 | 69 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.29 | 7.4 | Clear | |
| Marquette, Michigan | 29.51 | 749.5 | 30.25 | 768.3 | 29 | — 1.7 | 67 | NW | 6 | 2.7 | ..... | 5ck | 0 | N | ..... | 0 | 0 | Fair | |
| Mason, Texas | 28.42 | 721.9 | 30.20 | 767.1 | 50 | 10.0 | 65 | NW | 2 | 0.9 | ..... | 1cs | 0 | NW | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.66 | 753.4 | 29.98 | 761.5 | 53 | 11.7 | 68 | N | 7 | 3.1 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Milwaukee, Wisconsin | 29.38 | 746.2 | 30.13 | 765.3 | 36 | 2.2 | 61 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.14 | 3.6 | Clear | |
| Mobile, Alabama | 29.88 | 758.9 | 29.92 | 760.0 | 58.5 | 14.7 | 37 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.62 | 752.3 | 29.85 | 758.2 | 56 | 13.3 | 61 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.69 | 728.7 | 29.75 | 755.6 | 36 | 2.2 | 80 | N | 14 | 6.3 | ..... | ..... | 10ks | ..... | Calm | 0.56 | 14.2 | Cloudy | |
| Mt. Washington, N. H. | 23.14 | 587.8 | 29.50 | 749.3 | 14 | —10.0 | 100 | NE | 54 | 24.1 | ..... | ..... | 10n | ..... | NE | 1.18 | 30.0 | Light snow | |
| Nashville, Tennessee | 29.33 | 745.0 | 29.86 | 758.4 | 48 | 8.9 | 85 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.06 | 1.5 | Cloudy | |
| New Haven, Connecticut | 29.46 | 748.3 | 29.57 | 751.1 | 37 | 2.8 | 63 | N | 10 | 4.5 | ..... | 5ck | 2s | W | Calm | 1.32 | 33.5 | Fair | |
| New London, Connecticut | 29.47 | 748.5 | 29.52 | 749.8 | 36 | 2.2 | 71 | N | 10 | 4.5 | ..... | ..... | 9s | ..... | N | 2.03 | 51.6 | Clearing | |
| New Orleans, Louisiana | 29.88 | 758.9 | 29.94 | 760.5 | 60 | 15.6 | 49 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.46 | 748.3 | 29.51 | 749.5 | 36 | 2.2 | 71 | NW | 14 | 6.3 | ..... | ..... | 10s | ..... | NW | 2.63 | 66.8 | Cloudy | |
| New York, New York | 29.44 | 747.8 | 29.64 | 752.1 | 38 | 3.3 | 90 | NW | 6 | 2.7 | ..... | ..... | 10ks | ..... | NW | 0.99 | 25.1 | Cloudy | |
| Norfolk, Virginia | 29.54 | 750.6 | 29.60 | 751.8 | 54 | 12.2 | 87 | N | 5 | 2.2 | ..... | 1ck | 5s | W | W | 0.72 | 18.3 | Fair | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.19 | 690.6 | 29.88 | 758.9 | 28 | — 2.2 | 100 | Calm | 0 | 0 | ..... | 2c | Fog | W | Calm | 0 | 0 | Foggy | |
| Olympia, Washington Ter. | 30.22 | 767.6 | 30.26 | 768.6 | 33.0 | 0.6 | 95 | SW | 3 | 1.3 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Omaha, Nebraska | 29.01 | 736.8 | 30.14 | 765.5 | 42 | 5.6 | 74 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.41 | 747.0 | 29.74 | 755.4 | 31 | — 0.6 | 89 | NE | 24 | 10.7 | ..... | ..... | 10n | ..... | ..... | 0.14 | 3.6 | Light snow. | |
| Pembina, Dakota | 29.21 | 741.9 | 30.06 | 763.5 | 36 | 2.2 | 100 | Calm | 0 | 0 | ..... | ..... | 10s; fg | ..... | S | 0 | 0 | Cloudy | |
| Philadelphia, Pa | 29.54 | 750.3 | 29.59 | 751.6 | 41 | 5.0 | 82 | NE | 6 | 2.7 | ..... | ..... | 10ks | ..... | NE | 1.45 | 36.8 | Cloudy | |
| Phœnix, Arizona | 28.56 | 725.4 | 30.33 | 770.4 | 57 | 13.9 | 36 | NE | 2 | 0.9 | ..... | 5c | 0 | S | ..... | 0 | 0 | Fair | |
| Pike's Peak, Colorado | 17.71 | 449.8 | 29.92 | 760.0 | 18 | — 7.8 | 22 | SW | 30 | 13.4 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Pioche, Nevada | 23.75 | 603.2 | 29.52 | 749.8 | 45 | 7.2 | 18 | S | 4 | 1.8 | ..... | 5cs | 2s | S | Calm | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 28.97 | 735.8 | 29.80 | 756.9 | 34 | 1.1 | 79 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.07 | 1.8 | Cloudy | |
| Port Huron, Michigan | 29.28 | 743.7 | 29.97 | 761.2 | 30 | — 1.1 | 89 | N | 28 | 12.5 | ..... | 2k | 0 | N | ..... | 0.51 | 13.0 | Clear | |
| Portland, Maine | 29.38 | 746.2 | 29.43 | 747.5 | 32 | 0.0 | 79 | N | 28 | 12.5 | ..... | ..... | 10s | ..... | Calm | 1.00 | 25.4 | Cloudy | |
| Portland, Oregon | 30.23 | 767.8 | 30.33 | 770.4 | 36.0 | 2.2 | 97 | S | 2 | 0.9 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Prescott, Arizona | 24.46 | 621.3 | 29.82 | 757.4 | 47 | 8.3 | 21 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.13 | 739.9 | 29.94 | 760.5 | 58 | 14.4 | 53 | NW | 9 | 4.0 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Punta Rassa, Florida | 29.93 | 760.2 | 29.95 | 760.7 | 72 | 22.2 | 58 | W | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0.12 | 3.0 | Clear | |
| Red Bluff, California | 29.58 | 751.3 | 29.94 | 760.5 | 48 | 8.8 | 49 | NW | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0.43 | 10.9 | Clear | |
| Rio Grande City, Texas | 27.82 | 706.6 | 30.03 | 762.8 | 66 | 18.9 | 84 | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rochester, New York | 29.15 | 740.4 | 29.78 | 756.4 | 30 | — 1.1 | 78 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 0.18 | 4.6 | Cloudy | |
| Roseburg, Oregon | 29.70 | 754.4 | 30.30 | 769.6 | 33.6 | 0.6 | 100 | Calm | 0 | 0 | ..... | 0 | 1s | ..... | Calm | 0.55 | 14.0 | Clear | |
| Sacramento, California | 29.80 | 756.9 | 29.89 | 759.2 | 47.7 | 8.6 | 74 | N | 16 | 7.2 | ..... | 0 | 2ks | ..... | NE | 0.07 | 1.8 | Fair | |
| St. Louis, Missouri | 29.49 | 749.0 | 30.08 | 764.0 | 41 | 5.0 | 74 | N | 16 | 7.2 | ..... | ..... | 10s | ..... | N | 0.03 | 0.8 | Cloudy | |
| St. Marks, Florida | 29.86 | 758.4 | 29.87 | 758.7 | 59 | 15.0 | 65 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 1.71 | 43.4 | Clear | |
| St. Paul, Minnesota | 29.30 | 744.2 | 30.17 | 766.3 | 34 | 1.1 | 51 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.40 | 645.2 | 29.73 | 755.1 | 44 | 6.7 | 52 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.38 | 746.2 | 29.96 | 761.0 | 55 | 12.8 | 39 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.88 | 758.9 | 29.95 | 760.7 | 52 | 11.1 | 54 | W | 21 | 9.4 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.25 | 742.9 | 29.94 | 760.5 | 34 | 1.1 | 70 | N | 25 | 11.2 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Sandy Hook, New Jersey | 29.58 | 751.3 | 29.61 | 752.1 | 37 | 2.8 | 71 | N | 14 | 6.3 | ..... | ..... | 10s | ..... | N | 1.53 | 38.9 | Cloudy | |
| San Francisco, California | 29.89 | 759.2 | 29.96 | 761.0 | 48 | 8.8 | 60 | NW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0.24 | 6.1 | Clear | |
| Santa Fé, New Mexico | 23.20 | 589.3 | 29.74 | 755.4 | 51 | 10.6 | 4 | E | 8 | 3.6 | ..... | 2cs | ..... | SW | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.67 | 753.6 | 29.76 | 755.9 | 65 | 18.3 | 54 | W | 11 | 4.9 | ..... | 0 | Faze | ..... | Calm | 0.01 | 0.3 | Clear | |
| Shreveport, Louisiana | 29.78 | 756.4 | 30.00 | 762.0 | 56 | 13.3 | 63 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Silver City, New Mexico | 24.18 | 614.2 | 30.42 | 772.6 | 39 | 3.9 | 72 | E | 2 | 0.9 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Smithville, North Carolina | 29.62 | 752.3 | 29.66 | 753.4 | 60 | 15.6 | 77 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Springfield, Massachusetts | 29.45 | 748.0 | 29.58 | 751.3 | 35 | 1.7 | 70 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | N | 0.70 | 17.8 | Cloudy | |
| Stockton, Texas | 26.92 | 683.8 | 29.92 | 760.0 | 55 | 12.8 | 39 | SE | 11 | 4.9 | ..... | 9 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.39 | 746.5 | 29.45 | 748.0 | 35 | 1.7 | 61 | NE | 38 | 17.0 | ..... | ..... | 10s | ..... | N | 2.21 | 57.1 | Cloudy | |
| Toledo, Ohio | 29.26 | 743.2 | 29.96 | 761.0 | 35 | 1.7 | 61 | NE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Tucson, Arizona | 27.33 | 694.2 | 29.88 | 758.9 | 55 | 12.8 | 38 | E | 1 | 0.4 | ..... | 8cs | 0 | S | ..... | 0 | 0 | Cloudy | |
| Umatilla, Oregon | 29.90 | 759.4 | 30.42 | 772.6 | 34.0 | 1.1 | 90 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 28 | — 2.2 | 88 | W | ..... | ..... | 7 | ..... | 10s | ..... | W | 0.21 | 5.3 | Cloudy | |
| Uvalde, Texas | 29.14 | 740.1 | 29.96 | 761.0 | 55 | 12.8 | 45 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.71 | 754.6 | 29.97 | 761.2 | 56 | 13.3 | 46 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Virginia City, Montana | 24.18 | 614.2 | 29.66 | 753.4 | 37 | 2.8 | 63 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Visalia, California | 29.49 | 749.0 | 29.87 | 758.7 | 43.5 | 6.4 | 89 | NW | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.28 | 7.1 | Cloudy | |
| Washington, D. C. | 29.48 | 748.8 | 29.59 | 751.6 | 52.5 | 11.4 | 73 | W | 2 | 0.9 | ..... | ..... | 10s | ..... | SW | 0.40 | 10.2 | Cloudy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 60 | 10.0 | 45 | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 29.56 | 750.8 | 29.64 | 752.8 | 59 | 15.0 | 70 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.50 | 647.7 | 29.86 | 758.4 | 40 | 4.4 | 82 | NE | 15 | 6.7 | ..... | 0 | 2ks | ..... | S | 0.24 | 6.1 | Fair | |
| Wood's Holl, Mass | 29.40 | 746.7 | 29.44 | 747.8 | 36 | 2.2 | 70 | N | 24 | 10.7 | ..... | ..... | 10ks | ..... | NE | 2.05 | 52.1 | Cloudy | |
| Yankton, Dakota | 28.88 | 733.5 | 30.22 | 767.6 | 32 | 0.0 | 79 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Dense fog | |
| Yuma, Arizona | 29.59 | 751.6 | 29.75 | 755.6 | 60 | 15.6 | 44 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.45 | 722.6 | 29.87 | 758.7 | 46 | 7.8 | 76 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba. W. I | 29.93 | 760.2 | 29.98 | 761.5 | 77 | 25.0 | 76 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.24 | 641.1 | ..... | ..... | 65.0 | 18.3 | 87 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.35 | 8.9 | ..... | Thomas Herran. |
| Nassau, W. I | 29.90 | 759.4 | 29.98 | 761.5 | 78 | 25.6 | ..... | NE | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | Inap. | Inap. | Partly cl'dy. | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.02 | 762.5 | 30.03 | 762.8 | 79 | 26.1 | 91 | E | ..... | ..... | 2 | 5ck | 5k | E | ..... | 0.120 | 3.05 | ½ clouded | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | 30.10 | 764.5 | 30.15 | 765.8 | 11.0 | —11.7 | 90 | NE | 9 | 4.0 | ..... | 0 | 1s | ..... | E | 0 | 0 | Fair | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m., Jacksboro, 1,120 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City. 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.556 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.87 | 758.7 | 45 | 7.2 | 43 | 6.1 | 83 | NW | 8 | 3.6 | ..... | ..... | 2cs | ..... | SW | 0.054 | 1.37 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 29.97 | 761.2 | 61 | 16.1 | 61 | 16.1 | 55 | NNW | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear. ..... | |
| Navy Yard, Portsmouth, N.H | 29.48 | 748.8 | 54 | 12.2 | 32 | 0.0 | 81 | NNE | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Naval Hospital, Yokohama, Japan.....* | 30.21‡ | 767.3‡ | ..... | ..... | 43 | 6.1 | 46 | NNE | ..... | ..... | 3 | ..... | 10ks | ..... | SSW | 0.14 | 3.6 | ..... | ..... | Cloudy..... | |
| Adams, Panama .....* | 29.96 | 761.0 | 79 | 26.1 | 78 | 25.6 | 95 | NW | ..... | ..... | 2 | ..... | 5 | ..... | NW | ..... | ..... | ..... | ..... | Fair ..... | |
| Alaska, Sitka, Alaska..... | 29.31‡ | 744.5‡ | ..... | ..... | 36 | 2.2 | 73 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.45 | 11.4 | ..... | ..... | Raining..... | |
| Alliance, Naples, Italy..... | 29.73‡ | 755.1‡ | ..... | ..... | 59 | 15.0 | 82 | WSW | ..... | ..... | 1–2 | ..... | 10 | ..... | S;W | ..... | ..... | Light | W | Rainy ..... | |
| Ashuelot, Hong-Kong, China. ..* | 30.09‡ | 764.3‡ | ..... | ..... | 64 | 17.8 | 73 | ENE | ..... | ..... | 3 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Overcast..... | |
| Canonicus, New Orleans, La.....* | 29.91 | 759.7 | 46 | 7.8 | 60 | 15.6 | 55 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Colorado, New York, N. Y..... | 29.52 | 749.8 | 40 | 4.4 | 39 | 3.9 | 100 | NNW | 5 | 2.2 | ..... | ..... | 10 | ..... | NNW | 1.46 | 37.1 | ..... | ..... | Cloudy..... | |
| Constitution N. 38° 19′, W. 9° 43′..... | 30.11‡ | 764.8‡ | ..... | ..... | 56 | 13.3 | 89 | NW | ..... | ..... | 4 | ..... | 2 | ..... | N | ..... | ..... | Mod'ate | N | Clear..... | |
| Despatch, Genoa, Italy..... | 29.68‡ | 751.3‡ | ..... | ..... | 63 | 17.2 | 57 | WNW | ..... | ..... | 2 | ..... | 5 | ..... | SE | ..... | ..... | Smooth | ..... | Fair ..... | |
| Franklin, Norfolk, Va.....* | 29.71 | 754.6 | 68 | 20.0 | 56 | 13.3 | 87 | NNW | 7.4 | 3.3 | ..... | ..... | 5 | ..... | SW | 0.9 | 23. | ..... | ..... | Fair..... | |
| Gettysburg, Genoa, Italy .....* | 29.63‡ | 752.6‡ | ..... | ..... | 58 | 14.4 | 82 | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Hartford, Montevideo, Uruguay.* | 30.06 | 763.5 | 66 | 18.9 | 65 | 18.3 | 73 | NNW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair ..... | |
| Michigan, Erie, Pa.....† | 29.90‡ | 759.4‡ | ..... | ..... | 31 | — 0.6 | 89 | NE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Monocacy, Shanghai, China.....* | 30.40‡ | 772.1‡ | ..... | ..... | 46 | 7.8 | 77 | SE | ..... | ..... | 1 | ..... | 10 | ..... | SE | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Monongahela Yokohama, Japan .....* | 30.20‡ | 767.1‡ | ..... | ..... | 47 | 8.3 | 43 | N | ..... | ..... | 3 | ..... | 10 | ..... | ..... | Very light | Very light | ..... | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C.....* | 29.80 | 756.9 | 63 | 17.2 | 64 | 17.8 | 53 | W | 15 | 6.7 | ..... | ..... | 2 | ..... | W | 0 | 0 | ..... | ..... | Clear..... | |
| Onward, Callao, Peru.....†* | 30.04 | 763.0 | ..... | ..... | 65 | 18.3 | 94 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Cloudy ..... | |
| Palos, Tientsin, China.....* | 30.41 | 772.4 | 75 | 23.9 | 42 | 5.6 | 83 | SSE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 54 | 12.2 | 87 | SSW | ..... | ..... | 3 | ..... | 8 | ..... | SE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Pensacola. Iquique, Peru..... | 29.98‡ | 761.5‡ | ..... | ..... | 67 | 19.4 | 60 | Calm | 0 | 0 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | Smooth | ..... | Cloudy . ..... | |
| Plymouth. Portsmouth, N. H..... | 29.50‡ | 749.3‡ | ..... | ..... | 34 | 1.1 | 90 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Powhatan, Norfolk, Va..... | 29.67‡ | 753.6‡ | ..... | ..... | 56 | 13.3 | 81 | WSW | ..... | ..... | 0–1 | ..... | 2 | ..... | ..... | 0.04 | 1.0 | ..... | ..... | Clear..... | |
| Quinnebaug, Tangier, Morocco..... | 30.04‡ | 763.0‡ | ..... | ..... | 59 | 15.0 | 65 | WNW | ..... | ..... | 4 | ..... | 5 | ..... | WNW | ..... | ..... | ..... | ..... | Fair .... ..... | |
| Ranger. Amoy, China.....* | 30.22‡ | 767.6‡ | ..... | ..... | 61 | 16.1 | 71 | NE | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Overcast..... | |
| Richmond, N. 9° 10′, E. 72° 48′..... | 29.81‡ | 757.2‡ | ..... | ..... | 85 | 29.4 | 72 | NW | ..... | ..... | 2 | ..... | 2 | ..... | NW | 0 | 0 | Smooth | ..... | Fair ..... | |
| Rio Bravo, Brownsville, Texas..... | 30.00 | 762.0 | 66 | 18.9 | 67 | 19.4 | 95 | SE | ..... | ..... | 1 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear ..... | |
| Santee, Annapolis, Md... ..... | 29.59‡ | 751.6‡ | ..... | ..... | 50 | 10.0 | 93 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.05 | 1.3 | ..... | ..... | Overcast..... | |
| Saratoga, N. 38° 18′, W. 51° 22′... | 30.26‡ | 768.6‡ | ..... | ..... | 61 | 16.1 | 71 | S | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | D. clouds..... | |
| St. Louis, League Island, Pa..... | 29.56‡ | 750.8‡ | ..... | ..... | 46 | 7.8 | 77 | N | 1 | 0.4 | ..... | ..... | 10 | ..... | NNW | 1.37 | 34.8 | ..... | ..... | Misty..... | |
| Supply, New York, N. Y..... | 29.62‡ | 752.3‡ | ..... | ..... | 39 | 3.9 | 91 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | NNW | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Trenton Genoa, Italy.....*..... | 29.55‡ | 750.6‡ | ..... | ..... | 68 | 20.0 | 51 | SW | ..... | ..... | 2 | ..... | 5 | ..... | S | 0 | 0 | Smooth | ..... | Fair..... | |
| Tuscarora N. 16° 01′, W. 98° 38′ ...* | 29.91‡ | 759.7‡ | ..... | ..... | 77 | 25.0 | 82 | NW | ..... | ..... | 4 | ..... | 2 | ..... | S;E | 0 | 0 | Smooth | ..... | Hazy..... | |
| Vandalia N 39° 30′, W. 72° 55′....† | 29.76‡ | 755.9‡ | ..... | ..... | 40 | 4.4 | 91 | NW | ..... | ..... | 4 | ..... | 10 | ..... | ESE | ..... | ..... | Rough | S | Cloudy..... | |
| Wabash, Boston, Mass..... | 29.93‡ | 760.2‡ | ..... | ..... | 31 | — 0.6 | 83 | N | 8 | 3.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Wyoming, Jaffa, Syria.....* | 29.96‡ | 761.0‡ | ..... | ..... | 71 | 21.7 | 100 | WNW | ..... | ..... | 1–2 | ..... | 2 | ..... | NW | ..... | ..... | Smooth | NW | Clear..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, Capt. Maury N. 36° 07′, W. 149° 37′ | | 30.34‡ | 770.6‡ | 58 | 14.4 | | SW | | | 6 | | 8ok | | | 0 | Mod'ate | WNW | Cloudy | L. B. Walls. |
| S. S. Colima. N. 7° 09′, W. 80° 33′ †. | | 29.94‡ | 760.5‡ | 80 | 26.7 | | W | | | 2 | | 5 | | E | 0.03 in. or 0.8 mm. | Small | WSW | Misty | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota, Capt. H. G. Morse, N. 46° 53′, W. 124° 50′ †. | | 30.28‡ | 769.1‡ | | | | S | | | 1 | | 4 | | SW | Light | Mod'ate | SW | Fine | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Granada, Capt. Austin. | | | | | | | | | | | | | | | | | | | F. W. Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, S. 34° 10′, E. 165° 55′ | | 29.86‡ | 758.4‡ | | | | ESE | | | 6 | | 6 | | N | | Heavy | W | Fine | R. C. Ghest, 1st Officer |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroi *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, N. 38° 30′, W. 125° 00′ * | | 30.11‡ | 764.8‡ | 51 | 10.6 | 72 | NW | | | 6–7 | | k | | NW | 0 | Cross | Confused | Squally | J. A. Thompson, 2d Off |
| S. S. Gaelic, N. 36° 27′, E. 144° 21′ * | | 30.07‡ | 763.8‡ | 50 | 10.0 | ?? | N | | | 5 | | k | | N | 0 | Swell | S | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, N. 34° 51′, E. 139° 53′ | | 30.42‡ | 772.6‡ | 51 | 10.6 | 93 | NE | | | 3–4 | | 4 | | WNW | | Smooth | | D. clouds | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. §The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 44° 02′, W. 43° 24′ | | 30.22‡ | 767.6‡ | 43.0 | 6.1 | 83 | W | | | 6 | | 8 | | | 0 | Rough | W | Cloudy | Capt. C. Undütsch. |
| S. S. Leipzig, N. 46° 50′, W. 41° 30′ | | 30.03‡ | 762.8‡ | 43.5 | 6.4 | 100 | W | | | 5–6 | | 8 | | WNW | 4 hours | Rough | WNW | Hailing | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, Capt. G. Meyer, Baltimore, Md | | 29.69‡ | 752.6‡ | | | | NE | | | 4 | | 10 | | E | | | | Raining | G. Risius, 3rd Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |

### AMERICAN S. S. CO. MARINE SERIES.

Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Indiana, Philadelphia, Pa. | | 29.68‡ | 753.9‡ | 43 | 6.1 | | NE | | | 3 | | 5 | | N | Heavy. | | | Cloudy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

### RED STAR LINE MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |

### ALLAN LINE MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| Peruvian | | | | | | | | | | | | | | | | | | | |
| N. 39° 00′ W. 72° 00′ | †* | 29.43‡ | 747.4‡ | 45 | 7.2 | 92 | | WSW | | | 4 | | 10 | | WSW | | Mod'ate | SW | Clear | J. Powell, 4th Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

### MARINE SERIES. (Miscellaneous.

Furnished by the cooperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
| Brigantine "George," of Halifax | | | | | | | | | | | | | | | | | | | |
| N. 25° 20′, W. 64° 30′ | †* | 30.09‡ | 764.3‡ | 86? | 30.0? | | ESE | | | | | | | | | Tranquil | | Blue sky | Willard N. Pratt. |

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

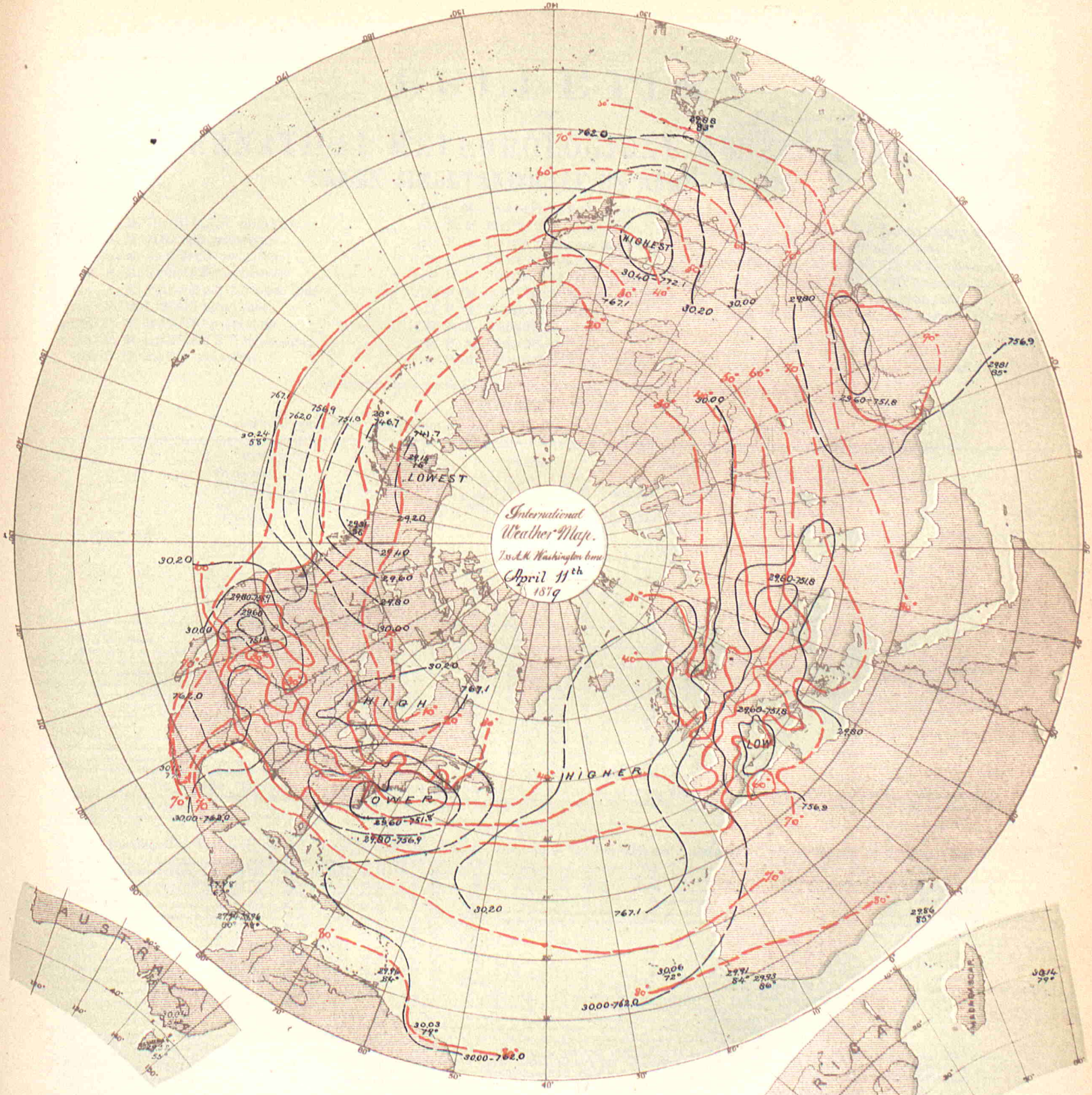
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$.) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING Co. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIOAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 12, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error an. temperature. Inches. | Barometer. Corrected for instrum'tal error an. temperature. Millimeters. | Barometer. Reduced to sea-level'. Inches. | Barometer. Reduced to sea-level'. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | 29.95 | 760.8 | 65.1 | 18.4 | 73 | WNW | | | 3 | | 5 | | | 0 | 0 | Cloudy | Kesxuche. |
| Nemours | | | 29.78 | 756.4 | 60.1 | 15.6 | 62 | W | | | 4 | | 0 | | | 0.60? | 15.4 | Clear | Tourtllere. |
| Algiers | | | 29.76 | 756.0 | 59.4 | 15.2 | 83 | NW | | | 5 | | 8 | | | 0.126 | 3.2 | Very cloudy | Foufre'e. |
| La Calle | | | | | | | | | | | | | | | | | | | Jacques. |
| Tunis | | | | | | | | | | | | | | | | | | | G-u. |
| Sfax | | | 29.77 | 756.2 | | | | | | | | | | | | | | | |
| Saida | | | 29.92 | 760.0 | 46.0 | 7.8 | 80 | W | | | 5 | | 10 | | | 0.248 | 6.3 | Raining | Herbin. |
| Tebessa | | | 29.80 | 757.0 | 49.1 | 9.5 | 56 | W | | | 6 | | 10 | | | 0.016 | 0.4 | Covered | Watrin. |
| Gertville | | | 29.95 | 760.6 | 55.9 | 13.3 | 62 | S | | | 6 | | 10 | | | 0 | 0 | Covered | Brugnlaux. |
| Laghouat | | | 29.90 | 759.5 | 58.6 | 14.8 | 42 | NW | | | 6 | | 2 | | | 0 | 0 | Fair | Bertrand. |
| Biskra | | | 29.86 | 758.4 | 71.1 | 21.7 | 20 | NW | | | 2 | | 2 | | | 0 | 0 | Fair | Chauvaux. |

NOTE.—In the originals the amount of cloudiness is given by the scale 0-4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Gertville, 1,360? m., or 4,462.0? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrum'tal error an. temperature. Inches. | Barometer. Corrected for instrum'tal error an. temperature. Millimeters. | Barometer. Reduced to sea-level'. Inches. | Barometer. Reduced to sea-level'. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 28.93 | 734.7 | 29.47 | 748.4 | 56.8 | 13.8 | 68 | NE | | | 3 | 10 | | | | 0.583 | 14.8 | Raining | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 28.93 | 734.7 | 29.70 | 754.3 | 46.0 | 7.8 | 69 | E | | | 4 | 10 | | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 28.74 | 730.0 | 29.62 | 752.3 | 48.2 | 9.0 | 73 | N | | | 2 | 10s | | | | 0 | 0 | | Julius Mikolik. |
| Gr tz | 28.28 | 718.3 | 29.51 | 749.6 | 54.0 | 12.2 | 81 | SE | | | 2 | 8 | | | | 0.472 | 12.0 | | Andreas Rospini. |
| Hermannstadt | 28.14 | 714.7 | 29.50 | 749.3 | 69.4 | 20.8 | 30 | E | | | 3 | 9 | | | | 0 | 0 | | Prof. A. Gottschling. |
| Kremsmünster | 28.18 | 715.7 | 29.62 | 749.7 | 45.7 | 7.6 | 86 | ENE | | | 2 | 10 | | | | 0.071 | 1.8 | | Prof. C. Wagner. |
| Lemberg | 28.74 | 730.0 | 29.75 | 755.6 | 38.5 | 3.6 | 87 | SE | | | 1 | 10 | | | | 0.201 | 5.1 | | Dr. T. Stanecki. |
| Pola | 29.30 | 744.2 | 29.41 | 747.0 | 57.6 | 14.2 | 76 | WNW | | | 2 | 4 | | | | 0.335 | 8.5 | | I.R.Hydrographic Office |
| Szathmar | 29.07 | 738.3 | 29.52 | 749.8 | 60.8 | 16.0 | 71 | NE | | | 1 | 10 | | | | 0.118 | 3.0 | | Julius Osies, S. J. |
| Szegedin | 29.23 | 742.5 | 29.51 | 749.6 | 52.3 | 11.3 | 91 | S | | | 1 | 10 | | | | 0.177 | 4.50 | | Karl Stanecl. |
| Trieste | 29.33 | 745.0 | 29.43 | 747.6 | 60.8 | 16.0 | 60 | E | | | 1 | 4 | | | | 0.138 | 3.5 | Rainy | P. Busin. |
| Vienna | 28.81 | 732.6 | 29.56 | 750.9 | 46.8 | 8.2 | 96 | ENE | | | 1 | 10 | | | | 0.642 | 16.3 | | I. R. Central Met. Obs'y |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels

| STATIONS. | Barometer. Corrected for instrum'tal error an. temperature. Inches. | Barometer. Corrected for instrum'tal error an. temperature. Millimeters. | Barometer. Reduced to sea-level'. Inches. | Barometer. Reduced to sea-level'. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | 9 | | N | | 0 | 0 | | Prof. M. Passau. |
| Brussels | 29.67 | 753.6 | 29.87 | 758.8 | 36.9 | 2.7 | 55 | WNW | | | 1 | 10 | | | | 0.028 | 0.7 | Heavy snow | Royal Observatory. |
| Furnes | 29.90 | 759.4 | 29.92 | 760.0 | 37.6 | 3.1 | 81 | NW | | | 4 | 7 | | | | 0 | 0 | | M. E. de Cae. |
| Maeseyck | 29.74 | 755.4 | 29.87 | 758.6 | 37.9 | 3.3 | 88 | NNW | | | 0 | | | | | | | | M. Pierrot. |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

**Entered at the Post Office at Washington, D. C., as Second-Class Matter.**

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0-10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.93 | 760.2 | 30.03 | 762.8 | 38.7 | 3.7 | ..... | E | 15 | 6.7 | ..... | ..... | 4 | ..... | ..... | 0.105 | 2.67 | Blue sky..... | W. Boswell. |
| Ardrossan | ..... | ..... | ..... | ..... | 42 | 5.6 | ..... | NNE | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.96 | 761.0 | 42.5 | 5.8 | ..... | NE | 12 | 5.4 | ..... | ..... | 9 | ..... | ..... | Blank | Blank | Overcast..... | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.88 | 758.9 | 34.8 | 1.6 | ..... | NE | 9 | 4.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.84 | 757.9 | 39.5 | 4.2 | ..... | ENE | 18 | 8.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Thomas Mackereth. |
| Bradford, Yorkshire | 29.48 | 748.8 | 29.87 | 758.7 | 41.3 | 5.2 | ..... | E | ..... | ..... | 6 | ..... | 4 | ..... | ..... | 0 | 0 | D. clouds.... | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.94 | 760.5 | 29.97 | 761.2 | 84 | 28.9 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.86 | 758.4 | 38.0 | 3.3 | ..... | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | H. Todd. [C. |
| Cardington | ..... | ..... | 29.85 | 758.2 | 41.0 | 5.0 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Blank | Blank | Snowing..... | John McLaren. |
| Chatham, School M. E. | 29.77 | 756.1 | 29.91 | 759.7 | 35.2 | 1.8 | ..... | NW | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.39 | 721.1 | 29.91 | 759.7 | 35.2 | 1.8 | ..... | NW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | Squally..... | Alexander Watt. |
| Donaghadee | 29.90 | 759.4 | 29.95 | 760.7 | 41 | 5.0 | ..... | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | J. Mac Gowan. |
| Dover | 29.84 | 757.9 | 29.86 | 758.4 | 40 | 4.4 | ..... | SE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded.. | J. Costello. |
| Falmouth, Observatory | 29.72 | 754.9 | 29.95 | 760.7 | 45.0 | 7.2 | ..... | W | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.63 | 701.8 | 29.95 | 760.7 | 72.4 | 22.4 | ..... | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.66 | 753.4 | 29.90 | 759.4 | 87 | 30.6 | ..... | E? | ..... | ..... | 0? | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds.... | |
| Galway, Queen's college | ..... | ..... | 29.90 | 759.4 | 47 | 8.3 | ..... | NNW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 29.96 | 761.0 | 30.01 | 762.2 | 60.2 | 15.7 | ..... | W | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.76 | 755.9 | 29.97 | 761.2 | 41.9 | 5.5 | ..... | E | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | D. G. Maclean. [C. |
| Great Yarmouth | 29.89 | 759.2 | 29.89 | 759.2 | 38 | 3.3 | ..... | NE | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.71 | 754.6 | 29.88 | 758.9 | 40.7 | 4.8 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The staff, for G.B. Airy. |
| Guernsey | 29.73 | 755.1 | 29.98 | 761.5 | 43.5 | 6.4 | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | Dr. S.E.Hoskins, F.R.S. |
| Helston | 29.97 | 761.2 | 30.09 | 764.3 | 49 | 9.4 | ..... | SW | ..... | ..... | 2 | ..... | 2ck | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 29.82 | 757.4 | 29.87 | 758.7 | 40 | 4.4 | ..... | ENE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | John Tilston. |
| Jersey | 29.69 | 754.1 | 29.98 | 761.5 | 40.3 | 4.6 | ..... | SW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy ..... | J. Fisher. |
| Kew, Observatory | 29.84 | 757.9 | 29.88 | 758.9 | 41.0 | 5.0 | ..... | SW | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | Threatening | The Meteorological Of. |
| Leicester, Museum | 29.59 | 751.6 | 29.85 | 758.2 | 34.5 | 1.4 | ..... | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.42 | 747.2 | 29.50 | 749.3 | 68 | 20.0 | ..... | NW | ..... | ..... | 1 | ..... | 4k | ..... | ..... | ..... | ..... | D. clouds.... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.95 | 760.7 | 30.04 | 763.0 | 44 | 6.7 | ..... | NE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Clear..... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 29.96 | 761.0 | 76.0 | 24.4 | ..... | NW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 29.69 | 754.1 | 29.89 | 759.2 | 33.3 | 0.7 | ..... | N | ..... | ..... | 1 | ..... | 10ck | ..... | N | 0.067 | 1.70 | Snowing..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.32 | 744.7 | 29.86 | 758.4 | 35.0 | 1.7 | ..... | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.95 | 760.7 | 34 | 1.1 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling..... | H. E. Bellamy. |
| Plymouth | 29.84 | 757.9 | 29.92 | 760.0 | 46.2 | 7.9 | ..... | WSW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | John Merrifield. |
| Roche's Point | 29.90 | 759.4 | 29.98 | 761.5 | 45 | 7.2 | ..... | NNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. Kennedy, |
| Saint Ann's Head | 29.72 | 754.9 | 29.88 | 758.9 | 42 | 5.6 | ..... | WNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 41.2 | 5.1 | ..... | ENE | 15 | 6.7 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | Rev C.Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.52 | 749.8 | 29.58 | 751.3 | 84.4 | 29.1 | ..... | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | W. H. Lyne. |
| Sheffield | 29.60 | 751.8 | 29.88 | 758.9 | 36.2 | 2.3 | ..... | NE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds.... | W. F. Cooper. |
| Silloth Rectory | 29.89 | 759.2 | 29.92 | 760.0 | 39.0 | 3.9 | 87 | SE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.110 | 2.79 | Snowing..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.48 | 748.8 | 29.88 | 758.9 | 41.0 | 5.0 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.72 | 754.9 | 29.94 | 760.5 | 38.9 | 3.8 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | C. H. Griffith, F. M. S. |
| Thurso | 30.02 | 762.5 | 30.08 | 764.0 | 46 | 7.8 | ..... | NNE | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | John Trotter. |
| Truro, Royal Institution | 29.89 | 759.2 | 29.95 | 760.7 | 48 | 8.9 | ..... | W | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | 30.00 | 762.0 | 30.02 | 762.5 | 45.3 | 7.4 | ..... | NNE | 5 | 2.2 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | The Meteorological Of. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.11 | 764.8 | 30.15 | 765.8 | 71.3 | 21.8 | 56 | SE | 9 | 4.0 | ..... | 0 | 1 | ..... | ..... | 0 | 0 | Fine..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.02 | 762.5 | 43.0 | 6.1 | 87 | S | ..... | ..... | 3 | ..... | 10k | ..... | ..... | 0 | 0 | Squally..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 30.01 | 762.2 | 39.1 | 3.9 | ..... | E | ..... | ..... | 3 | ..... | 2k | ..... | ..... | 0.19 | 4.8 | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.92 | 760.0 | 30.10 | 764.6 | 77.9 | 25.5 | 73 | SE | 18.0 | 8.0 | ..... | 4 | 4 | ..... | ESE | 0.10 | 2.5 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 30.18 | 766.6 | 30.27 | 768.8 | 51.0 | 10.6 | 53 | S | 20 | 8.9 | ..... | ..... | 8 | ..... | ..... | 0.22 | 5.6 | Showery..... | R. L. J. Ellery. |
| MonachLt-house, (Hebrides) | ..... | ..... | 30.05 | 763.3 | 45 | 7.2 | ..... | NE | ..... | ..... | 6 | 0 | 5 | NE | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.10 | 764.5 | 40 | 4.4 | ..... | E | ..... | ..... | 2 | 0 | 2 | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

## British Marine Series.

| Vessels | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0-10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 45′, E. 29° 55′ | ..... | ..... | 29.66‡ | 753.4‡ | 81.5 | 27.5 | ..... | ENE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle-Isle, N. 49° 33′, W. 9° 38′ | ..... | ..... | 29.90‡ | 759.4‡ | 48 | 8.9 | ..... | ESE | ..... | ..... | 5 | ..... | 9 | ..... | ..... | 3 | NNE | Overcast..... | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole, N. 47° 42′, W. 11° 04′ | ..... | ..... | 29.77‡ | 756.1‡ | 50 | 10.0 | ..... | SSE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Capt. E. W. Turner, |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W.R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity Miles per hour. | WIND. Velocity Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 10sd | ..... | ..... | NE | 0 | 0 | ..... | Mr. Ansart. |
| San José | 26.27 | 667.2 | 29.99 | 761.7 | 70.7 | 21.5 | ..... | Calm | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The elevation of San José is 1,145 meters, or 3,756.6 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.92 | 759.9 | 29.97 | 761.1 | 36.1 | 2.3 | 79 | E | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Fanõe | 29.93 | 760.2 | 29.95 | 760.7 | 28.2 | — 2.1 | 94 | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | |
| Godthaab, (Greenland) | 30.16 | 766.1 | 30.21 | 767.2 | 36.0 | 2.2 | 75 | NNE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Farõe) | 30.17 | 766.3 | 30.21 | 767.2 | 43.5 | 6.4 | 57 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | |
| Vestervig | 29.78 | 756.4 | 29.95 | 760.7 | 29.7 | — 1.3 | 82 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.43 | 747.5 | 29.98 | 761.5 | 41.4 | 5.2 | 71 | N | ..... | ..... | 1 | ..... | 10 | ..... | S | 0 | 0 | Covered..... | Collignon, Director. |
| Amiens, Normal School | 29.87 | 758.6 | 29.98 | 761.4 | 53.2 | 11.8 | 78 | NNW | ..... | ..... | 3 | ..... | 5 | ..... | NE | 0 | 0 | Cloudy..... | Bonvallet, Director |
| Avignon, Normal School | 29.57 | 751.0 | 29.65 | 753.0 | 48.2 | 9 | 66 | N | ..... | ..... | 6 | ..... | n | ..... | N | 0 | 0 | ..... | M. Giraud, Director |
| Bar-sur-Seine | 29.30 | 744.1 | 29.87 | 758.7 | 37.4 | 3.0 | ..... | NE | ..... | ..... | 1 | ..... | 8kn | ..... | NE | Inap. | Inap. | Very cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.63 | 752.6 | 29.90 | 759.5 | 40.6 | 4.8 | 56 | NNW | ..... | ..... | 2 | ..... | 8 | ..... | NW | 0 | 0 | Very cloudy | Frere Eugene Marie, Dr |
| Besançon, Normal School | 28.92 | 734.7 | 29.85 | 758.1 | 37.4 | 3 | 88 | N | ..... | ..... | 2 | ..... | 10 | ..... | NW | 0.035 | 0.9 | Covered..... | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.97 | 735.9 | 29.87 | 758.6 | 36.0 | 2.2 | 93 | N | ..... | ..... | 3 | ..... | 10kn | N | N | 0 | 0 | Covered..... | M. Marlot, Director. |
| Bourges, Normal School | 29.33 | 744.9 | 29.89 | 759.3 | 40.1 | 4.5 | 88 | NE | ..... | ..... | 3 | ..... | k | NE | NE | 0 | 0 | ..... | A. Waquet, Director |
| Brest, Naval Observatory | 29.74 | 755.5 | 29.91 | 759.7 | 45.7 | 7.6 | 69 | SE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | 0 | 0 | ..... | M. de Rermaree, Director |
| Carcassonne, Normal School | 29.08 | 738.6 | 29.50 | 749.2 | 48.6 | 9.2 | 60 | W | ..... | ..... | 6 | ..... | 2 | W | W | 0 | 0 | Slightly cl'dy | September, Director. |
| Caen, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Lair, Director. |
| Chartres, Normal School | 29.41 | 746.9 | 29.99 | 761.7 | 38.1 | 3.4 | 95 | N | ..... | ..... | 1 | ..... | 10 | ..... | N | 0.12 | 3. | Covered..... | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.50 | 749.2 | 29.83 | 757.6 | 38.3 | 3.5 | 41 | NE | ..... | ..... | 3 | ..... | 8 | NE | NE | ..... | ..... | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.46 | 722.8 | 29.86 | 758.3 | 37.4 | 3.0 | 47 | N | ..... | ..... | 2 | ..... | 8 | ..... | N | 0.165 | 4.2 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.96 | 735.5 | 29.85 | 758.1 | 34.2 | 1.2 | 78 | NW | ..... | ..... | 1 | ..... | 2kn | ..... | NW | 0 | 0 | Slightly cl'dy | Dr. Coulet, Director |
| Commune de Gréasque* | 28.41 | 721.5 | 29.55 | 750.5 | 48.7 | 9.3 | 54 | NW | ..... | ..... | 4 | ..... | 2 | ..... | NW | 0 | 0 | ¼ covered... | M. Kina, Director. |
| Grenoble, Normal School | 28.93 | 734.9 | 29.72 | 755.0 | 54.3 | 12.4 | 79 | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.098 | 2.50 | Rain & snow | M. Ablard, Director |
| La Roche-sur-Yon, N. School | 29.77 | 756.2 | 29.99 | 761.8 | 45.3 | 7.4 | 57 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | Mouillot, Director |
| Le Mans, Normal School | 29.62 | 752.4 | 29.94 | 760.4 | 39.4 | 4.1 | 52 | N | ..... | ..... | 3 | ..... | 5 | ..... | N | 0 | 0 | Cloudy..... | Poirrier, Director |
| Lons-Le-Saulnier, N. School | 28.91 | 734.4 | 29.84 | 758.0 | 35.6 | 2.0 | 61 | N | ..... | ..... | 2 | ..... | 8n | ..... | N | 0 | 0 | Very cloudy | Baudry, Director. |
| Lorient, Naval Observatory | 29.90 | 759.4 | 30.00 | 762.0 | 47.8 | 8.8 | 53 | SSE | ..... | ..... | 2 | ..... | ..... | ..... | E | 0 | 0 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Marseilles, Observatory | ..... | ..... | 29.54 | 750.3 | 49.8 | 9.9 | 25 | NW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | Clear. ..... | The Staff |
| Mirecourt, Normal School | 28.70 | 728.9 | 29.76 | 755.9 | 36.1 | 2.3 | 64 | NW | ..... | ..... | 4 | ..... | 5 | ..... | NW | 0.228 | 5.8 | Cloudy..... | M. Barbier, Director. |
| Nîmes, Normal School | 29.42 | 747.2 | 29.62 | 752.4 | 52.2 | 11.2 | 84 | N | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | Boyer, Director. |
| Privas, Normal School | 28.68 | 728.4 | 29.77 | 756.2 | 38.3 | 3.5 | 76 | N | ..... | ..... | 4 | ..... | ..... | N | N | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.82 | 630.3 | ..... | ..... | 16.9 | — 8.4 | 100 | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.492 | 12.5 | Cloudy..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.94 | 760.5 | 29.97 | 761.3 | 49.1 | 9.5 | 43 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | Lt. Decante, Director. |
| Rouen, Normal School | 29.84 | 757.8 | 29.92 | 760 0 | 41.5 | 5.3 | 39 | NW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0.008 | 0.2 | Cloudy..... | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.92 | 759.9 | 29.95 | 760.7 | 39.6 | 4.2 | 55 | N | ..... | ..... | 2 | ..... | 1 | ..... | N | 0 | 0 | Clear. ..... | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.76 | 755.8 | 29.92 | 760.0 | 42.4 | 5.8 | 50 | N | ..... | ..... | 2 | ..... | ..... | ..... | N | 0 | 0 | Light snow. | E. Renou, Director. |
| Tarbes, Normal School | 28.64 | 727.5 | 29.72 | 754.8 | 53.6 | 12 | 65 | S | ..... | ..... | 2 | ..... | 2 | SW | W | 0 | 0 | Slightly cl'dy | P. Huguet, Director |
| Toulouse, Observatory | 29.19 | 741.3 | 29.91 | 759.6 | 39.9 | 4.4 | 77 | NW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | Inap | Inap. | ..... | M. Mercadier Julier. |
| Versailles Observatory | 29.43 | 747.4 | 29.92 | 759.9 | 38.5 | 3.6 | 47 | NE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | 29.13 | 740.0 | 29.86 | 758.3 | 48.2 | 9 | 48 | N | ..... | ..... | 3 | ..... | 5 | ..... | N | 0 | 0 | Cloudy..... | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.82 | 757.5 | 29.85 | 758.2 | 79.2 | 26.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchesi. |
| Lyons Obs'y, (Park Station) | 29.19 | 741.5 | 29.82 | 757.4 | 39.2 | 4.0 | 52 | N | ..... | ..... | 2 | ..... | 9 | ..... | NNE | 0.071 | 1.8 | Covered..... | Mr. Jays. |
| Mont-Louis | 24.47 | 621.6 | 29.79 | 756.6 | 35.6 | 2.0 | 53 | N | 15.0 | 6.7 | ..... | ..... | 2 | ..... | WNW | 0.020 | 0.5 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.48 | 748.7 | 63.5 | 17.5 | 71 | E | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Light rain... | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.64 | 752.8 | ..... | ..... | 38.8 | 3.8 | 51 | NW | ..... | ..... | 3 | ..... | 9 | ..... | NNW | 0.004 | 0.1 | Snowy..... | Marié Davy, Director. |
| Perpignan | 29.64 | 752.9 | 29.75 | 755.6 | 48.4 | 9.1 | 48 | NW | 35.3 | 15.8 | ..... | ..... | 1 | ..... | W | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.12 | 561.9 | ..... | ..... | 22.3 | — 5.4 | ..... | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 1.161 | 29.5 | Snowy..... | Gen'l de Nansouty. |
| Tours | 29.79 | 756.6 | 29.98 | 761.6 | 42.1 | 5.6 | 55 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | N | 0 | 0 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.17 | 766.2 | 30.19 | 766.8 | 46.4 | 8.0 | 98 | ESE | 7.4 | 3.3 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Clear. ..... | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
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| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the cooperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.83 | 732.2 | 29.66 | 753.4 | 33.6 | 0.9 | 89 | NW | | | 6 | | 10 | W | | 0.039 | 1.0 | Snowing | Prof. Dr. Hoh. |
| Berlin | 29.62 | 752.3 | 29.79 | 756.7 | 45.5 | 7.5 | 55 | SE | | | 1 | | 10 | | | 0.028 | 0.7 | | Prof. Arndt. |
| Breslau | 29.22 | 742.3 | 29.75 | 755.6 | 44.2 | 6.8 | 58 | ENE | | | 4 | | 9 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.34 | 745.1 | 29.78 | 756.3 | 33.1 | 0.6 | 86 | NNW | | | 1 | | 10 | | | 0.496 | 12.6 | Snowing | Albert Senz. |
| Cassel | 29.22 | 742.2 | 29.82 | 757.5 | 30.2 | — 1.0 | 90 | N | | | 5 | | 10 | NNE | | 0.021 | 0.53 | Snowing | Dr. H. Möhl. |
| Crefeld | 29.69 | 754.1 | 29.85 | 758.2 | 37.4 | 3.0 | 50 | N | | | 4 | | 5k | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.41 | 747.0 | 29.78 | 756.3 | 36.1 | 2.3 | | E | | | 2 | | 10 | | | 0.118 | 3.0 | | Physical Society. |
| Freienwalde on the Oder | 29.77 | 756.2 | 29.81 | 757.2 | 43.7 | 6.5 | 80 | E | | | 4 | | 10ks | | | 0.031 | 0.8 | | Assmann., M. D. |
| Friedrichshafen | 28.26 | 717.7 | 29.74 | 755.3 | 34.6 | 1.1 | 85 | NW | | | 4 | | 10 | NW | | 0.220 | 5.6 | Snowy | M. Wilhelm. |
| Hamburg | 29.79 | 756.7 | 29.87 | 758.6 | 30.2 | — 1.0 | 86 | NE | | | 3 | | 10 | | | 0.079 | 2.0 | Snowing | Captain F. Hegemann. |
| Kiel | 29.86 | 758.5 | 29.88 | 758.9 | 33.3 | 0.7 | 83 | NE | | | 3 | | 10 | | | 0.029 | 0.73 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.83 | 757.6 | 29.91 | 759.7 | 41.0 | 5.0 | 63 | NE | | | 5 | | 8 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 29.85 | 758.1 | 40.1 | 4.5 | | E | | | 2 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.28 | 743.8 | 29.71 | 754.7 | 37.8 | 3.2 | 90 | N | | | 2 | | 10 | | | 0.157 | 4.0 | Sprinkling | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.94 | 760.4 | 29.98 | 761.6 | 41.9 | 5.5 | 49 | E | | | 3 | | 10ck | | | | | | Skalweit. |
| Neufahrwasser | 29.92 | 759.9 | 29.93 | 760.3 | 38.3 | 3.5 | 78 | NE | | | 4 | | 10 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.55 | 750.5 | 29.84 | 758.0 | 40.6 | 4.8 | 56 | NE | | | 8 | | 10 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.26 | 743.1 | 29.83 | 757.7 | 34.2 | 1.2 | 80 | N | | | 3 | | 10 | NNW | | 0.346 | 8.80 | Snowing | Imp. University Observatory. |
| Stuttgart | 28.71 | 729.2 | 29.68 | 753.8 | 34.2 | 1.2 | 92 | NW | | | 3 | | 10 | | | 0.398 | 10.1 | Heavy snow | Prof. Schoder. |
| Treves (Trier) | 29.26 | 734.3 | 29.78 | 756.5 | 36.7 | 2.6 | 57 | NW | | | 6 | | 10 | | | 0.004 | 0.09 | | Prof. Flesch. |
| Weissenburg (Bavaria) | 28.11 | 713.9 | 29.66 | 753.3 | 34.2 | 1.2 | 96 | NNE | 4 | 2 | | | 10 | | | 0.051 | 1.3 | Snow-fog | Dr. Van Bebber. |
| Wustrow, Naval School | 29.84 | 758.0 | 29.87 | 758.6 | 3906 | 4.2 | 79 | ENE | | | 4 | | 9ks | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.22 | 742.2 | 29.60 | 751.8 | 75.2 | 24.0 | | S | | | 3.0 | | | | | | | ½ Clear | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the cooperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.78 | 756.4 | 29.83 | 757.6 | 86.2 | 30.1 | 48 | SW | 13 | 5.8 | | | 0 | | | 0 | 0 | D. clouds | |
| Deesa | 29.24 | 742.6 | 29.69 | 754.2 | 95.8 | 35.4 | 10 | WSW | 6.2 | 2.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.72 | 754.9 | 29.76 | 755.9 | 83.1 | 28.4 | 70 | WNW | 26 | 11.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.78 | 705.5 | 29.71 | 754.7 | 94.2 | 34.6 | 21 | WNW | | | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 28.94 | 735.0 | 29.67 | 753.6 | 85.0 | 29.4 | 41 | NE | 3.2 | 1.4 | | | 3 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.24 | 691.9 | 29.73 | 755.2 | 84.2 | 29.0 | 72 | W | 10 | 4.5 | | | 1 | | | 0 | 0 | D. clouds | |
| Roorkee | 28.74 | 729.9 | 29.61 | 752.0 | 92.6 | 33.7 | 14 | NW | 3.2 | 1.4 | | | 6 | | | 0 | 0 | D. clouds | |
| Agra | 29.07 | 738.3 | 29.61 | 752.0 | 99.6 | 37.6 | 13 | W | | | | | | | | 0 | 0 | | |
| Nagpur | 28.62 | 727.0 | 29.63 | 752.5 | 96.7 | 35.9 | 26 | Calm | 3.3 | 1.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.25 | 742.9 | 29.61 | 752.1 | 96.1 | 35.6 | 37 | WNW | 3.1 | 1.4 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.32 | 744.7 | 29.62 | 752.3 | 98.1 | 36.7 | 18 | NNW | 3.3 | 1.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.39 | 746.5 | 29.56 | 750.9 | 98.2 | 36.8 | 14 | W | 2.9 | 1.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.67 | 702.7 | 29.62 | 752.2 | 92.3 | 33.5 | 25 | NW | 10.2 | 4.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.57 | 751.0 | 29.65 | 753.0 | 89.9 | 33.2 | 56 | S | 4 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.61 | 752.0 | 29.63 | 752.6 | 88.7 | 31.5 | 68 | S | 9.0 | 4.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.29 | 741.7 | 29.58 | 751.2 | 93.9 | 34.4 | 29 | S | 4.3 | 1.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.61 | 752.1 | 29.70 | 754.4 | 84.9 | 29.4 | 79 | SSW | 6.3 | 2.8 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.32 | 744.7 | 29.65 | 753.1 | 81.2 | 27.3 | 70 | NE | 3.5 | 1.6 | | | 10 | W | W | 0 | 0 | D. clouds | |
| Jubbulpore | 28.31 | 719.0 | 29.08 | 752.6 | 92.7 | 33.7 | 20 | Calm | 2.4 | 1.1 | | | 0 | | | 0 | 0 | Blue sky | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,060.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.04 | 737.6 | 29.45 | 748.0 | 60.8 | 16.0 | 44 | E | 1.3 | 0.6 | ..... | ..... | 5 | ..... | ..... | 0.322 | 8.2 | ..... | Prof. Giovanni Clodig. |
| Milan | 28.92 | 734.6 | 29.43 | 747.6 | 57.6 | 14.2 | 66 | SSE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0.579 | 14.7 | ..... | Prof. Schiaparelli. |
| Padua | 29.34 | 745.1 | 29.44 | 747.9 | 57.4 | 14.1 | 63 | NE | 5.6 | 2.5 | ..... | ..... | 6 | SSE | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.53 | 724.7 | 29.43 | 747.6 | 51.6 | 10.9 | 74 | E | 2.5 | 1.1 | ..... | ..... | 8 | SSW | ..... | 0.059 | 1.5 | ..... | Prof. P. F. Denza. |
| Genoa | 29.25 | 743.0 | 29.44 | 747.9 | 57.9 | 14.4 | 59 | W | 6.3 | 2.8 | ..... | ..... | 6 | SW | ..... | 0.118 | 3.0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.52 | 699.1 | 29.44 | 747.7 | 52.8 | 11.3 | 60 | N | ..... | ..... | 2 | ..... | 5 | S | ..... | 0.098 | 2.5 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.37 | 746.1 | 29.43 | 747.4 | 54.5 | 12.5 | 78 | NE | 7.4 | 3.3 | ..... | ..... | 10 | NE | ..... | 0.134 | 3.4 | ..... | Prof. Luigi Guidi. |
| Florence | 29.15 | 740.3 | 29.40 | 746.8 | 61.9 | 16.6 | 45 | NW | ..... | ..... | 4 | ..... | 10 | SSE | ..... | 0 | 0 | ..... | Cav. F. Meucci |
| Leghorn | 29.34 | 745.3 | 29.43 | 747.5 | 58.1 | 14.5 | 76 | W | ..... | ..... | 4 | ..... | 10 | SW | ..... | 0.157 | 4.0 | ..... | Prof. P. Monte. |
| Rome | 29.23 | 742.4 | 29.40 | 746.8 | 59.9 | 15.5 | 72 | W | 13.0 | 5.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.12 | 739.7 | 29.37 | 746.1 | 62.1 | 16.7 | 82 | SW | 12.5 | 5.6 | ..... | ..... | 10 | S | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.54 | 725.0 | 29.43 | 747.4 | 55.2 | 12.9 | 78 | SW | 1.3 | 0.6 | ..... | ..... | 9 | ..... | ..... | 0.504 | 12.8 | ..... | Prof. D. Conti. |
| Cagliari | 29.32 | 744.7 | 29.51 | 749.6 | 57.7 | 14.3 | 57 | W | ..... | ..... | 4 | ..... | 7 | N | ..... | 0.087 | 2.2 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.26 | 743.1 | 29.51 | 749.5 | 58.1 | 14.5 | 59 | W | 11.2 | 5.0 | ..... | ..... | 9 | W | ..... | 0.295 | 7.5 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.42 | 747.2 | 29.49 | 749.0 | 65.5 | 18.6 | 43 | WSW | 21.0 | 9.4 | ..... | ..... | 5 | WSW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 28.87 | 733.4 | 29.43 | 747.5 | 53.6 | 12.0 | 88 | SW | 3.1 | 1.4 | ..... | ..... | 10 | ..... | ..... | 0.496 | 12.6 | ..... | Prof. F. Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.34 | 770.6 | 30.36 | 771.1 | 43.2 | 6.2 | 78 | N | 3.6 | 1.6 | ..... | ..... | 0 | ..... | ..... | 0.020 | 0.51 | Clear | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 30.07 | 763.8 | 30.28 | 769.1 | 51.1 | 10.6 | 79 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0.440 | 11.18 | Cloudy | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 30.41 | 772.4 | 30.48 | 774.2 | 44.2 | 6.8 | 71 | SE | 3.0 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.08 | 637.1 | 30.23 | 767.7 | 46.9 | 8.3 | 36 | Calm | ..... | ..... | 0 | 0 | 1 | ..... | NW | 0 | 0 | Clear | Prof. L. Perez. |
| Leon | 24.45 | 621.2 | 30.13 | 765.4 | 60.1 | 15.6 | 62 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.13 | 587.4 | 30.13 | 765.4 | 54.3 | 12.4 | 69 | Calm | 0 | 0 | ..... | 8c | 0 | SW | ..... | 0.008 | 0.2 | Hazy | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 57.9 | 14.4 | 28 | NE | ..... | ..... | 1 | 1c | 0 | SW | ..... | 0 | 0 | Hazy | M. V. de Leon, M. E. |
| Tlacotalpam | 29.93 | 760.1 | 29.94 | 760.4 | 76.1 | 24.5 | 90 | S | ..... | ..... | 2 | 0 | 10 | ..... | S | 0 | 0 | Covered | M. M. Chazaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.44 | 595.3 | 30.20 | 767.1 | 50.4 | 10.2 | 41 | N | 2.7 | 1.2 | ..... | 0 | 3 | ..... | W | 0.01 | 0.2 | Fair | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. |
| Colima | 28.40 | 721.3 | 30.05 | 763.3 | 74.3 | 23.5 | 41 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Fine | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guera |

NOTE.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201 m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.89 | 759.3 | 29.89 | 759.3 | 40.6 | 4.8 | ..... | NW | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Groningen | 29.82 | 757.5 | 29.88 | 758.9 | 36.0 | 2.2 | ..... | S | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.031 | 0.8 | ..... | ..... |
| Helder | 29.85 | 758.1 | 29.85 | 758.1 | 36.9 | 2.7 | ..... | SW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Hellevoetsluis | 29.86 | 758.4 | 29.86 | 758.4 | 40.1 | 4.5 | 73 | W | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Utrecht | 29.83 | 757.7 | 29.88 | 758.9 | 40.5 | 4.7 | 49 | NNE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | H. v. d. Brink. |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.03 | 762.7 | 30.08 | 764.1 | 41.7 | 5.4 | 29 | NW | 5.4 | 2.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.98 | 761.6 | 30.02 | 762.6 | 35.6 | 2.0 | 64 | SSW | 18 | 8 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.98 | 761.4 | 30.13 | 765.3 | 39.4 | 4.1 | 44 | NE | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.56 | 750.7 | 29.60 | 751.8 | 36.0 | 2.2 | 82 | SW | 34 | 15 | ..... | ..... | 10 | ..... | ..... | 0.350 | 8.9 | Rain & snow | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.06 | 763.5 | 30.25 | 768.4 | 58.3 | 14.6 | 74 | NNE | 6.3 | 2.8 | ..... | ..... | 2 | ..... | ..... | 0.059 | 1.5 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.96 | 735.5 | 29.99 | 761.8 | 56 3 | 13 5 | 48 | W | 14.8 | 6.4 | ..... | ..... | 9 | ..... | WNW | 0 | 0 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.12 | 765.0 | 30.21 | 767.2 | 62.8 | 17.1 | 53 | SW | 6.9 | 3.1 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.67 | 753.7 | 30.04 | 762.9 | 55.6 | 13.1 | 63 | SW | 21.0 | 9.4 | ..... | ..... | 6 | ..... | ..... | 0.004 | 0.1 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.16 | 766.0 | 30.23 | 767.8 | 63.3 | 17.4 | 50 | N | 15.4 | 6.9 | ..... | ..... | 5 | ..... | ..... | 0.028 | 0.7 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd.t. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| Duque da Terceira, Santiago, Cape Verd I. | ..... | ..... | 30.06 | 763.5 | 71.6 | 22 | ..... | NE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 3 | ..... | D. clouds | C.C.da Fonseca Ferreira, Comd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, St. Thomas, Gulf of Guinea | ..... | ..... | 29.87 | 758.6 | 83.3 | 28.5 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | SE | 1 | SE | Overcast | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. San Jose de Bissao, Senegambia | ..... | ..... | 29.91 | 759.8 | 80.6 | 27.0 | ..... | SW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | A. Ferreira, 2d Lt. |
| Sá da Bandeira, Ambrizette, S. 7° 13′, E. 12° 52′ | ..... | ..... | 29.74 | 755.5 | 83.7 | 28.7 | ..... | WSW | ..... | ..... | 3 | ..... | 4 | ..... | W | 3 | SW | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 29.81 | 757.2 | 64.8 | 18.2 | ..... | NW | ..... | ..... | 3 | ..... | 10 | ..... | NW | 2 | NW | Raining | J. M. T. Guimaraes, Com'd't |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.40 | 746.8 | 29.84 | 757.8 | 39.2 | 4.0 | 64 | ENE | 11 | 5 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.52 | 749.9 | 29.95 | 760.7 | 44.4 | 6.9 | 53 | E | 4 | 2 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.85 | 758.3 | 30.11 | 764.8 | 31.1 | —0.5 | 48 | NE | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.10 | 764 6 | 30.12 | 765.0 | 28.6 | — 1.9 | 58 | ENE | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.15 | 740.4 | 29.79 | 756.6 | 46.4 | 8.0 | 64 | NNE | 4 | 2 | ..... | ..... | 8k;ka; | cn] | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.74 | 755.4 | 29.81 | 757.2 | 62.4 | 16.9 | 63 | S | 4 | 2 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.91 | 759.7 | 29.94 | 760.4 | 54.7 | 12.6 | 93 | ESE | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.26 | 743.1 | 29.83 | 757.6 | 29.1 | — 1.6 | 88 | NNW | 7 | 3 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | Snowing | Meteorological Obs. |
| Lugan | 29.62 | 752.4 | 29.83 | 757.6 | 47.5 | 8.6 | 65 | W | 31 | 14 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.89 | 759.1 | 29.91 | 759.6 | 31.3 | — 0.4 | 78 | WSW | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.62 | 724.4 | 29.87 | 758.8 | 74.5 | 23.6 | 19 | NW | 22 | 10 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 29.91 | 759.7 | 29.83 | 757.6 | 64.9 | 18.3 | 40 | WSW | 13 | 6 | ..... | ..... | 7k | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.14 | 740.1 | 29.61 | 752.0 | 48.7 | 9.3 | 63 | W | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.31 | 744.5 | 29.58 | 751.4 | 45.1 | 7.5 | 76 | ESE | 2 | 1 | ..... | ..... | 6k | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 28.76 | 730.6 | 29.72 | 754.9 | 48.9 | 9.4 | 57 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.56 | 750.8 | 29.77 | 756.6 | 71.8 | 22.1 | 38 | WNW | 4 | 2 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.36 | 720.3 | 29.91 | 759.7 | 60.8 | 16.0 | 66 | W | 47 | 21 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Teich, A. M. |
| Barnaul | 29.48 | 748.9 | 30.00 | 761.9 | 39.2 | 4.0 | 80 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.49 | 749.1 | 29.79 | 756.7 | 34.9 | 1.6 | 94 | N | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking, (China) | 29.95 | 760.8 | 30.10 | 764.4 | 49.3 | 9.6 | 34 | NW | 18 | 8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 30.10 | 764.4 | 30.19 | 766.9 | 32.4 | 0.2 | 96 | SE | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.51 | 749.5 | 29.61 | 752.2 | 61.7 | 16.5 | 34 | WSW | 5.1 | 2.28 | ..... | ..... | 10k | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Directon. |
| Bilbao, Met. Obs'y | 29.92 | 760.0 | 29.98 | 761.5 | 47.8 | 8.8 | 78 | NW | 2.7 | 1.22 | ..... | 1 | 8 | S | ..... | 0.626 | 15.9 | Rainy | Prof. Manuel de Navera |
| Burgos, Met. Obs'y | 26.90 | 683.2 | ..... | ..... | 45.0 | 7.2 | 61 | N | 7.4 | 3.33 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Oservatory | 27.63 | 701.9 | ..... | ..... | 54.3 | 12.4 | 47 | NW | 19.4 | 8.67 | ..... | 1 | 4 | NE | ..... | 0 | 0 | ..... | The Staff. |
| Murcia, Met. Obs'y | 29.64 | 752.9 | 29.79 | 756.7 | 69.8 | 21.0 | 33 | N | 6.4 | 2.86 | ..... | 1 | 4 | ESE | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.93 | 734.9 | 29.83 | 757.6 | 54.3 | 12.4 | 76 | SW | 7.4 | 3.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Covered | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.99 | 761.7 | 30.06 | 763.4 | 74.0 | 23.3 | 51 | N | 8.1 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.83 | 757.8 | 29.86 | 759.1 | 83.9 | 28.9 | 71 | ENE | 2.7 | 1.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.98 | 761.5 | 30.08 | 764.0 | 59.5 | 15.3 | 56 | WNW | 16.4 | 7.3 | ..... | 0 | 7 | ..... | NW | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W.I | 29.92 | 760.0 | 30.01 | 762.3 | 77.7 | 25.4 | 83 | SE | 0 | 0 | ..... | 4s | 2k | ..... | ..... | 1.280 | 32.50 | D. clouds | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.93 | 760.3 | 29.97 | 761.3 | 30.2 | — 1.0 | ..... | SW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.98 | 761.6 | 30.04 | 762.9 | 42.1 | 5.6 | 46 | W | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.99 | 761.8 | 30.04 | 763.1 | 39.2 | 4.0 | 52 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.95 | 760.7 | 30.13 | 765.2 | 33.8 | 1.0 | 48 | ENE | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0.008 | 0.2 | ..... | |
| Wisby | 29.94 | 760.4 | 30.00 | 761.9 | 37.0 | 2.8 | 52 | E | ..... | ..... | 7 | ..... | 0 | ..... | ..... | 0.028 | 0.7 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.04 | 763.0 | 30.11 | 764.9 | 37.4 | 3.0 | 56 | NW | 7.4 | 3.3 | ..... | ..... | 1 | ..... | E | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.28 | 718.4 | 29.76 | 755.9 | 38.1 | 3.4 | 72 | NNE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.303 | 7.7 | Snowing..... | The Observatory. |
| Zurich | 28.08 | 713.3 | 29.80 | 756.9 | 32.0 | 0.0 | 97 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.441 | 11.2 | Snowing..... | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —5.8 mm.; Thermometer,—8.1 Cent.; Relative Humidity, +15 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,338.6 feet, and that of Zurich 470 m., or 1,542.0 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.62 | 752.4 | 79.0 | 26.2 | 30 | SE | 7 | 3.0 | ..... | 4 | ..... | SW | | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.28 | 769.0 | 86.0 | 30.0 | ..... | NW | ..... | ..... | 1 | 0 | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.43 | 747.6 | 64.0 | 17.8 | ..... | S | ..... | ..... | 3 | 10 | ..... | ..... | ..... | 0 | 0 | Covered ..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.78 | 756.4 | 29.90 | 759.4 | 70.0 | 21.1 | 65 | NW | ..... | ..... | 2 | 3c | ..... | ..... | ..... | 0 | 0 | D. clouds..... | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.54 | 750.3 | 29.61 | 752.1 | 28.4 | — 2.0 | 93 | N | 13 | 5.8 | ..... | 10n | ..... | ..... | 0.40 | 10.2 | Overcast..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.69 | 754.1 | 30.00 | 762.0 | 31 | — 0.6 | ..... | N | 5 | 2.2 | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear..... | W. R. Bigg. |
| *Chatham, N B | 29.51 | 749.5 | 29.57 | 751.1 | 30 | — 1.1 | 87 | NE | 9 | 4.0 | ..... | 10n | ..... | NE | 0.60 | 15.2 | Cloudy..... | G. A. Blair. |
| Charlottetown, P. E. Island | 29.43 | 747.5 | 29.47 | 748.5 | 33 | 0.6 | 80 | S | 4 | 1.8 | ..... | 10n | ..... | ..... | 0.745 | 18.93 | Cloudy..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.68 | 753.9 | 29.88 | 758.9 | 31.5 | — 0.3 | 78 | N | ..... | ..... | 1 | 0 | 10s | ..... | 0.05 | 1.3 | Fine... | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson |
| Esquimault, B. C | 29.88 | 758.9 | 29.93 | 760.2 | 44.6 | 7.1 | 100 | NW | 2 | 0.9 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | W. H. Bevis. |
| *Father Point, Quebec | 29.72 | 754.9 | 29.75 | 755.6 | 27 | — 2.8 | 94 | N | 26 | 11.6 | ..... | 10n | ..... | ..... | Inap. | Inap | Light snow.. | J. McWilliams. |
| Fredericton, N. B | 29.69 | 750.0 | 29.69 | 751.6 | 32.0 | 0.0 | 98 | NW | 6 | 2.7 | ..... | 10n | ..... | ..... | 0.14 | 3.6 | Snowing..... | Prof. Harrison. |
| *Fort Garry, Manitoba | 28.88 | 733.5 | 29.71 | 754.6 | 42 | 5.6 | 100 | SE | 15 | 6.7 | ..... | 5k | 5n | SE | SE | 0.170 | 4.32 | Cloudy..... | James Stewart. |
| Granton, Ontario | 29.07 | 738.4 | 30.23 | 767.8 | 30 | — 1.1 | ..... | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | James Grant |
| *Halifax, N. S | 29.34 | 745.2 | 29.48 | 748.8 | 34 | 1.1 | 98 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0.890 | 22.60 | Foggy..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.80 | 758.4 | 30.25 | 768.3 | 32.3 | 0.2 | 96 | NE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.08 | 753.9 | 30.03 | 762.8 | 32 | 0.0 | 72 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.48 | 748.8 | 29.52 | 749.8 | 37.0 | 2.8 | 90 | SW | 4 | 1.8 | ..... | 10n | ..... | ..... | 0.64 | 16.3 | Overcast... | C. H. Rigby. |
| Moose Factory, Ontario | 30.26 | 768.6 | 30.30 | 769.6 | 11.0 | —11.7 | 80 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | J. R. Nason. |
| *Montreal, Quebec | 29.06 | 753.4 | 29.87 | 758.7 | 30 | — 1.1 | 73 | NW | 13 | 5.8 | ..... | 8k | 2ks | NW | ..... | 0.02 | 0.5 | Cloudy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.46 | 748.3 | 30.19 | 766.8 | 26 | — 3.3 | 70 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Rev. R. Mosley. |
| Peterboro, Ontario | 29.33 | 745.0 | 30.12 | 765.0 | 31.3 | — 0.4 | 68 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Fine..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.46 | 748.3 | 30.19 | 766.8 | 30 | — 1.1 | 78 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | H. Morgan. |
| Port Hastings, N. S | 29.44 | 747.8 | 29.49 | 749.0 | 32.6 | 0.3 | ..... | SE | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Foggy ..... | Peter Grant. |
| Port Stanley, Ontario | 29.54 | 750.3 | 30.22 | 767.6 | 31 | — 0.6 | 84 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | M. Payne. |
| *Quebec, Quebec | 29.46 | 748.3 | 29.80 | 756.9 | 30 | — 1.1 | 84 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | 0.10 | 2.5 | Cloudy..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.66 | 753.4 | 30.14 | 765.5 | 24 | — 4.4 | 83 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | W. H. McIntyre. |
| St. Andrews, N. B | 29.63 | 750.0 | 29.68 | 751.3 | 30 | — 1.1 | 80 | N | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.40 | 10.2 | Cloudy..... | Dr. Gove. |
| St. John, N. B | 29.38 | 746.2 | 29.54 | 750.3 | 31 | — 0.6 | 89 | NW | 9 | 4.0 | ..... | ..... | 10ks | ..... | ..... | 0.03 | 0.8 | Overcast.... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.47 | 748.5 | 30.22 | 767.6 | 30 | — 1.1 | 89 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | K. Stewart. |
| Stayner, Ontario | 29.35 | 745.5 | 30.17 | 766.3 | 27 | — 2.8 | 77 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | R. J. Cole. |
| Stratford, Ontario | 28.83 | 732.3 | 30.19 | 766.8 | 28.0 | — 2.2 | 86 | NW | 10 | 4.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear ..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.49 | 749.0 | 29.53 | 750.0 | 37 | 2.8 | 92 | S | 2 | 0.9 | ..... | 10cs | 8s | ..... | S | 0.67 | 17.0 | Cloudy..... | T. C. Hill. |
| *Toronto, Ontario | 29.76 | 755.9 | 30.16 | 766.1 | 31 | — 0.6 | 56 | NW | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Magnetic Observatory. |
| Windsor, N. S | 29.39 | 746.5 | 29.49 | 749.0 | 33.5 | 0.8 | 95 | NW | 3 | 1.3 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast..... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 38.0 | 3.3 | 100 | S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.53 | 13.5 | Fair ..... | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Byt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER: Corrected for instrumental error and temperature. Inches. | BAROMETER: Corrected for instrumental error and temperature. Millimeters. | BAROMETER: Reduced to sea-level. Inches. | BAROMETER: Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND: Direction. From— | WIND: Velocity. Miles per hour. | WIND: Velocity. Meters per second. | WIND: Force. 0—10. | CLOUD: Amount. Upper. 0—10. | CLOUD: Amount. Lower. 0—10. | CLOUD: Direction. Upper. From— | CLOUD: Direction. Lower. From— | RAIN-FALL OF MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OF MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.69 | 754.1 | 29.93 | 760.2 | 34 | 1.1 | 74 | NW | 7 | 3.1 | ..... | 2cs | 2s | NW | NW | 0.07 | 1.8 | Fair | |
| Alpena, Michigan | 29.55 | 750.6 | 30.24 | 768.1 | 28 | — 2.2 | 77 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Atlanta, Georgia | 28.98 | 736.1 | 30.15 | 765.8 | 45 | 7.2 | 68 | N | 6 | 2.7 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 30.00 | 762.0 | 30.01 | 762.2 | 37 | 2.8 | 63 | NW | 19 | 8.5 | ..... | 0 | 0 | ..... | ..... | 0.12 | 3.0 | Clear | |
| Augusta, Georgia | 30.02 | 762.5 | 30.20 | 767.1 | 50 | 10.0 | 45 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 30.08 | 764.0 | 30.13 | 765.3 | 39 | 3.9 | 46 | N | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Barnegat, New Jersey | 29.94 | 760.5 | 29.97 | 761.2 | 38 | 3.3 | 54 | NW | 22 | 9.8 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Clear | |
| Bismarck, Dakota | 28.12 | 714.2 | 29.98 | 761.5 | 40 | 4.4 | 82 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boerne, Texas | 28.55 | 725.2 | 29.88 | 758.9 | 49 | 9.4 | 78 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boise City, Idaho | 27.10 | 688.3 | 30.06 | 763.5 | 36 | 2.2 | 80 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boston, Massachusetts | 29.64 | 752.8 | 29.80 | 756.9 | 32.5 | 0.3 | 68 | NW | 15 | 6.7 | ..... | 1k | 0 | Calm | ..... | 0.05 | 1.3 | Clear | |
| Brackettville, Texas | 28.79 | 731.3 | 29.80 | 756.9 | 63 | 17.2 | 83 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 28.86 | 733.0 | 29.86 | 758.4 | 45 | 7.2 | 76 | W | 6 | 2.7 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.89 | 759.2 | 29.94 | 760.5 | 69 | 20.6 | 85 | SE | 4 | 1.8 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Buffalo, New York | 29.40 | 746.7 | 30.13 | 765.3 | 31.5 | — 0.3 | 64 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 53 | 11.7 | 54 | S | ..... | ..... | 1 | 2c | 0 | E | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.57 | 751.1 | 29.87 | 758.7 | 31.5 | — 0.3 | 64 | NW | 8 | 3.6 | ..... | 5ck | 2s | NW | Calm | 0.06 | 1.5 | Fair | |
| Cairo, Illinois | 29.88 | 758.9 | 30.29 | 769.4 | 47 | 8.3 | 77 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.07 | 636.8 | 29.87 | 758.7 | 40 | 4.4 | 39 | W | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 36 | 2.2 | 61 | S | ..... | ..... | 2 | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Campo, California | 27.43 | 696.7 | 30.00 | 762.0 | 40 | 4.4 | 91 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 1.06 | 26.9 | Cloudy | |
| Cape Hatteras, N. Carolina | 30.12 | 765.0 | 30.13 | 765.3 | 44 | 6.7 | 60 | NE | 20 | 8.9 | ..... | 0 | 1s | ..... | NE | 0.15 | 3.8 | Clear | |
| Cape Henry, Virginia | 30.11 | 764.8 | 30.13 | 765.3 | 40 | 4.4 | 56 | NW | 27 | 12.1 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Clear | |
| Cape Lookout, N. Carolina | 30.12 | 765.0 | 30.14 | 765.5 | 46 | 7.8 | 62 | NE | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape May, New Jersey | 29.97 | 761.2 | 30.00 | 762.0 | 39 | 3.9 | 55 | NW | 36 | 16.1 | ..... | 0 | 0 | ..... | ..... | 0.17 | 4.3 | Clear | |
| Castroville, Texas | 29.20 | 741.7 | 29.91 | 759.7 | 57 | 13.9 | 58 | W | 2 | 0.9 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Charleston, South Carolina | 30.09 | 764.3 | 30.14 | 765.5 | 51 | 10.6 | 40 | NE | 14 | 6.3 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 24.06 | 611.1 | 30.00 | 762.0 | 30 | — 1.1 | 78 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.53 | 750.0 | 30.26 | 768.6 | 36 | 2.2 | 80 | Calm | 0 | 0 | ..... | 0 | Fg:sm' | ..... | ..... | 0 | 0 | Fair | |
| Cincinnati, Ohio | 29.63 | 752.6 | 30.30 | 769.6 | 40 | 4.4 | 56 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cleveland, Ohio | 29.50 | 749.3 | 30.26 | 768.6 | 33 | 0.6 | 70 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Coleman City, Texas | 28.16 | 715.3 | 29.82 | 757.4 | 53 | 11.7 | 61 | E | 8 | 3.6 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Columbus, Ohio | 29.40 | 746.7 | 30.27 | 768.8 | 37 | 2.8 | 53 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Concho, Texas | 28.00 | 711.2 | 29.67 | 753.6 | 52 | 11.1 | 47 | E | 8 | 3.6 | ..... | 5k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Corsicana, Texas | 29.60 | 751.8 | 30.07 | 763.8 | 50 | 10.0 | 86 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.57 | 751.1 | 30.24 | 768.1 | 37 | 2.8 | 71 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.42 | 645.7 | ..... | ..... | 30 | — 1.1 | 78 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Decatur, Texas | 28.88 | 733.5 | 30.05 | 763.3 | 55 | 12.8 | 74 | E | 8 | 3.6 | ..... | 2ck | 0 | SE | ..... | 0 | 0 | Fair | |
| Denison, Texas | 29.30 | 744.2 | 30.10 | 764.5 | 51 | 10.9 | 79 | SE | 6 | 2.7 | ..... | 5k | 0 | SW | ..... | 0 | 0 | Fair | |
| Denver, Colorado | 24.84 | 630.9 | 30.06 | 763.5 | 39 | 3.9 | 55 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Des Moines, Iowa | 29.24 | 742.7 | 30.14 | 765.5 | 43 | 6.1 | 75 | SE | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Detroit, Michigan | 29.55 | 750.6 | 30.26 | 768.6 | 32 | 0.0 | 69 | NW | 3 | 1.3 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Dodge City, Kansas | 27.38 | 695.4 | 29.67 | 753.6 | 46 | 7.8 | 77 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.48 | 748.8 | 30.20 | 767.1 | 38 | 3.3 | 63 | S | 5 | 2.2 | ..... | 8c | 0 | S | ..... | 0 | 0 | Fair | |
| Duluth, Minnesota | 29.39 | 746.5 | 30.09 | 764.3 | 34 | 1.1 | 90 | NE | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Eagle Pass, Texas | 29.14 | 740.1 | 29.86 | 758.4 | 61 | 16.1 | 61 | SE | 2 | 0.9 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.51 | 749.5 | 29.58 | 751.3 | 29 | — 1.7 | 89 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | N | 0.29 | 7.4 | Light snow | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 66 | 18.9 | 84 | SE | ..... | ..... | 1 | ..... | 8s | ..... | SE | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.12 | 663.4 | ..... | ..... | 51 | 10.6 | 21 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.47 | 748.5 | 30.21 | 767.3 | 32 | 0.0 | 79 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Escanaba, Michigan | 29.55 | 750.6 | 30.24 | 768.1 | 27 | — 2.8 | 53 | Calm | 0 | 0 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Florence, Arizona | 28.50 | 723.9 | 30.10 | 764.5 | 46 | 7.8 | 69 | NE | 3 | 1.3 | ..... | ..... | 10n | ..... | Calm | 0.20 | 5.1 | Light rain | |
| Fort Buford, Dakota | 28.01 | 711.4 | ..... | ..... | 30 | — 1.1 | 89 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.14 | 3.6 | Clear | |
| Fort Craig, New Mexico | 25.36 | 644.1 | 29.42 | 747.2 | 46 | 7.8 | 24 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.05 | 636.1 | 30.11 | 764.8 | 56 | 13.3 | 39 | S | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.57 | 751.1 | 30.11 | 764.8 | 52 | 11.1 | 66 | SE | 6 | 2.7 | ..... | 5c | 0 | S | ..... | 0 | 0 | Fair | |
| Fort Griffin, Texas | 28.72 | 729.5 | 29.99 | 761.7 | 53 | 11.7 | 80 | E | 3 | 1.3 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Fort Keogh, Montana | 27.50 | 698.5 | ..... | ..... | 27 | — 2.8 | 65 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort McKavett, Texas | 27.66 | 702.6 | 29.54 | 750.3 | 60 | 15.6 | 29 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.23 | 742.4 | 29.26 | 743.2 | 18 | — 7.8 | 100 | N | 11 | 4.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 28.81 | 731.8 | 29.92 | 760.0 | 51 | 10.6 | 72 | S | 12 | 5.4 | ..... | 5c | 0 | S | ..... | 0 | 0 | Fair | |
| Fort Stevenson, Dakota | 28.12 | 714.2 | ..... | ..... | 36 | 2.2 | 70 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.12 | 3.0 | Clear | |
| Fredericksburg, Texas | 28.12 | 714.2 | 29.64 | 752.8 | 62 | 16.7 | 72 | S | 2 | 0.9 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Galveston, Texas | 30.00 | 762.0 | 30.05 | 763.3 | 68 | 20.0 | 79 | E | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Graham, Texas | 28.92 | 734.6 | 29.96 | 761.0 | 56 | 13.3 | 63 | SE | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Grand Haven, Michigan | 29.55 | 750.6 | 30.23 | 767.8 | 35 | 1.7 | 61 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.44 | 747.8 | 30.25 | 768.3 | 41 | 5.0 | 57 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianola, Texas | 29.98 | 761.5 | 30.01 | 762.2 | 68 | 20.0 | 74 | S | 6 | 2.7 | ..... | 1c | 0 | W | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.86 | 733.0 | 29.98 | 761.5 | 56 | 13.3 | 63 | SE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.06 | 763.5 | 30.08 | 764.0 | 62 | 16.7 | 67 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.56 | 750.8 | 30.19 | 766.8 | 40 | 4.4 | 73 | SE | 6 | 2.7 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Clear | |
| Key West, Florida | 30.01 | 762.2 | 30.05 | 763.3 | 72 | 22.2 | 54 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 30.10 | 764.5 | 30.12 | 765.0 | 41 | 5.0 | 65 | NE | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Knoxville, Tennessee | 29.21 | 741.9 | 30.25 | 768.3 | 40 | 4.4 | 78 | NE | 4 | 1.8 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 29.40 | 746.7 | 30.15 | 765.8 | 40 | 4.4 | 65 | S | 6 | 2.7 | ..... | 2c | 0 | S | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 25.97 | 659.6 | 30.12 | 765.0 | 46 | 7.8 | 33 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.46 | 748.3 | 29.79 | 756.7 | 70 | 21.1 | 61 | SE | 3 | 1.3 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.25 | 742.9 | 30.11 | 764.8 | 44 | 6.7 | 76 | SE | 2 | 0.9 | ..... | 5ck | Sm'e | W | ..... | 0 | 0 | Fair | |
| Los Angeles, California | 29.62 | 752.3 | 29.96 | 761.0 | 49.0 | 9.4 | 75 | NE | 8 | 3.6 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.68 | 753.9 | 30.26 | 768.6 | 42 | 5.6 | 42 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.48 | 748.8 | 30.18 | 766.6 | 42 | 5.6 | 42 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Madison, Wisconsin | 29.19 | 741.4 | 30.21 | 767.3 | 38 | 3.3 | 72 | S | 5 | 2.2 | ..... | 5cs | 0 | SW | ..... | 0 | 0 | Fair | |
| Marquette, Michigan | 29.45 | 748.0 | 30.19 | 766.8 | 31 | — 0.6 | 58 | SE | 4 | 1.8 | ..... | 5c | 0 | SE | ..... | 0 | 0 | Fair | |
| Mason, Texas | 28.33 | 719.6 | 30.11 | 764.8 | 48 | 8.9 | 78 | Calm | 0 | 0 | ..... | 2cs | 0 | W | ..... | 0 | 0 | Fair | |
| Memphis, Tennessee | 29.90 | 759.4 | 30.23 | 767.8 | 45 | 7.2 | 75 | NE | 7 | 3.1 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.48 | 748.8 | 30.24 | 768.1 | 37 | 2.8 | 71 | N | 2 | 0.9 | ..... | 1c | Sm'e | Calm | ..... | 0 | 0 | Clear | |
| Mobile, Alabama | 30.10 | 764.5 | 30.15 | 765.8 | 53 | 11.7 | 80 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.93 | 760.2 | 30.17 | 766.3 | 49 | 9.4 | 71 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Morgantown, West Virginia | 29.13 | 739.9 | 30.23 | 767.8 | 38 | 3.3 | 63 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mt. Washington, N. H. | 23.22 | 589.8 | 29.58 | 751.3 | 8 | —13.3 | 100 | NW | 30 | 13.4 | ..... | ..... | 10n | ..... | NW | 0.85 | 21.6 | Light snow | |
| Nashville, Tennessee | 29.68 | 753.9 | 30.24 | 768.1 | 41 | 5.0 | 82 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 29.76 | 755.9 | 29.88 | 758.9 | 38 | 3 3 | 45 | N | 15 | 6.7 | ..... | 2c | 0 | Calm | ..... | Inap. | Inap. | Clear | |
| New London, Connecticut | 29.81 | 757.2 | 29.85 | 758.4 | 38 | 3.3 | 45 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| New Orleans, Louisiana | 30.05 | 763.3 | 30.11 | 764.8 | 58 | 14.4 | 76 | NE | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 7 | Clear | |
| Newport, Rhode Island | 29.78 | 756.4 | 29.83 | 757.7 | 34 | 1.1 | 79 | NW | 10 | 4.5 | ..... | 5k | 2s | NW | Calm | 0.10 | 2.5 | Clearing | |
| New York, New York | 29.77 | 756.1 | 29.95 | 760.7 | 38 | 3.3 | 71 | NW | 14 | 6.3 | ..... | 1k | 0 | NW | ..... | Inap. | Inap. | Clear | |
| Norfolk, Virginia | 30.08 | 764.0 | 30.14 | 765.5 | 40 | 4.4 | 53 | N | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.07 | 1.8 | Clear | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.06 | 687.3 | 29.63 | 752.6 | 44 | 6.7 | 71 | N | 8 | 3.6 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.93 | 760.2 | 29.97 | 761.2 | 46.2 | 7.9 | 77 | SW | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 28.90 | 734.0 | 30.00 | 762.0 | 48 | 8.9 | 70 | SE | 9 | 4.0 | ..... | 5c | 2s | W | Calm | 0 | 0 | Fair | |
| Oswego, New York | 29.73 | 755.1 | 30.06 | 763.5 | 34 | 1.1 | 61 | NW | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear. | |
| Pembina, Dakota | 28.91 | 734.3 | 29.73 | 755.1 | 44 | 6.7 | 100 | W | 6 | 2.7 | ..... | ..... | 10n | ..... | W | 0.03 | 0.8 | Light rain | |
| Philadelphia, Pa | 29.96 | 761.0 | 30.02 | 762.5 | 37 | 2.8 | 63 | NW | 28 | 12.5 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear. | |
| Phœnix, Arizona | 28.81 | 731.8 | 30.64 | 778.2 | 50 | 10.0 | 79 | NE | 2 | 0.9 | ..... | ..... | 10s | ..... | S | 0.06 | 1.5 | Threatening | |
| Pike's Peak, Colorado | 17.71 | 449.8 | 29.92 | 760.0 | 19 | — 7.2 | Inap. | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Pioche, Nevada | 23.84 | 605.5 | 29.61 | 752.1 | 34 | 1.1 | 79 | S | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Light snow | |
| Pittsburg, Pennsylvania | 29.38 | 746.2 | 30.24 | 768.1 | 30 | — 1.1 | 78 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Port Huron, Michigan | 29.54 | 750.3 | 30.24 | 768.1 | 33 | 0.6 | 70 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Portland, Maine | 29.67 | 753.6 | 29.72 | 754.9 | 35 | 1.7 | 70 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.05 | 1.3 | Cloudy | |
| Portland, Oregon | 29.97 | 761.2 | 30.08 | 764.0 | 39.0 | 3.9 | 87 | E | 1 | 0.4 | ..... | Haze | 4s | ..... | ..... | 0 | 0 | Fair | |
| Prescott, Arizona | 24.55 | 623.6 | 29.91 | 759.7 | 32 | 0.0 | 79 | SE | 2 | 0.9 | ..... | ..... | 10s | ..... | S | 0.01 | 0.3 | Cloudy | |
| Pilot Point, Texas | 29.06 | 738.1 | 29.87 | 758.7 | 60 | 15.6 | 88 | S | 13 | 5.8 | ..... | 8k | 2s | SE | S | 0 | 0 | Cloudy | |
| Punta Rassa, Florida | 30.05 | 763.3 | 30.07 | 763.8 | 65 | 18.3 | 68 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Red Bluff, California | 29.51 | 749.5 | 29.87 | 758.7 | 50 | 10.0 | 65 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rio Grande City, Texas | 29.74 | 755.4 | 29.95 | 760.7 | 66 | 18.9 | 84 | E | ..... | ..... | 1 | 5cs | 5s | W | SE | 0 | 0 | Cloudy | |
| Rochester, New York | 29.46 | 748.3 | 30.09 | 764.3 | 34 | 1.1 | 61 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Cloudy | |
| Roseburg, Oregon | 29.48 | 748.8 | 30.07 | 763.8 | 37.0 | 2.8 | 100 | Calm | 0 | 0 | ..... | 2cs | Fog | Calm | Calm | 0 | 0 | Fair | |
| Sacramento, California | 29.80 | 756.9 | 29.88 | 758.9 | 48 | 8.9 | 85 | S | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.68 | 753.9 | 30.28 | 769.1 | 38 | 3.3 | 63 | NE | 5 | 2.2 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| St. Marks, Florida | 30.09 | 764.3 | 30.10 | 764.5 | 55 | 12.8 | 68 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.18 | 741.2 | 30.03 | 762.8 | 39 | 3.9 | 63 | SE | 6 | 2.7 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Salt Lake City, Utah | 25.37 | 644.4 | 29.70 | 754.4 | 54 | 12.2 | 26 | NW | 12 | 5.4 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| San Antonio, Texas | 29.31 | 744.5 | 29.89 | 759.2 | 55 | 12.8 | 68 | SE | 2 | 0.9 | ..... | 5c | 0 | SE | ..... | 0 | 0 | Fair | |
| San Diego, California | 29.95 | 760.7 | 30.02 | 762.5 | 54 | 12.2 | 80 | W | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.21 | 5.3 | Cloudy | |
| Sandusky, Ohio | 29.58 | 751.3 | 30.28 | 769.1 | 36 | 2.2 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandy Hook, New Jersey | 29.93 | 760.2 | 29.96 | 761.0 | 42 | 5.6 | 50 | NW | 22 | 9.8 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear. | |
| San Francisco, California | 29.84 | 757.9 | 29.90 | 759.4 | 49.7 | 9.8 | 80 | SW | 7 | 3.1 | ..... | 0 | Fog | ..... | SW | 0 | 0 | Fair | |
| Santa Fé, New Mexico | 23.13 | 587.5 | 29.67 | 753.6 | 47 | 8.3 | 28 | E | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.05 | 763.3 | 30.14 | 765.5 | 56 | 13.3 | 51 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Shreveport, Louisiana | 29.94 | 760.5 | 30.16 | 766.1 | 52 | 11.1 | 73 | E | 3 | 1.3 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Silver City, New Mexico | 24.15 | 613.4 | 30.37 | 771.4 | 40 | 4.4 | 47 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.14 | 765.5 | 30.18 | 766.6 | 49 | 9.4 | 57 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.75 | 755.6 | 29.88 | 758.9 | 37 | 2.8 | 81 | NW | 11 | 4.9 | ..... | 2cs | 2ks | E | S | Inap. | Inap. | Fair | |
| Stockton, Texas | 26.78 | 680.2 | 29.78 | 756.4 | 60 | 15.6 | 55 | E | 24 | 10.7 | ..... | 2c | 0 | S | ..... | 0 | 0 | Fair | |
| Thatcher's Island, Mass | 29.73 | 755.1 | 29.79 | 756.7 | 33 | 0.6 | 61 | NW | 16 | 7.2 | ..... | 1c | 0 | W | ..... | 0 | 0 | Clear | |
| Toledo, Ohio, | 29.54 | 750.3 | 30.25 | 768.3 | 38 | 3.3 | 63 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Tucson, Arizona | 27.48 | 698.0 | 30.03 | 762.8 | 48 | 8.9 | 49 | Calm | 0 | 0 | ..... | 8cs | 0 | S | ..... | 0 | 0 | Cloudy | |
| Umatilla, Oregon | 29.70 | 754.4 | 30.22 | 767.6 | 35.0 | 1.7 | 90 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 25 | — 3.9 | 75 | SW | ..... | 1 | ..... | ..... | 10s | ..... | NW | 0.06 | 1.5 | Cloudy | |
| Uvalde, Texas | 29.08 | 738.6 | 29.90 | 759.4 | 60 | 15.6 | 65 | NE | 1 | 0.4 | ..... | 0 | 5cs | ..... | SW | 0 | 0 | Fair | |
| Vicksburg, Mississippi | 29.92 | 760.0 | 30.19 | 766.8 | 50 | 10.0 | 79 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Virginia City, Montana | 24.26 | 616.2 | 29.74 | 755.4 | 30 | — 1.1 | 47 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.56 | 750.8 | 29.93 | 760.2 | 51.3 | 10.7 | 72 | E | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Washington, D. C. | 30.03 | 762.8 | 30.15 | 765.8 | 38 | 3.3 | 45 | NW | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 46 | 7.8 | 69 | SE | ..... | ..... | 1 | 0 | 8ks | ..... | SW | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 30.08 | 764.0 | 30.16 | 766.1 | 47 | 8.3 | 48 | NE | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Winnemucca, Nevada | 25.56 | 649.2 | 29.92 | 760.0 | 37 | 2.8 | 53 | NE | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass | 29.76 | 755.9 | 29.80 | 756.9 | 34 | 1.1 | 90 | NW | 20 | 8.9 | ..... | ..... | 10ks | ..... | NW | 0.04 | 1.0 | Cloudy | |
| Yankton, Dakota | 28.71 | 729.2 | 29.99 | 761.7 | 50 | 10.0 | 65 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.82 | 757.4 | 29.98 | 761.5 | 51 | 10.6 | 79 | SW | 4 | 1.8 | ..... | 5k | 0 | SW | ..... | 0.15 | 3.8 | Fair | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.54 | 724.9 | 29.97 | 761.2 | 48 | 8.9 | 62 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 29.98 | 761.5 | 30.03 | 762.8 | 76 | 24.4 | 39 | NW | 2.4 | 1.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.24 | 641.1 | ..... | ..... | 66.2 | 19.0 | 87 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.28 | 7.1 | ..... | Thomas Herran. |
| Navassa, W. I | 29.93 | 760.2 | 30.01 | 762.2 | 80 | 26.7 | ..... | NE | 4.6 | 2.1 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Partly cl'dy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.02 | 762.5 | 30.02 | 762.5 | 80.5 | 26.9 | 82 | E | ..... | ..... | 2 | 5k | 6ks | E | ..... | 1.750 | 44.45 | ½ clouded | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A. | 30.01 | 762.2 | 30.06 | 763.5 | 28.0 | — 2.2 | 94 | SE | 12 | 5.4 | ..... | 2c | 1s | SE | SE | 0 | 0 | Fair | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 2,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,888.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | BAROMETER. As read off. Inches. | BAROMETER. As read off. Millimeters. | BAROMETER. Attached Thermometer. Fahrenheit. | BAROMETER. Attached Thermometer. Centigrade. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Up'er From— | CLOUDS. Direction. Low'r From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | SEA-SWELL. CHARACTER. | SEA-SWELL. DIRECTION FROM— | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.73 | 755.1 | 53 | 11.7 | 50.5 | 10.3 | 93 | SW | 22 | 9.8 | ..... | ..... | 5 | ..... | W | 0 | 0 | ..... | ..... | Fair | |
| Navy Yard, Pensacola, Fla. | 30.20 | 767.1 | 58 | 14.4 | 58 | 14.4 | 76 | NE | 15 | 6.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Navy Yard, Portsmouth, N.H | 29.79 | 756.7 | 62 | 16.7 | 32 | 0.0 | 81 | W | 6 | 2.7 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant | |
| Naval Hospital, Yokohama, Japan | *30.39‡ | 771.9‡ | ..... | ..... | 43 | 6.1 | 75 | Calm | ..... | ..... | 0 | ..... | 2k | ..... | Calm | Slight | Slight | ..... | ..... | Fair | |
| Adams, Panama | *29.96 | 761.0 | 80 | 26.7 | 79 | 26.1 | 95 | NW | ..... | ..... | 2 | ..... | 8 | ..... | NW | ..... | ..... | ..... | ..... | Fair | |
| Alaska, Sitka, Alaska | 29.35‡ | 745.5‡ | ..... | ..... | 37 | 2.8 | 90 | ESE | ..... | ..... | 5 | ..... | 8 | ..... | NW | 0.413 | 10.49 | Smooth | ..... | Raining | |
| Alliance, Naples, Italy | 29.43‡ | 747.5‡ | ..... | ..... | 55 | 12.8 | 87 | WSW | ..... | ..... | 1–2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Raining | |
| Ashuelot, Hong-Kong, China | *30.05‡ | 763.3‡ | ..... | ..... | 62 | 16.7 | 88 | E | ..... | ..... | 1 | ..... | 8 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy | |
| Canonicus, New Orleans, La | *30.08 | 764.0 | 46 | 7.8 | 60 | 15.6 | 76 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Colorado, New York, N. Y. | 29.94 | 760.5 | 42 | 5.6 | 39 | 3.9 | 60 | NW | 22 | 9.8 | ..... | ..... | 10? | ..... | NW | 0.01 | 0.3 | ..... | ..... | Clear | |
| Constitution N. 36° 43′, W. 11° 56′ | 30.11‡ | 764.8‡ | ..... | ..... | 57 | 13.9 | 75 | WSW | ..... | ..... | 4 | ..... | 10 | ..... | WNW | ..... | ..... | Smooth | NW | Overcast | |
| Despatch, Genoa, Italy | 29.47‡ | 748.5 | ..... | ..... | 60 | 15.6 | 71 | SW | ..... | ..... | 1 | ..... | 8 | ..... | SW | ..... | ..... | Smooth | ..... | Cloudy | |
| Franklin, Norfolk, Va | *30.24 | 768.1 | 61 | 16.1 | 42 | 5.6 | 60 | NNW | 19.2 | 8.6 | ..... | ..... | 0 | ..... | ..... | 0.1 | 2 | ..... | ..... | Clear | |
| Gettysburg, Genoa, Italy | *29.63‡ | 752.6‡ | ..... | ..... | 69 | 20.6 | 95 | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.1 | 2 | ..... | ..... | Cloudy | |
| Hartford, Montevideo, Uruguay | *30.12 | 765.0 | 68 | 20.0 | 70 | 21.1 | 66 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear | |
| Michigan, Erie, Pa | †30.04‡ | 763.0‡ | ..... | ..... | 32 | 0.0 | 81 | WNW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Monocacy, Shanghai, China | *30.23‡ | 767.8‡ | ..... | ..... | 49 | 9.4 | 78 | SSE | ..... | ..... | 2 | ..... | 8 | ..... | SE | ..... | ..... | ..... | ..... | Cloudy | |
| Monongahela Yokohama, Japan | *30.44‡ | 773.5‡ | ..... | ..... | 48 | 8.9 | 43 | SE | ..... | ..... | 1–2 | ..... | 1 | ..... | ..... | Very light | Very light | ..... | ..... | D. clouds | |
| New Hampshire, Port Royal, S. C. | *30.16 | 766.1 | 54 | 12.2 | 53 | 11.7 | 54 | NNE | 18 | 8.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Onward, Callao, Peru | †*30.04 | 763.0 | ..... | ..... | 68 | 20.0 | 96 | SE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Long | W | Clear | |
| Palos, Tientsin, China | *30.10 | 764.8 | 72 | 22.2 | 52 | 11.1 | 66 | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Passaic, Washington, D. C. | ..... | ..... | ..... | ..... | 40 | 4.4 | 83 | NW | ..... | ..... | 3 | ..... | 2 | ..... | SE | ..... | ..... | ..... | ..... | Clear | |
| Pensacola, Iquique, Peru | 30.01‡ | 762.2‡ | ..... | ..... | 68 | 20.0 | 61 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear | |
| Plymouth, Portsmouth, N. H. | 29.76‡ | 755.6‡ | ..... | ..... | 33 | 0.6 | 81 | WNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast | |
| Powhatan, Norfolk, Va | 30.14‡ | 765.5‡ | ..... | ..... | 46 | 7.8 | 54 | NNW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0.01 | 0.3 | ..... | ..... | Clear | |
| Quinnebaug, N. 36° 00′ W. 5° 00′ | 30.04‡ | 763.0‡ | ..... | ..... | 62 | 16.7 | 66 | WNW | ..... | ..... | 4 | ..... | 10 | ..... | WNW | ..... | ..... | Long | W | Cloudy | |
| Ranger, Amoy, China | *30.13‡ | 765.3‡ | ..... | ..... | 68 | 20.0 | 84 | NE | ..... | ..... | 1–2 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Raining | |
| Richmond, N. 8° 23′, E. 74° 42′ | 29.80‡ | 756.9‡ | ..... | ..... | 86 | 30.0 | 72 | WNW | ..... | ..... | 2–3 | ..... | 8 | ..... | WNW | 0 | 0 | Smooth | ..... | Cloudy | |
| Rio Bravo, Brownsville, Texas | 29.96 | 761.0 | 69 | 20.6 | 69 | 20.6 | 95 | SE | ..... | ..... | 1 | ..... | 8 | ..... | W | ..... | ..... | ..... | ..... | Fair | |
| Santee, Annapolis, Md. | 30.09‡ | 764.3‡ | ..... | ..... | 41 | 5.0 | 62 | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Saratoga, N. 39° 08′, W. 47° 08′ | 30.32‡ | 770.1‡ | ..... | ..... | 64 | 17.8 | 78 | S | ..... | ..... | 6 | ..... | 2 | ..... | N | 0 | 0 | Mod'ate | N | D. clouds | |
| St. Louis, League Island, Pa | 30.06‡ | 763.5‡ | ..... | ..... | 38 | 3.3 | 74 | NW | 30 | 13.4 | ..... | ..... | 0 | ..... | ..... | 0.05 | 1.3 | ..... | ..... | Clear | |
| Supply, New York, N. Y. | 29.97‡ | 761.2‡ | ..... | ..... | 39 | 3.9 | 83 | NW | ..... | ..... | 4 | ..... | 2 | ..... | NW | ..... | ..... | ..... | ..... | Clear | |
| Trenton, N. 44° 06′, E. 8° 35′ | *29.44‡ | 747.8‡ | ..... | ..... | 58 | 14.4 | 70 | SSW | ..... | ..... | 1 | ..... | 5 | ..... | S;W | 0.01 | 0.3 | Mod'ate | S | Fair | |
| Tuscarora, Acapulco, Mexico | *29.90‡ | 759.4‡ | ..... | ..... | 76 | 24.4 | 86 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | ..... | Foggy | |
| Vandalia N 37° 03′, W. 75° 14′ | †30.10‡ | 764.6‡ | ..... | ..... | 41 | 5.0 | 83 | NW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | ..... | ..... | Long | NW | Clear | |
| Wabash, Boston, Mass. | 29.83‡ | 757.7‡ | ..... | ..... | 32 | 0.0 | 83 | NW | 12 | 5.4 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy | |
| Wyoming, Jaffa, Syria | *29.89‡ | 759.2‡ | ..... | ..... | 72 | 22.2 | 100 | WNW | ..... | ..... | 0–1 | ..... | 2 | ..... | NW | ..... | ..... | Smooth | NW | Clear | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Upper | Lower | Upper. | Lower. | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From — | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | |
| S. S. City of Tokio, Capt. Maury N. 35° 33′, W. 154° 30′ | | 30.31‡ | 769.9‡ | 54 | 12.2 | | NW | | | 6 | | 8k | | | 0 | Heavy | NW | Cloudy | L. B. Walls. |
| S. S. Colima. N. 8° 48′, W. 84° 40′ †. | | 29.94‡ | 760.5‡ | 80 | 26.7 | | Var. | | | 2-4 | | 7 | | WNW | 0.02 in. or 0.5 mm. | Small | NW | Raining | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebur |
| S. S. Dakota, Capt. H. G. Morse, N. 42° 27′, W. 124° 43′ †. | | 30.03‡ | 762.8‡ | | | | NW | | | 2 | | 4 | | SW | Light | Small | NW | Fine | B. Lawless. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Chas. Connolly |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, S. 34° 10′, E. 160° 20′ | | 29.96‡ | 761.0‡ | | | | E | | | 6 | | 5 | | W | | Mod'ate | SW | Fair | R. C. Ghest, 1st Officer |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the cooperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

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| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroi *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, San Francisco, Cal. *. | | 29.92‡ | 760.0‡ | 56 | 13.3 | 63 | NW | | | 4 | | k | | NW | 0 | Smooth | | Misty | J. A. Thompson, 2d Off |
| S. S. Gaelic, N. 38° 30′, E. 148° 30′ *. | | 30.27‡ | 768.8‡ | 46 | 7.8 | ?? | Var. | | | 2-5 | | cs | | Var. | 0 | Swell | NE | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, | | | | | | | | | | | | | | | | | | | J. G. Cameron. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the co-operation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 46° 38′, W. 37° 15′ | | 30.31‡ | 769.9‡ | 50.0 | 10.0 | 72 | WNW | | | 6 | | 10 | | | 0 | Rough | WNW | Cloudy | Capt. C. Undütsch. |
| S. S. Leipzig, N. 45° 50′, W. 46° 04′ | | 30.22‡ | 767.6‡ | 48.0 | 8.9 | ?? | WSW | | | 4 | | 8 | | SW | 0 | Mod'ate | WSW | Hazy | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, Capt. G. Meyer, Baltimore, Md | | ?29.70‡ | ?756.7‡ | | | | N | | | 4 | | 5 | | NE | | | | Fair | G. Risius, 3rd Officer. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | Character. | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Philadelphia, Pa | | 30.11‡ | 765.8‡ | 48 | 8.9 | | NW | | | 4 | | 1 | | NW | 0 | | | Fair | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

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| S. S. Austrian | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| Peruvian | | | | | | | | | | | | | | | | | | | J. Powell, 4th Officer. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off: wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

**MARINE SERIES. (Miscellaneous.**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
| Brigantine "George," of Halifax | | | | | | | | | | | | | | | | | | | Willard N. Pratt. |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

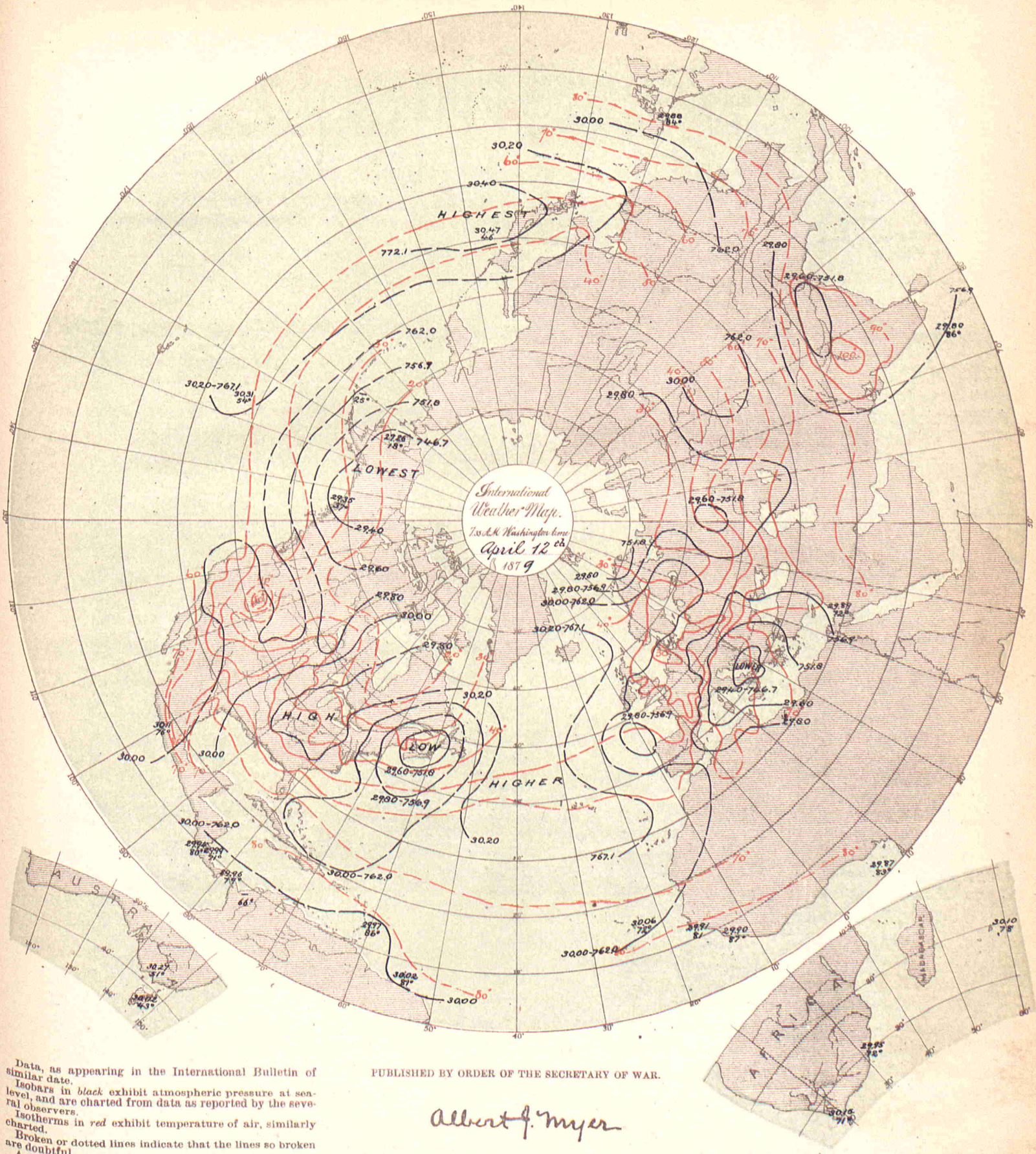
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg'd,) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIOAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 13, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | 29.80 | 757.0 | 64.0 | 17.8 | 76 | NW | | | 1 | | 0 | | | 0 | 0 | Clear | Kesxuche. |
| Nemours | | | 29.74 | 755.3 | 64.8 | 18.2 | 60 | ENE | | | 1 | | 0 | | | 0 | 0 | Clear | Tourilliere. |
| Algiers | | | 29.82 | 757.4 | 68.4 | 20.2 | 62 | NE | | | 2 | | 2 | | | 0.118 | 3.0 | Fair | Foufrede. |
| La Calle | | | | | | | | | | | | | | | | | | | Jacques. |
| Tunis | | | | | | | | | | | | | | | | | | | Gau. |
| Sfax | | | 29.97 | 761.2 | | | | | | | | | | | | | | | |
| Saida | | | 29.83 | 757.7 | 59.7 | 15.4 | 47 | S | | | 3 | | 0 | | | 0 | 0 | Clear | Herbin. |
| Tebessa | | | 29.96 | 761.0 | 65.7 | 18.7 | 34 | W | | | 1 | | 2 | | | 0 | 0 | Fair | Watrin. |
| Geriville | | | 29.90 | 759.4 | 54.0 | 12.2 | 86 | S | | | 4 | | 8 | | | 0 | 0 | Very cloudy | Brugniaux. |
| Laghouat | | | 29.90 | 759.5 | 73.0 | 22.8 | 16 | S | | | 4 | | 0 | | | 0 | 0 | Clear | Bertrand. |
| Biskra | | | 29.92 | 759.9 | 74.5 | 23.6 | 16 | NW | | | 1 | | 2 | | | 0 | 0 | Fair | Chanvaux. |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 28.91 | 734.2 | 29.45 | 748.1 | 48.9 | 9.4 | 91 | SW | | | 2 | | 10 | | | 0.150 | 3.8 | | Prof. Ivan Stosir. |
| Cracow, I. R. Observatory | 28.60 | 726.4 | 29.38 | 746.1 | 37.4 | 3.0 | 90 | NNW | | | 2 | | 10 | | | 0.610 | 15.5 | | Dr. Wierzbiski. |
| Eperies | 28.34 | 719.8 | 29.21 | 742.0 | 42.8 | 6.0 | 86 | NW | | | 2 | | 10 | | | Blank | Blank | | Julius Mikolik. |
| Gratz | 28.21 | 716.6 | 29.44 | 747.8 | 51.8 | 11.0 | 47 | NW | | | 5 | | 3 | | | 0.075 | 1.9 | | Andreas Rospini. |
| Hermannstadt | 27.77 | 705.4 | 29.15 | 740.5 | 55.8 | 13.2 | 71 | NW | | | 2 | | 6 | | | 0 | 0 | | Prof. A. Gottschling. |
| Kremsmünster | 28.28 | 718.4 | 29.66 | 753.4 | 34.5 | 1.4 | 74 | WNW | | | 3 | | 10 | | | 0.276 | 7.0 | | Prof. C. Wagner. |
| Lemberg | 28.16 | 715.2 | 29.13 | 740.0 | 44.6 | 7.0 | 99 | NE | | | 1 | | 10 | | | 0.283 | 7.2 | | Dr. T. Stanecki. |
| Pola | 29.41 | 746.9 | 29.52 | 749.7 | 56.1 | 13.4 | 76 | WNW | | | 2 | | 5 | | | 0.091 | 2.3 | | I.R.Hydrographic Office |
| Szathmar | 28.78 | 729.8 | 29.19 | 741.3 | 52.5 | 11.4 | 95 | SE | | | 3 | | 9 | | | 0.705 | 17.9 | | Julius Csics, S. J. |
| Szegedin | 28.97 | 735.7 | 29.24 | 742.8 | 45.3 | 7.4 | 83 | W | | | 3 | | 10 | | | 1.309 | 33.25 | | Karl Stancel. |
| Trieste | 29.42 | 747.3 | 29.52 | 749.9 | 53.8 | 12.1 | 75 | W | | | 1 | | 4 | | | 1.732 | 44.0 | Rainy | P. Busin. |
| Vienna | 28.76 | 730.6 | 29.50 | 749.2 | 36.3 | 2.4 | 79 | W | | | 6 | | 10 | | | 0.628 | 18.4 | | I. R. Central Met. Obs'y |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.52 | 749.8 | 29.72 | 755.0 | 42.1 | 5.6 | 48 | ENE | | | 2 | 2 | 3 | WSW | NE | 0 | 0 | | Royal Observatory. |
| Furnes | 29.71 | 754.4 | 29.72 | 755.0 | 49.1 | 9.5 | 61 | ESE | | | 2 | | 6 | | | 0 | 0 | | M. E. de Cae. |
| Maeseyck | 29.62 | 752.4 | 29.75 | 755.6 | 40.8 | 4.9 | 82 | NE | | | 2 | | 5 | | | 0 | 0 | | M. Pierrot. |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

**Entered at the Post Office at Washington, D. C., as Second-Class Matter.**

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.87 | 758.7 | 29.97 | 761.2 | 40.1 | 4.5 | ..... | ENE | 24 | 10.7 | ..... | ..... | 7 | ..... | ..... | 0.075 | 1.91 | Squally..... | W. Boswell. |
| Ardrossan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.80 | 756.9 | 39.2 | 4.0 | ..... | NE | 17 | 7.6 | ..... | ..... | ..... | ..... | ..... | Blank | Blank | ..... | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.65 | 753.1 | 33.8 | 1.0 | ..... | NE | 31 | 13.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.66 | 753.4 | 35.0 | 1.7 | ..... | E | 42 | 18.8 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy ..... | Thomas Mackereth. |
| Bradford, Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.02 | 0.5 | ..... | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.94 | 760.5 | 29.96 | 761.0 | 85 | 29.4 | ..... | NE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.69 | 754.1 | 40.1 | 4.5 | ..... | S | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | Rain & snow | H. Todd. [O. |
| Cardington | ..... | ..... | 29.63 | 752.6 | 43.0 | 6.1 | ..... | S | ..... | ..... | 1 | ..... | 8 | ..... | ..... | Blank | Blank | Overcast..... | John McLaren. |
| Chatham, School M. E. | 29.54 | 750.3 | 29.68 | 753.9 | 43.6 | 6.4 | ..... | SE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.03 | 711.9 | 29.54 | 750.3 | 32.0 | 0.0 | ..... | NE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | Snowing..... | Alexander Watt. |
| Donaghadee | 29.77 | 756.1 | 29.82 | 757.4 | 40 | 4.4 | ..... | E | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.62 | 752.3 | 29.65 | 753.1 | 44 | 6.7 | ..... | E | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded... | J. Costello. |
| Falmouth, Observatory | 29.13 | 744.5 | 29.55 | 750.6 | 38.0 | 3.3 | ..... | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.70 | 703.6 | 30.01 | 762.2 | 78.0 | 25.6 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.68 | 753.9 | 29.91 | 759.7 | 86 | 30.0 | ..... | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's college | ..... | ..... | 29.69 | 754.1 | 40 | 4.4 | ..... | NE | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 29.66 | 753.4 | 29.72 | 754.9 | 60.8 | 16 0 | ..... | W | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy..... | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29 66 | 753.4 | 29.87 | 758.7 | 38.2 | 3.4 | ..... | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. [O. |
| Great Yarmouth | 29.74 | 755.4 | 29.74 | 755.4 | 39 | 3.9 | ..... | E | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.48 | 748.8 | 29.66 | 753.4 | 44.3 | 6.8 | ..... | SSE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds.... | The staff, for G.B. Airy. |
| Guernsey | 29.31 | 744.5 | 29.53 | 750.0 | 43 | 6.1 | ..... | SE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S.E. Hoskins, F.R.S. |
| Helston | 29.60 | 751.8 | 29.72 | 754.9 | 47 | 8.3 | ..... | E | ..... | ..... | 2 | ..... | 2k | ..... | ..... | 0.16 | 4.1 | Fine..... | M. P. Moyle. |
| Holyhead | 29.62 | 752.3 | 29.69 | 754.1 | 35 | 1.7 | ..... | NE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | John Tilston. |
| Jersey | 29.25 | 742.9 | 29.55 | 750.6 | 42.5 | 5.8 | ..... | SE | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy..... | J. Fisher. |
| Kew, Observatory | 29.62 | 752.3 | 29.66 | 753.4 | 46.0 | 7.8 | ..... | SSE | 17 | 7.6 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Threatening | The Meteorological Of. |
| Leicester, Museum | 29.40 | 746.7 | 29.66 | 753.4 | 37.2 | 2.9 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.62 | 752.3 | 29.69 | 754.1 | 67 | 19.4 | ..... | SE | ..... | ..... | 1 | ..... | 2k | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.88 | 758.9 | 29.97 | 761.2 | 41 | 5.0 | ..... | ENE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ¾ clouded... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.13 | 765.3 | 76.0 | 24.4 | ..... | SE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.51 | 749.5 | 29.71 | 754.6 | 37.4 | 3.0 | ..... | SE | ..... | ..... | 3 | ..... | 10d | ..... | ESE | 0.164 | 4.16 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.10 | 739.1 | 29.63 | 752.6 | 35.0 | 1.7 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.63 | 752.6 | 43 | 6.1 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. E. Bellamy. |
| Plymouth | 29.46 | 748.3 | 29.54 | 750.3 | 39.5 | 4.2 | ..... | SE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | John Merrifield. |
| Roche's Point | 29.60 | 751.8 | 29.68 | 753.9 | 38 | 3.3 | ..... | NE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | Blank | Blank | ¾ clouded... | Wm. Kennedy, |
| Saint Ann's Head | 29.40 | 746.7 | 29.56 | 750.8 | 42 | 5.6 | ..... | NE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 41.9 | 5.5 | ..... | N | 14 | 6.3 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.40 | 746.7 | 29.46 | 748.3 | 66.4 | 19.1 | ..... | WSW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | W. H. Lyne. |
| Sheffield | 29.46 | 748.3 | 29.75 | 755.6 | 37.0 | 2.8 | ..... | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.05 | 1.3 | Snowing..... | W. F. Cooper. |
| Silloth Rectory | 29.77 | 756.1 | 29.80 | 756.9 | 41.4 | 5.2 | 63 | SE | ..... | ..... | 7 | ..... | 4 | ..... | ..... | 0 | 0 | D. clouds..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.32 | 744.7 | 29.72 | 754.9 | 38.0 | 3.3 | ..... | E | ..... | ..... | 5 | ..... | 8 | ..... | ..... | Blank | Blank | D. clouds..... | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.41 | 747.0 | 29.63 | 752.6 | 44.4 | 6.9 | ..... | SE | ..... | ..... | 2–3 | ..... | 5 | ..... | ..... | ..... | ..... | Showery..... | C. H. Griffith, F. M. S. |
| Thurso | 29.98 | 761.5 | 30.04 | 763.0 | 46 | 7.8 | ..... | NNE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John Trotter. |
| Truro, Royal Institution | 29.55 | 750.6 | 29.61 | 752.1 | 38 | 3.3 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | W. Newcombe. |
| Valencia, Observatory | 29.63 | 752.6 | 29.66 | 753.4 | 39.0 | 3.9 | ..... | NE | 27 | 12.1 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | D. clouds..... | The Meteorological Of. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.83 | 757.7 | 29.87 | 758.7 | 81.3 | 27.4 | 43 | NNW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.22 | 767.6 | 45.0 | 7.2 | 93 | Calm | ..... | ..... | 0 | ..... | 10kn | ..... | ..... | 0.95 | 24.1 | Cloudy..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.91 | 759.7 | 36.0 | 2.2 | ..... | E | ..... | ..... | 4 | 0 | 10ks | ..... | ..... | 0.45 | 11.4 | Overcast..... | Andrew Gibb. |
| Mauritius, Observatory | 29.93 | 760.2 | 30.12 | 765.0 | 78.3 | 25.7 | 67 | ESE | 20.5 | 9.2 | ..... | 0 | 3 | ..... | ESE | 0.02 | 0.5 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 30.31 | 769.9 | 30.41 | 772.4 | 50.8 | 10.4 | 74 | S | 16 | 7.2 | ..... | ..... | 7 | ..... | ..... | 0.16 | 4.1 | Showery ..... | R. L. J. Ellery. |
| MonachLt-house, (Hebrides) | ..... | ..... | 29.99 | 761.7 | 44 | 6.7 | ..... | ENE | ..... | ..... | 4 | 0 | 0 | ..... | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.02 | 762.5 | 40 | 4.4 | ..... | NE | ..... | ..... | 4 | 10 | 10 | N | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m., Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| BRITISH MARINE SERIES. VESSELS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 45′, E. 29° 55′ | ..... | ..... | 29.43‡ | 747.5‡ | 71 | 21.7 | ..... | W | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | Squally..... | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle-Isle, N. 49° 04′, W. 8° 45′ | ..... | ..... | 29.45‡ | 748.0‡ | 45 | 7.2 | ..... | NE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | 5 | NNE | Showery..... | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole, N. 46° 04′, W. 12° 02′ | ..... | ..... | 29.49‡ | 749.0‡ | 47.4 | 8.6 | ..... | ESE | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.25 | 666.7 | 29.96 | 761.0 | 66.2 | 19.0 | ..... | NE | ..... | ..... | 1 | 6cs | ..... | ..... | ..... | 0 | 0 | ..... | Federico Maison |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. The elevation of San José is 1,145 meters, or 3,756.6 feet.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.73 | 755.1 | 29.78 | 756.3 | 38.3 | 3.5 | 69 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 29.77 | 756.2 | 29.79 | 756.7 | 36.1 | 2.3 | 77 | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 30.23 | 767.9 | 30.28 | 769.0 | 35.1 | 1.7 | 91 | W | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 30.13 | 765.3 | 30.17 | 766.2 | 36.7 | 2.6 | 65 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.65 | 753.1 | 29.82 | 757.4 | 37.4 | 3.0 | 90 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.05 | 737.8 | 29.60 | 751.8 | 45.7 | 7.6 | 71 | S | ..... | ..... | 1 | ..... | 10 | ..... | S | 0 | 0 | Covered | Collignon, Director |
| Amiens, Normal School | 29.45 | 748.0 | 29.56 | 750.7 | 62.2 | 16.8 | 87 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bonvallet, Director |
| Avignon, Normal School | 29.56 | 750.9 | 29.64 | 752.9 | 50.2 | 10.1 | 44 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | M. Giraud, Director |
| Bar-sur-Seine | 29.08 | 738.5 | 29.63 | 752.7 | 46.5 | 7.5 | 29 | SE | ..... | ..... | 1 | 2c | ..... | ..... | ..... | 0 | 0 | Slightly cl'dy | C. Saillard, Director. |
| Beauvais, Normal School | 29.38 | 746.2 | 29.65 | 753.1 | 44.4 | 6.9 | 41 | SE | ..... | ..... | 2 | ..... | 5 | SE | NW | 0 | 0 | Cloudy | Frere Eugene Marie, Dr |
| Besançon, Normal School | 28.78 | 730.9 | 29.68 | 753.9 | 41.7 | 5.4 | 44 | NE | ..... | ..... | 4 | ..... | 2 | ..... | E | 0 | 0 | Slightly cl'dy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.78 | 731.1 | 29.68 | 753.8 | 47.3 | 8.5 | 55 | W | ..... | ..... | 1 | 2c | ..... | W | W | 0 | 0 | Slightly cl'dy | M. Marlot, Director. |
| Bourges, Normal School | 29.03 | 737.3 | 29.59 | 751.6 | 38.8 | 3.8 | 87 | E | ..... | ..... | 4 | ..... | 10ck | NE | E | ..... | ..... | Raining | A. Waquet, Director |
| Brest, Naval Observatory | 29.17 | 740.8 | 29.41 | 747.0 | 46.8 | 8.2 | 53 | SE | ..... | ..... | 2 | ..... | 9 | ..... | SE | 0 | 0 | ..... | M. de Rermaree, Director |
| Carcassonne, Normal School | 29.14 | 740.1 | 29.51 | 750.6 | 49.3 | 9.6 | 65 | NE | ..... | ..... | 4 | ..... | 10 | SE | NE | 0 | 0 | Covered | September, Director. |
| Caen, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Lair, Director. |
| Chartres, Normal School | 29.16 | 740.7 | 29.74 | 755.3 | 39.4 | 4.1 | 95 | W | ..... | ..... | 1 | ..... | 10 | ..... | W | 0.16 | 4. | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.34 | 745.3 | 29.67 | 753.5 | 45.3 | 7.4 | 34 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Clear | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs'y | 28.22 | 716.8 | 29.59 | 751.5 | 45.0 | 7.2 | 33 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.86 | 733.0 | 29.79 | 756.6 | 37.0 | 2.8 | 63 | E | ..... | ..... | 1 | 2c | ..... | ..... | E | 0 | 0 | Slightly cl'dy | Dr. Coulet, Director |
| Commune de Gréasque* | 28.53 | 724.6 | 29.67 | 753.6 | 51.3 | 10.7 | 44 | SW | ..... | ..... | 3 | ..... | 5 | ..... | S | 0 | 0 | ½ covered | M. Kina, Director. |
| Grenoble, Normal School | 28.88 | 733.5 | 29.65 | 753.2 | 44.6 | 7.0 | 51 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0.098 | 2.50 | Clear | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.25 | 743.0 | 29.47 | 748.5 | 41.2 | 5.1 | 59 | ESE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Mouillot, Director |
| Le Mans, Normal School | 29.22 | 742.2 | 29.53 | 750.0 | 43.7 | 6.5 | 67 | SE | ..... | ..... | 2 | ..... | 5 | ..... | SE | 0 | 0 | Cloudy | Poirrier, Director |
| Lons-Le-Saulnier, N. School | 28.69 | 728.6 | 29.61 | 752.2 | 44.8 | 7.1 | 51 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Baudry, Director |
| Lorient, Naval Observatory | 29.37 | 746.1 | 29.48 | 748.7 | 41.0 | 5.0 | 60 | E | ..... | ..... | 4 | ..... | ..... | ..... | E | 0 | 0 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director. |
| Marseilles, Observatory | ..... | ..... | 29.63 | 752.6 | 54.0 | 12.2 | 58 | WSW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.102 | 2.60 | Cloudy | The Staff. |
| Mirecourt, Normal School | 28.57 | 725.7 | 29.63 | 752.7 | 38.5 | 3.6 | 57 | N | ..... | ..... | 3 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | M. Barbier, Director. |
| Nîmes, Normal School | 29.43 | 747.4 | 29.63 | 752.6 | 50.7 | 10.4 | 60 | N | ..... | ..... | 2 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 28.57 | 725.7 | 29.65 | 753.1 | 44.6 | 7 | 44 | S | ..... | ..... | 1 | ..... | 10 | S | S | ..... | ..... | Light rain | M. Cantier, Director. |
| Puy de Dome (Summit) Obs. | 24.63 | 625.5 | ..... | ..... | 22.3 | — 5.4 | 100 | S | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Alluard, Director |
| Rochefort, Naval Obs'y | 29.44 | 747.7 | 29.47 | 748.5 | 38.5 | 3.6 | 93 | ESE | ..... | ..... | 2 | ..... | 10 | ESE | ESE | 0.43 | 11 | Raining | Lt. Decante, Director. |
| Rouen, Normal School | 29.53 | 750.0 | 29.61 | 752.2 | 46.2 | 7.9 | 35 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.47 | 748.4 | 29.50 | 749.2 | 41.9 | 5.5 | 41 | SSE | ..... | ..... | 4 | ..... | 8 | SW | SW | 0 | 0 | Very cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.48 | 748.8 | 29.65 | 753.0 | 46.8 | 8.2 | 37 | ESE | ..... | ..... | 3 | ..... | ..... | ..... | ESE | 0 | 0 | ..... | E. Renou; Director. |
| Tarbes, Normal School | 28.40 | 721.4 | 29.47 | 748.6 | 53.6 | 12 | 46 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | T. Huguet, Director |
| Toulouse, Observatory | 28.78 | 731.1 | 29.49 | 749.1 | 47.8 | 8.8 | 65 | SSE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | M. Mercadier Julier. |
| Versailles Observatory | 29.13 | 740.0 | 29.63 | 752.5 | 43.2 | 6.2 | 37 | SE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.82 | 757.5 | 29.85 | 758.2 | 78.8 | 26 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.28 | 7. | ..... | L'Abbé Marcl ési. |
| Lyons Obs'y, (Park Station) | 29.01 | 736.8 | 29.63 | 752.6 | 43.9 | 6.6 | 63 | E | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Light mist | Mr. Jays. |
| Mont-Louis | 24.39 | 619.6 | 29.71 | 754.6 | 38.3 | 3.5 | 57 | WSW | 37.4 | 16.7 | ..... | ..... | 6 | ..... | W | 0 | 0 | ..... | M. Cave |
| Nice | ..... | ..... | 29.59 | 751.5 | 59.0 | 15.0 | 48 | W | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0.094 | 2.4 | Clear | Dr. A. Nieppe, Jr. |
| Paris, Montsouris Obs'y | 29.37 | 746.0 | ..... | ..... | 44.6 | 7.0 | 35 | SE | ..... | ..... | 2–3 | ..... | ..... | ..... | ..... | Inap. | Inap. | ..... | Marié Davy, Director. |
| Perpignan | 29.37 | 746.0 | 29.48 | 748.7 | 55.0 | 12.8 | 66 | SE | 16.8 | 7.5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 21.98 | 558.2 | ..... | ..... | 28.4 | — 2.0 | ..... | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.689 | 17.5 | Snowy | Gen'l de Nansouty. |
| Tours | 29.30 | 744.3 | 29.50 | 749.3 | 44.2 | 6.8 | 60 | ESE | ..... | ..... | 4 | ..... | 10 | ..... | ESE | 0 | 0 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.22 | 767.5 | 30.24 | 768.2 | 51.4 | 10.8 | 86 | NE | 6.5 | 2.9 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a.m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p.m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.85 | 732.8 | 29.09 | 754.0 | 37.0 | 2.8 | 75 | NW | ..... | ..... | 2 | ..... | 10 | W | ..... | 0.197 | 5.0 | ..... | Prof. Dr. Hoh. |
| Berlin | 29.53 | 750.0 | 29.70 | 754.4 | 43.3 | 6.3 | 65 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Arndt. |
| Breslau | 29.02 | 737.0 | 29.54 | 750.3 | 37.6 | 3.1 | 100 | N | ..... | ..... | 5 | ..... | 10 | NNE | ..... | 0.058 | 1.47 | Raining | Royal University Obs'y |
| Carlsruhe | 29.32 | 744.1 | 29.73 | 755.2 | 36.7 | 2.6 | 58 | N | ..... | ..... | 1 | ..... | 10 | SW | ..... | 0 | 0 | ..... | Albert Senz. |
| Cassel | 29.12 | 739.7 | 29.72 | 755.0 | 34.9 | 1.6 | 77 | NNW | ..... | ..... | 4 | ..... | 10 | N | ..... | 0.302 | 7.68 | Snowing | Dr. H. Möhl. |
| Crefeld | 29.57 | 751.0 | 29.73 | 755.1 | 41.9 | 5.5 | 46 | N | ..... | ..... | 3 | ..... | 3k | ..... | ..... | 0 | 0 | ..... | Director Lose. |
| Emden | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. Prestel. |
| Frankfort on the Main | 29.39 | 746.4 | 29.75 | 755.7 | 37.0 | 2.8 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.043 | 1.1 | ..... | Physical Society. |
| Freienwalde on the Oder | 29.61 | 752.2 | 29.65 | 753.2 | 42.6 | 5.9 | 86 | N | ..... | ..... | 2 | ..... | 10ks | N | ..... | 0 | 0 | ..... | Assmann., M. D. |
| Friedrichshafen | 28.25 | 717.5 | 29.71 | 754.6 | 39.6 | 4.2 | 63 | WNW | ..... | ..... | 3 | ..... | 8 | ..... | NE | 0 | 0 | ..... | M. Wilhelm. |
| Hamburg | 29.67 | 753.6 | 29.74 | 755.4 | 39.0 | 3.9 | 75 | NE | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0.008 | 0.2 | Gloomy | Captain F. Hegemann |
| Kiel | 29.75 | 755.7 | 29.77 | 756.1 | 37.0 | 2.8 | 82 | ENE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.52 | 749.9 | 29.61 | 752.0 | 41.9 | 5.5 | 63 | NE | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. E. Luther. |
| Köslin | ..... | ..... | 29.62 | 752.3 | 41.5 | 5.3 | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | H. Müller. |
| Leipsic, Observatory | 29.26 | 743.2 | 29.69 | 754.1 | 37.0 | 2.8 | 86 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.008 | 0.2 | ..... | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.65 | 753.0 | 29.69 | 754.2 | 45.1 | 7.3 | 51 | NE | ..... | ..... | 4 | ..... | 8s | ..... | ..... | ..... | ..... | Squally | Skalweit. |
| Neufahrwasser | 29.65 | 753.0 | 29.66 | 753.4 | 40.1 | 4.5 | 76 | NNE | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | A. Lothes. |
| Posen | 29.32 | 744.7 | 29.61 | 752.2 | 41.9 | 5.5 | 63 | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.004 | 0.1 | ..... | Dr. Magener. |
| Strassburg (in Alsace) | 29.19 | 741.5 | 29.76 | 755.8 | 38.8 | 3.8 | 53 | N | ..... | ..... | 2 | ..... | 9 | W | ..... | 0.008 | 0.21 | ..... | Imp. University Observatory. |
| Stuttgart | 28.75 | 730.2 | 29.71 | 754.7 | 37.0 | 2.8 | 94 | N | ..... | ..... | 1 | ..... | 5 | W | ..... | 0 | 0 | ..... | Prof. Schoder. |
| Treves (Trier) | 29.15 | 740.4 | 29.67 | 753.5 | 43.3 | 6.3 | 41 | E | ..... | ..... | 5 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Flesch. |
| Weissenburg (Bavaria) | 28.17 | 715.4 | 29.72 | 755.0 | 31.8 | — 0.1 | 81 | NW | 1.1 | 0.5 | .. | ..... | 10 | NW | ..... | 0.094 | 2.4 | Gloomy | Dr. Van Bebber. |
| Wustrow, Naval School | 29.73 | 755.2 | 29.76 | 755.8 | 38.5 | 3.6 | 78 | ENE | ..... | ..... | 4 | ..... | 10ks | ..... | ..... | 0 | 0 | ..... | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.28 | 743.6 | 29.66 | 753.4 | 70.9 | 21.6 | ..... | SW | ..... | ..... | 2.5 | ..... | ..... | ..... | ..... | ..... | ..... | ⅛ Clear | Dr. J. F. J. Schmidt. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.79 | 756.6 | 29.84 | 757.8 | 86.5 | 30.3 | 38 | SSW | 11 | 4.9 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | D. clouds | |
| Deesa | 29.30 | 744.2 | 29.76 | 755.9 | 94.6 | 34.8 | 11 | W | 9.2 | 4.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Bombay | 29.76 | 756.0 | 29.80 | 757.0 | 83.8 | 28.8 | 69 | NW | 21 | 9.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Poona | 27.80 | 706.2 | 29.75 | 755.6 | 93.4 | 34.3 | 25 | WNW | ..... | ..... | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Lahore | 29.00 | 736.7 | 29.73 | 755.0 | 93.3 | 34.1 | 23 | Calm | 1.9 | 0.8 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Blue sky | |
| Belgaum | 27.28 | 692.9 | 29.78 | 756.3 | 82.7 | 28.2 | 80 | W | 15 | 6.7 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | D clouds | |
| Roorkee | 28.81 | 731.8 | 29.68 | 753.9 | 93.8 | 34.3 | 12 | NW | 3.0 | 1.3 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | D. clouds | |
| Agra | 29.14 | 740.1 | 29.68 | 753.8 | 100.6 | 38.1 | 12 | W | ..... | ..... | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Nagpur | 28.66 | 728.1 | 29.67 | 753.6 | 98.0 | 36.7 | 26 | W | 4.6 | 2.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Lucknow | 29.31 | 744.4 | 29.67 | 753.6 | 101.7 | 38.7 | 41 | WNW | 2.1 | 1.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Allahabad | 29.36 | 745.7 | 29.66 | 753.3 | 97.9 | 36.6 | 26 | Calm | 1.3 | 0.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Patna | 29.44 | 747.7 | 29.61 | 752.1 | 99.8 | 37.7 | 13 | W | 2.1 | 0.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Hazaribagh | 27.69 | 703.3 | 29.63 | 752.7 | 93.8 | 34.3 | 39 | WNW | 7.2 | 3.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Cuttack | 29.59 | 751.7 | 29.67 | 753.7 | 92.1 | 33.4 | 57 | S | 3 | 1.3 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.63 | 752.6 | 29.65 | 753.2 | 90.1 | 32.8 | 63 | SSW | 10.0 | 4.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Goalpara | 29.23 | 742.4 | 29.61 | 752.0 | 88.7 | 31.5 | 48 | E | 5.2 | 2.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Chittagong | 29.63 | 752.7 | 29.73 | 755.0 | 86.7 | 27.1 | 97 | Calm | 6.2 | 2.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Misty | |
| Sibsagar | 29.39 | 746.5 | 29.73 | 755.0 | 77.8 | 25.4 | 71 | NE | 5.2 | 2.3 | ..... | ..... | 0 | ..... | ..... | 0.92 | 23.4 | Blue sky | |
| Jubbulpore | 28.36 | 720.3 | 29.69 | 754.0 | 92.9 | 33.8 | 15 | NW | 3.5 | 1.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,355 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.09 | 738.8 | 29.50 | 749.2 | 58.1 | 14.5 | 64 | S | 4.9 | 2.2 | ..... | ..... | 8 | ..... | ..... | 0.106 | 2.7 | ..... | Prof. Giovanni Clodig. |
| Milan | 28.99 | 736.3 | 29.50 | 749.3 | 56.1 | 13.4 | 42 | W | ..... | ..... | 4 | ..... | 3 | W | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.38 | 746.3 | 29.49 | 749.1 | 58.8 | 14.9 | 50 | WSW | 11.9 | 5.3 | ..... | ..... | 1 | WSW | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.61 | 726.6 | 29.51 | 749.5 | 55.0 | 12.8 | 51 | SW | 1.8 | 0.8 | ..... | ..... | 5 | ENE | ..... | 0.346 | 8.8 | ..... | Prof. P. F. Denza. |
| Genoa | 29.41 | 746.9 | 29.60 | 751.7 | 53.6 | 12.0 | 67 | SE | 10.5 | 4.7 | ..... | ..... | 10 | S | ..... | 0.067 | 1.7 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.60 | 701.1 | 29.52 | 749.7 | 54.3 | 12.4 | 58 | E | ..... | ..... | 4 | ..... | 5 | NW | ..... | 0.087 | 2.2 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.50 | 749.2 | 29.54 | 750.4 | 59.4 | 15.2 | 53 | SW | 15.0 | 6.7 | ..... | ..... | 4 | W | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.41 | 746.9 | 29.66 | 753.4 | 53.1 | 12.7 | 54 | WSW | ..... | ..... | 4 | ..... | 10 | WSW | ..... | 0.630 | 16.0 | ..... | Cav. F. Meucci |
| Leghorn | 29.57 | 751.0 | 29.65 | 753.1 | 54.5 | 12.5 | 62 | WSW | ..... | ..... | 8 | ..... | 10 | WSW | ..... | 0.118 | 3.0 | ..... | Prof. P. Monte. |
| Rome | 29.53 | 750.1 | 29.71 | 754.5 | 59.2 | 15.1 | 53 | W | 16.8 | 7.5 | ..... | ..... | 7 | ..... | ..... | 0.228 | 5.8 | ..... | Prof. P. S. Ferrari |
| Lecce | 29.38 | 746.3 | 29.63 | 752.7 | 59.0 | 15.0 | 53 | NW | 28.0 | 12.5 | ..... | ..... | 3 | NW | ..... | 0.031 | 0.8 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.90 | 734.0 | 29.78 | 756.4 | 54.3 | 11.4 | 65 | SW | 10.5 | 4.7 | ..... | ..... | 10 | ..... | ..... | 0.791 | 20.1 | ..... | Prof. D. Conti. |
| Cagliari | 29.56 | 750.9 | 29.76 | 755.8 | 61.7 | 16.5 | 38 | NW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0.039 | 1.0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.58 | 751.2 | 29.83 | 757.6 | 62.1 | 16.7 | 48 | WSW | 9.4 | 4.7 | ..... | ..... | 5 | WSW | ..... | 0.217 | 5.5 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.79 | 756.7 | 29.86 | 758.5 | 63.3 | 17.4 | 41 | WSW | 21.0 | 9.4 | ..... | ..... | 5 | WSW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.20 | 741.6 | 29.75 | 755.7 | 53.6 | 12.0 | 69 | SW | 11.2 | 5.0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. V. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.23 | 767.8 | 30.25 | 768.3 | 49.2 | 9.6 | 94 | E | 1.8 | 0.8 | ..... | ..... | 1ck | ..... | ..... | 0.015 | 0.38 | Fair | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.97 | 761.2 | 30.18 | 766.6 | 55.3 | 12.9 | 90 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0.140 | 3.56 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 30.14 | 765.5 | 30.21 | 767.3 | 45.9 | 7.7 | 96 | N | 4.9 | 2.2 | ..... | ..... | 10n | ..... | ..... | 0.385 | 9.78 | Light rain | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.10 | 637.5 | 30.25 | 768.4 | 46.0 | 7.8 | 36 | Calm | ..... | ..... | 0 | 0 | 1 | ..... | ..... | 0 | 0 | Clear | Prof. L. Perez. |
| Leon | 24.44 | 621.0 | 30.13 | 765.5 | 59.0 | 15.0 | 60 | NW | ..... | ..... | 3 | 0 | 1k | ..... | Calm | 0 | 0 | Clear | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.10 | 586.8 | 30.07 | 763.8 | 56.3 | 13.5 | 63 | Calm | 0 | 0 | ..... | 0 | 10k | ..... | SW | 0 | 0 | Hazy | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 58.5 | 14.7 | 28 | NW | ..... | ..... | 1 | 2c | 2k | SW | SW | 0 | 0 | Fair | M. V. de Leon, M. E. |
| Tlacotalpam | 29.83 | 757.6 | 29.84 | 757.9 | 77.2 | 25.1 | 90 | S | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | M. M. Chàzaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.42 | 594.9 | 30.19 | 766.7 | 51.6 | 10.9 | 81 | N | 0.4 | 0.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. |
| Colima | 28.40 | 721.4 | 30.05 | 763.3 | 74.7 | 23.7 | 44 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Fine | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guera |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201 m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.75 | 755.7 | 29.75 | 755.7 | 46.0 | 7.8 | ..... | SE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.69 | 754.1 | 29.74 | 755.5 | 37.0 | 2.8 | ..... | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.138 | 3.5 | ..... | |
| Helder | 29.75 | 755.6 | 29.75 | 755.6 | 36.0 | 2.2 | ..... | WNW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.008 | 0.2 | ..... | |
| Hellevoetsluis | 29.74 | 755.5 | 29.74 | 755.5 | 46.5 | 8.6 | 64 | SW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.72 | 754.8 | 29.76 | 756.0 | 43.0 | 6.1 | 27 | N | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Light clouds | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.85 | 758.1 | 29.90 | 759.5 | 45.0 | 7.2 | 39 | NNW | 15.0 | 6.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.89 | 759.2 | 29.93 | 760.2 | 32.9 | 0.5 | 64 | NNE | 27 | 12 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.71 | 754.5 | 29.85 | 758.3 | 45.9 | 7.7 | 28 | E | 9 | 4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.36 | 745.8 | 29.41 | 746.9 | 28.9 | — 1.7 | 86 | S | 25 | 11 | ..... | ..... | 10 | ..... | ..... | 0.539 | 13.7 | Snowing..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.84 | 757.9 | 30.03 | 762.8 | 56.1 | 13.4 | 80 | WSW | 5.6 | 2.5 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.58 | 726.0 | 29.63 | 752.5 | 51.4 | 10.5 | 80 | WSW | 12.5 | 5.6 | ..... | ..... | 10 | WSW | ..... | 0.559 | 14.2 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 29.88? | 758.9? | 29.96? | 761.1? | 64.9 | 18.3 | 62 | WSW | 18.1 | 8.1 | ..... | ..... | 3 | ..... | ..... | 0.343 | 8.7 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.22 | 742.1 | 29.58 | 751.4 | 58.4 | 11.9 | 82 | SW | 21.0 | 9.4 | ..... | ..... | 10 | ..... | ..... | 0.843 | 21.4 | Light rain... | The Staff. |
| Ponta Delgada, (Azores) | 29.91 | 759.6 | 29.98 | 761.4 | 62 6 | 17.0 | 57 | NW | 21.7 | 9.7 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from — | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa. Com'd.t. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| Duque da Terceira, N. 14° 06′ 44″, W. 21° 48′ 20″ | ..... | ..... | 30.06 | 763.5 | 71.6 | 22 | ..... | ENE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 3 | ..... | D. clouds.... | C.C.da Fonseca Ferreira, Comd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, St. Thomas, Gulf of Guinea | ..... | ..... | 29.90 | 759.5 | 85 1 | 29.5 | ..... | SSE | ..... | ..... | 2 | ..... | 3 | ..... | SE | 1 | SE | D. clouds..... | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. San Jose de Bissao, Senegambia | ..... | ..... | 29.91 | 759.8 | 82 8 | 28.2 | ..... | SW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | A. Ferreira, 2d Lt. |
| Sá da Bandeira, Ambrizette, 8. 7° 13′, E. 12° 52′ | ..... | ..... | 29.76 | 756.0 | 82.4 | 28.0 | ..... | W | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 3 | SW | D clouds..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't |
| Tejo. Macao, China | ..... | ..... | 29.89 | 759.3 | 65.1 | 18.4 | ..... | NNW | ..... | ..... | 3 | ..... | 10 | ..... | NNW | 2 | NNW | Overcast..... | J. M. T. Guimaraes, Com'd't |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.02 | 737.0 | 29.45 | 748.0 | 34.7 | 1.5 | 96 | NNE | 16 | 7 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing..... | Astronomical Obs. |
| Wilna | 29.26 | 743.2 | 29.69 | 754.0 | 39.2 | 4.0 | 69 | ENE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.63 | 752.7 | 29.89 | 759.1 | 36.5 | 2.5 | 46 | ESE | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.90 | 759.4 | 29.91 | 759.8 | 37.9 | 3.3 | 47 | SSE | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 28.72 | 729.5 | 29.35 | 745.4 | 51.1 | 10.6 | 85 | ESE | 22 | 10 | ..... | ..... | 10c;ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.29 | 743 9 | 29.36 | 745.7 | 62.4 | 16.9 | 56 | SSW | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.50 | 749.2 | 29.52 | 749.7 | 57.9 | 14.4 | 69 | SE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.41 | 746.9 | 29.97 | 761.3 | 34.7 | 1.5 | 38 | SSE | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.45 | 748.1 | 29.65 | 753.2 | 63.0 | 17.2 | 51 | E | 22 | 10 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Archangel | 29.76 | 756.0 | 29.78 | 756.5 | 35.4 | 1.9 | 77 | WSW | 9 | 4 | ..... | ..... | 3cs | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.49 | 723.7 | 29.85 | 758.3 | 73.2 | 22.9 | 38 | Calm | 0 | 0 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 29.93 | 760.3 | 29.85 | 758.2 | 64.6 | 18.1 | 36 | W | 9 | 4 | ..... | ..... | 8cs;s | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.32 | 744.6 | 29.80 | 757.0 | 32.4 | 0.2 | 83 | NNW | 11 | 5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.52 | 749.8 | 29.80 | 756.9 | 29.3 | — 1.5 | 78 | NNW | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 28.71 | 729.1 | 29.70 | 754.4 | 28.6 | — 1.9 | 86 | NE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.64 | 752.9 | 29.87 | 758.8 | 59.4 | 15.2 | 87 | WSW | 9 | 4 | ..... | ..... | 8cn | ..... | ..... | Blank | Blank | ..... | |
| Tashkend | 28.46 | 722.9 | 30.00 | 762.0 | 65.3 | 18.5 | 65 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Teich, A. M. |
| Barnaul | 29.46 | 748.2 | 29.97 | 761.2 | 41.9 | 5.5 | 70 | NE | 0 | 0 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.74 | 755.3 | 30.04 | 762.9 | 38.7 | 3.7 | 66 | ESE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking, (China) | 30.13 | 765.2 | 30.27 | 768.8 | 41.5 | 5.3 | 51 | S | 9 | 4 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 30.18 | 766.6 | 30.28 | 769.1 | 29.3 | — 1.5 | *94 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.52 | 749.8 | 29.63 | 752.5 | 55.9 | 13.3 | 65 | SSW | 3.5 | 1.59 | ..... | ..... | 9 | ..... | ..... | 0.120 | 3.05 | Covered..... | Antonio Rave, Director. |
| Bilbao, Met. Obs'y | 29.49 | 749.0 | 29.55 | 750.5 | 52.2 | 11.2 | 87 | SE | 3.0 | 1.33 | ..... | ..... | 10 | ..... | ..... | 0.217 | 5.5 | Rainy ..... | Prof. Manuel de Navera |
| Burgos, Met. Obs'y | 26.55 | 674.3 | ..... | ..... | 38.5 | 3.6 | 90 | SW | 11.8 | 5.28 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Domingo Martin y Perez. |
| Madrid, Royal Osservatory | 27.30 | 693.4 | ..... | ..... | 48.2 | 9.0 | 95 | SW | 16.4 | 7.33 | ..... | 0 | 10 | ..... | ..... | 0.256 | 6.5 | Raining..... | The Staff. |
| Murcia, Met. Obs'y | 29.49 | 749.0 | 29.64 | 752.8 | 69.8 | 21.0 | 44 | S | 4.5 | 2.00 | ..... | 1 | 3 | N | ..... | 0 | 0 | Cloudy..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.54 | 725.0 | 29.42 | 747.2 | 46.6 | 8.1 | 90 | SW | 7.4 | 3.3 | ..... | ..... | 10 | ..... | ..... | 0.512 | 13.0 | Raining..... | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.01 | 762.2 | 30.07 | 763.8 | 68.2 | 20.1 | 74 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.86 | 758.6 | 29.92 | 759.9 | 84.2 | 29.0 | 62 | E | 2.7 | 1.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.63 | 752.5 | 29.73 | 755.0 | 55.9 | 13.3 | 89 | S | 16.4 | 7.3 | ..... | 0 | 10 | ..... | SW | 0.253 | 6.4 | Raining..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W.I | 29.95 | 760.8 | 30.04 | 763.1 | 77.7 | 25.4 | 83 | SE | 0 | 0 | ..... | 6s | 3k | SE | SE | 0.079 | 2.00 | D. Clouds... | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.54 | 750.3 | 29.58 | 751.3 | 31.3 | — 0.4 | ..... | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.67 | 753.7 | 29.72 | 755.0 | 38.8 | 3.8 | 45 | NW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.76 | 756.0 | 29.82 | 757.3 | 42.1 | 5.6 | 79 | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.66 | 753.4 | 29.84 | 757.9 | 37.8 | 3.2 | 47 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.74 | 755.4 | 29.80 | 756.9 | 35.6 | 2.0 | 68 | NE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.74 | 755.5 | 29.82 | 757.4 | 41.2 | 5.1 | 47 | WSW | 4.0 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.21 | 716.4 | 29.68 | 753.8 | 39.6 | 4.2 | 42 | N | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Zurich | 28.06 | 712.7 | 29.76 | 755.9 | 36.3 | 2.4 | 61 | NE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | Cloudy | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —7.8 mm.; Thermometer,—7.4 Cent.; Relative Humidity,—15 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,338.6 feet, and that of Zurich 470 m., or 1,542.0 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.49 | 749.1 | 69.8 | 21.0 | 38 | WSW | 13 | 6.0 | ..... | ..... | 4 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.24 | 768.0 | 80.6 | 32.0 | ..... | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.70 | 754.3 | 61.9 | 16.6 | ..... | S | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.39 | 10. | Very cloudy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.67 | 753.6 | 29.79 | 756.6 | 85.3 | 29.6 | 37 | SSW | ..... | ..... | 4 | 2c | 9n | Calm | SW | 0 | 0 | Overcast | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.65 | 753.1 | 29.97 | 761.2 | 35 | 1.7 | ..... | SW | 1 | 0.4 | ..... | 0 | 2s | ..... | SW | 0 | 0 | Clear | W. R. Bigg. |
| *Chatham, N. B | 29.56 | 750.8 | 29.62 | 752.3 | 33 | 0.6 | 70 | SW | 10 | 4.5 | ..... | 2k | 0 | W | ..... | 0.06 | 1.5 | Fair | G. A. Blair. |
| Charlottetown, P. E. Island | 29.63 | 752.6 | 29.68 | 753.9 | 31 | — 0.6 | 100 | SW | 9 | 4.0 | ..... | 0 | 2s | ..... | W | 0.050 | 1.27 | Fair | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.68 | 753.9 | 29.88 | 758.9 | 31.2 | — 0.4 | 65 | SW | ..... | ..... | 1 | 0 | 3s | ..... | ..... | 0 | 0 | Fine | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 29.58 | 751.3 | 29.63 | 752.6 | 46.3 | 7.4 | 100 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.07 | 1.8 | Overcast | W. H. Revis. |
| *Father Point, Quebec | 29.51 | 749.6 | 29.58 | 750.0 | 27 | — 2.8 | 94 | W | 43 | 19.2 | ..... | 5k | 5ks | W | W | 0.16 | 4.1 | Cloudy | J. McWilliams. |
| Fredericton, N. B | 29.65 | 753.1 | 29.72 | 754.9 | 33.1 | 0.6 | 58 | NW | 10 | 4.5 | ..... | 0 | d | ..... | ..... | 0 | 0 | Fine | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.10 | 740.7 | 30.01 | 762.2 | 37 | 2.8 | 95 | N | 7 | 3.1 | ..... | 5k | 4n | N | N | 0.120 | 3.05 | Clearing | James Stewart. |
| Granton, Ontario | 28.81 | 731.8 | 29.94 | 760.5 | 36 | 2.2 | ..... | S | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | James Grant. |
| *Halifax, N. S | 29.61 | 752.1 | 29.75 | 755.6 | 36 | 2.2 | 62 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | F. Allison, M. A. |
| Hamilton, Ontario | 29.62 | 752.3 | 30.00 | 762.0 | 36.7 | 2.6 | 71 | SW | ..... | ..... | 1 | 5ck | 0 | SW | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.64 | 752.8 | 29.99 | 761.7 | 32 | 0.0 | 73 | S | 6 | 2.7 | ..... | 8c | 0 | SW | ..... | 0 | 0 | Fair | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.68 | 753.9 | 29.72 | 754.9 | 35.2 | 1.8 | 80 | W | 10 | 4.5 | ..... | 5k | 0 | SW | ..... | 0 | 0 | Fair | C. H. Rigby. |
| Moose Factory, Ontario | 29.97 | 761.2 | 30.01 | 762.2 | 15.4 | — 9.2 | 97 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.010 | 0.025 | Snowing | J. R. Nason. |
| *Montreal, Quebec | 29.67 | 753.6 | 29.88 | 758.9 | 30 | — 1.1 | 78 | W | 14 | 6.3 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Clear | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.24 | 742.7 | 29.96 | 761.0 | 26 | — 3.3 | 80 | E | 4 | 1.8 | ..... | 2cs | 5ks | E | E | 0 | 0 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 29.21 | 741.9 | 29.99 | 761.7 | 32.2 | 0.1 | 70 | SE | ..... | ..... | 1 | ..... | 10ks | ..... | ..... | 0 | 0 | Overcast | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.27 | 743.4 | 29.99 | 761.7 | 36 | 2.2 | 80 | S | 5 | 2.2 | ..... | ..... | Haze | ..... | ..... | 0 | 0 | Cloudy | H. Morgan. |
| Port Hastings, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Peter Grant. |
| Port Stanley, Ontario | 29.31 | 744.5 | 29.98 | 761.5 | 37 | — 2.8 | 80 | SE | 3 | 1.3 | ..... | ..... | 10n | ..... | SE | 0 | 0 | Cloudy | M. Payne. |
| *Quebec, Quebec | 29.45 | 748.0 | 29.79 | 756.7 | 26 | — 3.3 | 63 | W | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.44 | 747.8 | 29.92 | 760.0 | 28 | — 2.2 | 80 | NW | 3 | 1.3 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.72 | 754.9 | 29.77 | 756.1 | 34 | 1.1 | 74 | W | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| St. John, N. B | 29.53 | 750.0 | 29.70 | 754.4 | 32 | 0.0 | 79 | SW | 12 | 5.4 | ..... | 3k | 0 | ..... | ..... | 0 | 0 | Fine | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.19 | 741.4 | 29.93 | 760.2 | 35 | 1.7 | 90 | SE | 10 | 4.5 | ..... | 5cs | 2s | ..... | ..... | 0 | 0 | Cloudy | K. Stewart. |
| Stayner, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. J. Cole. |
| Stratford, Ontario | 28.56 | 725.4 | 29.87 | 758.7 | 34.4 | 1.3 | 86 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Overcast | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.67 | 753.6 | 29.71 | 754.6 | 41 | 5.0 | 60 | SW | 14 | 6.3 | ..... | 8k | 0 | SW | ..... | 0 | 0 | Fair | T. C. Hill. |
| *Toronto, Ontario | 29.60 | 751.8 | 30.00 | 762.0 | 33 | 0.6 | 78 | Calm | 0 | 0 | ..... | ..... | 8n | ..... | Calm | 0 | 0 | Cloudy | Magnetic Observatory. |
| Windsor, N. S | 29.63 | 752.6 | 29.73 | 755.1 | 36.5 | 2.5 | 85 | W | 10 | 4.5 | ..... | 3k | 0 | ..... | ..... | 0 | 0 | Fair | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 43.0 | 6.1 | 100 | S | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.15 | 3.8 | Rainy | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.80 | 756.9 | 30.03 | 762.8 | 40 | 4.4 | 39 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Alpena, Michigan | 29.22 | 742.2 | 29.89 | 759.2 | 33 | 0.6 | 79 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Atlanta, Georgia | 28.95 | 735.3 | 30.10 | 764.5 | 55 | 12.8 | 62 | S | 12 | 5.4 | ..... | 5c | Haze | Calm | Calm | 0 | 0 | Fair | |
| Atlantic City, New Jersey | 30.16 | 766.1 | 30.17 | 766.3 | 40 | 4.4 | 56 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Augusta, Georgia | 30.02 | 762.5 | 30.21 | 767.3 | 49 | 9.4 | 85 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 30.12 | 765.0 | 30.17 | 766.3 | 43 | 6.1 | 51 | W | 4 | 1.8 | ..... | 5k | 5s | W | Calm | 0 | 0 | Cloudy | |
| Barnegat, New Jersey | 30.10 | 764.5 | 30.12 | 765.0 | 46 | 7.8 | 54 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 28.14 | 714.7 | 29.99 | 761.7 | 35 | 1.7 | 80 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boerne, Texas | 28.36 | 720.3 | 29.63 | 752.6 | 66 | 18.9 | 100 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Boise City, Idaho | 26.89 | 683.0 | 29.85 | 758.2 | 41 | 5.0 | 74 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boston, Massachusetts | 29.84 | 757.9 | 30.00 | 762.0 | 39 | 3.9 | 46 | W | 16 | 7.2 | ..... | 1c | 0 | NW | ..... | 0 | 0 | Clear | |
| Brackettville, Texas | 28.66 | 728.0 | 29.65 | 753.1 | 68 | 20.0 | 90 | E | 5 | 2.2 | ..... | ..... | 10s | ..... | SE | 0.03 | 0.8 | Cloudy | |
| Breckenridge, Minnesota | 28.91 | 734.3 | 29.92 | 760.0 | 40 | 4.4 | 91 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Brownsville, Texas | 29.75 | 755.6 | 29.80 | 756.9 | 77 | 25.0 | 82 | SE | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.27 | 743.4 | 29.98 | 761.5 | 36 | 2.2 | 57 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 51 | 10.6 | 28 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.63 | 752.6 | 29.93 | 760.2 | 32.5 | 0.3 | 74 | S | 5 | 2.2 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Cairo, Illinois | 29.64 | 752.8 | 30.03 | 762.8 | 52 | 11.1 | 73 | Calm | 0 | 0 | ..... | 5c | Haze | W | ..... | 0 | 0 | Fair | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.16 | 639.0 | 29.96 | 761.0 | 35 | 1.7 | 61 | E | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 34 | 1.1 | 61 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Campo, California | 27.45 | 697.2 | 30.02 | 762.5 | 43 | 6.1 | 100 | SW | 2 | 0.9 | ..... | ..... | Fog | ..... | SW | 0 | 0 | Foggy | |
| Cape Hatteras, N. Carolina | 30.24 | 768.1 | 30.25 | 768.3 | 55 | 12.8 | 62 | S | 7 | 3.1 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Cape Henry, Virginia | 30.18 | 766.6 | 30.20 | 767.1 | 47 | 8.3 | 62 | SW | 14 | 6.3 | ..... | 2c | 0 | SW | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.24 | 768.1 | 30.25 | 768.3 | 56 | 13.3 | 57 | S | 8 | 3.6 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Cape May, New Jersey | 30.11 | 764.8 | 30.14 | 765.5 | 43 | 6.1 | 66 | W | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Castroville, Texas | 29.02 | 737.1 | 29.69 | 754.1 | 40 | 4.4 | 90 | SE | 4 | 1.8 | ..... | ..... | 10n | ..... | SE | 0.02 | 0.5 | Light rain | |
| Charleston, South Carolina | 30.17 | 766.3 | 30.22 | 767.6 | 62 | 16.7 | 67 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 23.94 | 608.1 | 29.88 | 758.9 | 37 | 2.8 | 63 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Threatening | |
| Chicago, Illinois | 29.08 | 738.6 | 29.76 | 755.9 | 51 | 10.6 | 66 | SW | 8 | 3.6 | ..... | 0 | 5ks | ..... | W | 0.11 | 2.8 | Fair | |
| Cincinnati, Ohio | 29.35 | 745.5 | 30.00 | 762.0 | 48 | 8.9 | 56 | SE | 3 | 1.3 | ..... | 6cs;k | 0 | W | ..... | Inap. | Inap. | Fair | |
| Cleveland, Ohio | 29.24 | 742.7 | 29.97 | 761.2 | 40 | 4.4 | 65 | SE | 9 | 4.0 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Light rain | |
| Coleman City, Texas | 28.03 | 711.9 | 29.65 | 753.1 | 60 | 15.6 | 88 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | W | 0.72 | 18.3 | Light rain | |
| Columbus, Ohio | 29.12 | 739.6 | 29.95 | 760.7 | 50 | 10.0 | 39 | S | 6 | 2.7 | ..... | 8k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Concho, Texas | 27.90 | 708.6 | 29.52 | 749.8 | 64 | 17.8 | 94 | SW | 3 | 1.3 | ..... | ..... | 10s | ..... | SW | 0.19 | 4.8 | Cloudy | |
| Corsicana, Texas | 29.44 | 747.8 | 29.90 | 759.4 | 61 | 16.1 | 88 | SE | 1 | 0.4 | ..... | ..... | 10s | ..... | W | 0 | 0 | Threatening | |
| Davenport, Iowa | 29.19 | 741.4 | 29.81 | 757.2 | 52 | 11.1 | 73 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Deadwood, Dakota | 25.28 | 642.1 | ..... | ..... | 32 | 0.0 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Decatur, Texas | 28.63 | 727.2 | 29.76 | 755.9 | 60 | 15.6 | 94 | E | 16 | 7.2 | ..... | ..... | 8s | ..... | SW | 0 | 0 | Cloudy | |
| Denison, Texas | 29.10 | 739.1 | 29.88 | 758.9 | 58 | 14.4 | 82 | SE | 7 | 3.1 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.65 | 626.1 | 29.87 | 758.7 | 40 | 4.4 | 91 | N | 16 | 7.2 | ..... | 2ck | 8s | N | N | 0.80 | 20.3 | Cloudy | |
| Des Moines, Iowa | 29.00 | 736.6 | 29.88 | 758.9 | 47 | 8.3 | 62 | Calm | 0 | 0 | ..... | 5c | Haze | NW | Calm | 0 | 0 | Fair | |
| Detroit, Michigan | 29.22 | 742.2 | 29.89 | 759.2 | 42 | 5.6 | 83 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Dodge City, Kansas | 27.16 | 689.8 | 29.38 | 746.2 | 52 | 11.1 | 73 | SE | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 29.13 | 739.9 | 29.82 | 757.4 | 47 | 8.3 | 55 | NW | 5 | 2.2 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Duluth, Minnesota | 29.21 | 741.9 | 29.90 | 759.4 | 37 | 2.8 | 90 | NE | 2 | 0.9 | ..... | ..... | 10s | ..... | NE | 0.02 | 0.5 | Cloudy | |
| Eagle Pass, Texas | 28.97 | 735.8 | 29.68 | 753.9 | 71 | 21.7 | 85 | SE | 6 | 2.7 | ..... | 0 | 5s | ..... | SE | 0 | 0 | Fair | |
| Eastport, Maine | 29.70 | 754.4 | 29.77 | 756.1 | 34 | 1.1 | 61 | W | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 70 | 21.1 | 85 | S | ..... | 6 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.18 | 665.0 | ..... | ..... | 37 | 2.8 | 45 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.24 | 742.7 | 29.96 | 761.0 | 44 | 6.7 | 63 | S | 8 | 3.6 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Fair | |
| Escanaba, Michigan | 29.19 | 741.4 | 29.86 | 758.4 | 34 | 1.1 | 90 | NE | 4 | 1.8 | ..... | 2ck | 5n | NE | NE | 0.06 | 1.5 | Light rain | |
| Florence, Arizona | 28.53 | 724.6 | 30.13 | 765.3 | 45 | 7.2 | 53 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0.13 | 3.3 | Clear | |
| Fort Buford, Dakota | 27.92 | 709.2 | ..... | ..... | 34 | 1.1 | 90 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.39 | 644.9 | 29.45 | 748.0 | 35 | 1.7 | 45 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.10 | 637.5 | 30.06 | 763.5 | 47 | 8.3 | 21 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.37 | 746.0 | 29.89 | 759.2 | 59 | 15.0 | 54 | SE | 4 | 1.8 | ..... | 10cs | 0 | S | ..... | 0 | 0 | Cloudy | |
| Fort Griffin, Texas | 28.51 | 724.1 | 29.74 | 755.4 | 60 | 15.6 | 82 | S | 6 | 2.7 | ..... | 0 | 5s | ..... | Calm | 0.08 | 2.0 | Fair | |
| Fort Keogh, Montana | 27.30 | 693.4 | ..... | ..... | 41 | 5.0 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort McKavett, Texas | 27.57 | 700.3 | 29.41 | 747.0 | 65 | 18.3 | 89 | SW | 4 | 1.8 | ..... | 2k | 8s | Calm | SW | Inap. | Inap. | Cloudy | |
| Fort St. Michael, Alaska | 29.34 | 745.2 | 29.37 | 746.0 | 6 | —14.4 | 100 | N | 29 | 13.0 | ..... | ..... | 10n | ..... | N | 0.02 | 0.5 | Snowing | |
| Fort Sill, Indian Territory | 28.56 | 725.4 | 29.64 | 752.8 | 57 | 13.9 | 81 | Calm | 0 | 0 | ..... | 2c | 5s | SE | Calm | 0 | 0 | Cloudy | |
| Fort Stevenson, Dakota | 28.15 | 715.0 | ..... | ..... | 33 | 0.6 | 61 | Calm | 0 | 0 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fredericksburg, Texas | 28.08 | 713.2 | 29.58 | 751.3 | 66 | 18.9 | 95 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 29.86 | 758.4 | 29.90 | 759.4 | 71 | 21.7 | 85 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Graham, Texas | 28.70 | 729.0 | 29.71 | 754.6 | 63 | 17.2 | 78 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 29.14 | 740.1 | 29.79 | 756.7 | 43 | 6.1 | 83 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0.05 | 1.3 | Cloudy | |
| Indianapolis, Indiana | 29.14 | 740.1 | 29.91 | 759.7 | 51 | 10.6 | 53 | SE | 3 | 1.3 | ..... | 2c | 2s | W | Calm | 0.16 | 4.1 | Cloudy | |
| Indianola, Texas | 29.83 | 757.7 | 29.86 | 758.4 | 72 | 22.2 | 85 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Fair | |
| Jacksboro, Texas | 28.65 | 727.7 | 29.74 | 755.4 | 62 | 16.7 | 88 | SE | 14 | 6.3 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Jacksonville, Florida | 30.15 | 765.8 | 30.17 | 766.3 | 67 | 19.4 | 74 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | SE | 0 | 0 | Cloudy | |
| Keokuk, Iowa | 29.20 | 741.7 | 29.81 | 757.2 | 54 | 12.2 | 61 | W | 9 | 4.0 | ..... | ..... | 9s | ..... | ..... | 0 | 0 | Clear | |
| Key West, Florida | 30.05 | 763.3 | 30.08 | 764.0 | 74 | 23.3 | 72 | E | 11 | 4.9 | ..... | 2k | 0 | E | W | 0 | 0 | Cloudy | |
| Kittyhawk, North Carolina | 30.19 | 766.8 | 30.21 | 767.3 | 51 | 10.6 | 65 | SW | 11 | 4.9 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.12 | 739.6 | 30.15 | 765.8 | 42.5 | 5.8 | 75 | E | 3 | 1.3 | ..... | 10cs | Fog | W | ..... | 0 | 0 | Fair | |
| La Crosse, Wisconsin | 29.04 | 737.6 | 29.77 | 756.1 | 46 | 7.8 | 69 | W | 2 | 0.9 | ..... | 5k | 0 | W | ..... | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 26.20 | 665.5 | 30.35 | 770.9 | 38 | 3.3 | 54 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Fair | |
| Laredo, Texas | 29.30 | 744.2 | 29.62 | 752.3 | 75 | 23.9 | 68 | N | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.02 | 737.1 | 29.86 | 758.4 | 48 | 8.9 | 78 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.72 | 754.9 | 30.06 | 763.5 | 54.5 | 12.5 | 74 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Louisville, Kentucky | 29.44 | 747.8 | 30.00 | 762.0 | 50 | 10.0 | 52 | S | 6 | 2.7 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Cloudy | |
| Lynchburg, Virginia | 29.44 | 747.8 | 30.14 | 765.5 | 45 | 7.2 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Smoky | |
| Madison, Wisconsin | 29.76 | 730.5 | 29.74 | 755.4 | 45 | 7.2 | 76 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.13 | 739.9 | 29.84 | 757.9 | 40 | 4.4 | 82 | Calm | 0 | 0 | ..... | 8k | 0 | SW | ..... | 0.05 | 1.3 | Clear | |
| Mason, Texas | 28.18 | 715.8 | 29.87 | 758.7 | 67 | 19.4 | 79 | SE | 3 | 1.3 | ..... | ..... | 10s | ..... | S | 0.06 | 1.5 | Cloudy | |
| Memphis, Tennessee | 29.72 | 754.9 | 30.04 | 763.0 | 54 | 12.2 | 68 | SE | 2 | 0.9 | ..... | 5c | Fog | Calm | Calm | 0 | 0 | Cloudy | |
| Milwaukee, Wisconsin | 29.01 | 736.8 | 29.74 | 755.4 | 45 | 7.2 | 84 | S | 5 | 2.2 | ..... | 1cs | 1s | Calm | Calm | 0 | 0 | Fair | |
| Mobile, Alabama | 30.05 | 763.3 | 30.10 | 764.5 | 60 | 15.6 | 88 | S | 3 | 1.3 | ..... | 1ck | 5s | W | W | 0.12 | 3.0 | Fair | |
| Montgomery, Alabama | 29.90 | 759.4 | 30.13 | 765.3 | 57 | 13.9 | 59 | E | 1 | 0.4 | ..... | 8c;cs | 2s | NW | NW | 0 | 0 | Fair | |
| Morgantown, West Virginia | 28.95 | 735.3 | 30.01 | 762.2 | 45 | 7.2 | 61 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Mt. Washington, N. H. | 23.30 | 591.8 | 29.66 | 753.4 | 7 | —13.9 | 77 | NW | 78 | 34.8 | ..... | 2k | 0 | NW | ..... | 0.98 | 24.9 | Cloudy | |
| Nashville, Tennessee | 29.54 | 750.3 | 30.08 | 764.0 | 49 | 9.4 | 76 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 29.96 | 761.0 | 30.07 | 763.8 | 47 | 8.3 | 55 | W | 1 | 0.4 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| New London, Connecticut | 30.01 | 762.2 | 30.06 | 763.5 | 41 | 5.0 | 41 | NW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Orleans, Louisiana | 29.96 | 761.0 | 30.02 | 762.5 | 63 | 17.2 | 89 | E | 4 | 1.8 | ..... | 5cs | 0 | SW | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 30.01 | 762.2 | 30.06 | 763.5 | 40 | 4.4 | 39 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| New York, New York | 29.94 | 760.5 | 30.12 | 765.0 | 37 | 2.8 | 71 | SW | 8 | 3.6 | ..... | 1cs | Haze | Calm | ..... | 0 | 0 | Fair | |
| Norfolk, Virginia | 30.15 | 765.8 | 30.21 | 767.3 | 48 | 8.9 | 70 | SW | 9 | 4.0 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Fair | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 26.98 | 685.5 | 29.55 | 750.6 | 43 | 6.1 | 51 | NE | 12 | 5.4 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Olympia, Washington Ter. | 29.64 | 752.8 | 29.68 | 753.9 | 47.4 | 8.6 | 92 | S | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | 0.33 | 8.4 | Light rain | |
| Omaha, Nebraska | 28.75 | 730.2 | 29.84 | 757.9 | 48 | 8.9 | 63 | N | 6 | 2.7 | ..... | 5c | 5s | NW | Calm | 0 | 0 | Cloudy | |
| Oswego, New York | 29.69 | 754.1 | 30.02 | 762.5 | 38 | 3.3 | 63 | SW | 5 | 2.2 | ..... | 10c | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Pembina, Dakota | 29.11 | 739.4 | 29.95 | 760.7 | 37 | 2.8 | 100 | N | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Philadelphia, Pa | 30.09 | 764.3 | 30.14 | 765.5 | 41 | 5.0 | 57 | W | 5 | 2.2 | ..... | 2cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Phœnix, Arizona | 28.88 | 733.5 | 30.73 | 780.5 | 45 | 7.2 | 76 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Pike's Peak, Colorado | 17.52 | 445.0 | 29.73 | 755.1 | 11 | —11.7 | 100 | NE | 16 | 7.2 | ..... | ..... | 10n | ..... | NE | 1.36 | 34.5 | Light snow | |
| Pioche, Nevada | 23.92 | 607.6 | 29.68 | 753.9 | 33 | 0.6 | 79 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Pittsburg, Pennsylvania | 29.25 | 742.9 | 30.08 | 764.0 | 38 | 3.3 | 72 | Calm | 0 | 0 | ..... | 8k | Fog | NW | Calm | 0 | 0 | Cloudy | |
| Port Huron, Michigan | 29.22 | 742.2 | 29.90 | 759.4 | 39 | 3.9 | 73 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Portland, Maine | 29.85 | 758.2 | 29.90 | 759.4 | 36 | 2.2 | 53 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Portland, Oregon | 29.70 | 754.4 | 29.80 | 756.9 | 50.0 | 10.0 | 86 | SE | 6 | 2.7 | ..... | ..... | 10n | ..... | S | 0.15 | 3.8 | Light rain | |
| Prescott, Arizona | 24.66 | 626.4 | 30.02 | 762.5 | 31 | — 0.6 | 69 | W | 4 | 1.8 | ..... | 2c | 2s | Calm | Calm | 0.02 | 0.5 | Fair | |
| Pilot Point, Texas | 28.92 | 734.6 | 29.72 | 754.9 | 59 | 15.0 | 94 | E | 14 | 6.3 | ..... | 8k | 2s | SE | E | 0 | 0 | Cloudy | |
| Punta Rassa, Florida | 30.12 | 765.0 | 30.14 | 765.5 | 67 | 19.4 | 69 | NE | 7 | 3.1 | ..... | 2k | 0 | E | ..... | 0 | 0 | Clear | |
| Red Bluff, California | 29.57 | 751.1 | 29.93 | 760.2 | 52 | 11.1 | 86 | SE | 17 | 7.6 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | Light rain | |
| Rio Grande City, Texas | 29.59 | 751.6 | 29.78 | 756.4 | 74 | 23.3 | 86 | SE | ..... | ..... | 1 | 5c | 5s | Calm | SE | 0 | 0 | Cloudy | |
| Rochester, New York | 29.39 | 746.5 | 30.03 | 762.8 | 33 | 0.6 | 61 | SW | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Roseburg, Oregon | 29.24 | 742.7 | 29.80 | 756.9 | 48.0 | 8.9 | 96 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.37 | 9.4 | Cloudy | |
| Sacramento, California | 29.92 | 760.0 | 30.01 | 762.2 | 53 | 11.7 | 80 | SW | 11 | 4.9 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| St. Louis, Missouri | 29.36 | 745.7 | 29.93 | 760.2 | 50 | 10.0 | 58 | S | 13 | 5.8 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| St. Marks, Florida | 30.13 | 765.3 | 30.15 | 765.8 | 60 | 15.6 | 82 | SE | 7 | 3.1 | ..... | 2k | 2s | S | Calm | 0 | 0 | Fair | |
| St. Paul, Minnesota | 28.96 | 735.6 | 29.78 | 756.4 | 46 | 7.8 | 68 | NW | 9 | 4.0 | ..... | ..... | 10s | ..... | NW | Inap. | Inap. | Cloudy | |
| Salt Lake City, Utah | 25.47 | 646.9 | 29.80 | 756.9 | 42 | 5.6 | 66 | E | 4 | 1.8 | ..... | 4k | 0 | Calm | ..... | 0.10 | 2.5 | Fair | |
| San Antonio, Texas | 29.10 | 739.1 | 29.66 | 753.4 | 70 | 21.1 | 90 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| San Diego, California | 30.04 | 763.0 | 30.11 | 764.8 | 52 | 11.1 | 93 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Sandusky, Ohio | 29.28 | 743.7 | 29.95 | 760.7 | 46 | 7.8 | 77 | SW | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Threatening | |
| Sandy Hook, New Jersey | 30.09 | 764.3 | 30.12 | 765.0 | 45 | 7.2 | 53 | SW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Francisco, California | 29.98 | 761.5 | 30.05 | 763.3 | 52.6 | 11.4 | 90 | W | ..... | ..... | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Santa Fé, New Mexico | 22.97 | 583.4 | 29.51 | 749.5 | 26 | — 3.3 | 88 | S | 8 | 3.6 | ..... | ..... | 10n | ..... | S | Inap. | Inap. | Light snow | |
| Savannah, Georgia | 30.11 | 764.8 | 30.20 | 767.1 | 61 | 16.1 | 77 | E | 1 | 0.4 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Shreveport, Louisiana | 29.75 | 755.6 | 29.97 | 761.2 | 56 | 13.3 | 81 | SE | 2 | 0.9 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Silver City, New Mexico | 24.17 | 613.9 | 30.53 | 775.4 | 31 | — 0.6 | 68 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.22 | 767.6 | 30.25 | 768.3 | 57 | 13.9 | 69 | S | 7 | 3.1 | ..... | 1cs | 0 | W | ..... | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.90 | 759.4 | 30.04 | 763.0 | 49 | 9.4 | 64 | W | 5 | 2.2 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Fair | |
| Stockton, Texas | 26.89 | 683.0 | 29.89 | 759.2 | 53 | 11.7 | 42 | NW | 13 | 5.8 | ..... | 1k | 0 | Calm | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.90 | 759.4 | 29.95 | 760.7 | 43 | 6.1 | 59 | W | 20 | 8.9 | ..... | 5k | ..... | W | ..... | 0 | 0 | Fair | |
| Toledo, Ohio, | 29.21 | 741.9 | 29.89 | 759.2 | 47 | 8.3 | 70 | SW | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| Tucson, Arizona | 27.57 | 700.3 | 30.12 | 765.0 | 39 | 3.9 | 39 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Umatilla, Oregon | 29.41 | 747.0 | 29.89 | 759.2 | 50.0 | 10.0 | 78 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 26 | — 3.3 | 76 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Uvalde, Texas | 28.91 | 734.4 | 29.70 | 754.4 | 71 | 21.7 | 85 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.80 | 756.9 | 30.06 | 763.5 | 57 | 13.9 | 87 | SE | 8 | 3.6 | ..... | 2cs | 2s | SW | SE | 0 | 0 | Fair | |
| Virginia City, Montana | 24.07 | 611.4 | 29.55 | 750.6 | 34 | 1.1 | 52 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.62 | 752.3 | 30.00 | 762.0 | 49 | 9.4 | 93 | W | 3 | 1.3 | ..... | 2c | 5s | Calm | Calm | 0 | 0 | Fair | |
| Washington, D. C. | 30.04 | 763.0 | 30.16 | 766.1 | 43 | 6.1 | 67 | W | 2 | 0.9 | ..... | 1c | 1s | W | NW | 0 | 0 | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 45 | 7.2 | 68 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Wilmington, N. Carolina | 30.15 | 765.8 | 30.23 | 767.8 | 54 | 12.2 | 61 | S | 4 | 1.8 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.45 | 646.4 | 29.81 | 757.2 | 39 | 3.9 | 73 | SW | 7 | 3.1 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 30.00 | 762.0 | 30.04 | 763.0 | 39 | 3.9 | 47 | W | 22 | 9.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yankton, Dakota | 28.68 | 728.5 | 30.00 | 762.0 | 35 | 1.7 | 70 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yuma, Arizona | 29.87 | 758.7 | 30.04 | 763.0 | 53 | 11.7 | 54 | S | 1 | 0.4 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.38 | 720.8 | 29.76 | 755.9 | 55 | 12.8 | 55 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.01 | 762.2 | 30.06 | 763.5 | 71 | 21.7 | 63 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.25 | 641.3 | ..... | ..... | 64.2 | 17.9 | 87 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 1.57 | 39.9 | ..... | Thomas Herran. |
| Navassa, W. I | 29.93 | 760.2 | 30.01 | 762.2 | 80 | 26.7 | ..... | NE | 8.1 | 3.6 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.01 | 762.2 | 30.01 | 762.2 | 82 | 27.8 | 83 | E | ..... | ..... | 2 | 0 | 5k | ..... | ..... | 0.750 | 19.1 | Fair | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | 30.26 | 768.6 | 30.32 | 770.1 | 10.0 | —12.2 | 90 | E | 10 | 4.5 | ..... | 1c | 1s | NE | NE | 0 | 0 | Fair | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City. 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.69 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.97 | 761.2 | 54 | 12.2 | 52 | 11.1 | 93 | SW | 13 | 5.8 | ..... | ..... | 10 | ..... | WSW | Blank | Blank | ..... | ..... | Overcast..... | |
| Navy Yard, Pensacola, Fla. | 30.20 | 767.1 | 66 | 18.9 | 66 | 18.9 | 84 | SE | 15 | 6.7 | ..... | ..... | 2 | ..... | SW | 0 | 0* | ..... | ..... | Fair..... | |
| Navy Yard, Portsmouth, N.H | 29.97 | 761.2 | 60 | 15.6 | 35 | 1.7 | 73 | WSW | 4 | 1.8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant..... | |
| Naval Hospital, Yokohama, Japan.....* | 30.21‡ | 767.3‡ | ..... | ..... | 46.5 | 8.1 | 92 | NE | ..... | ..... | 1 | ..... | 10n | ..... | NE | 0.35 | 8.9 | ..... | ..... | Light rain.. | |
| Adams, Panama .....* | 29.97 | 761.2 | 80 | 26.7 | 79 | 26.1 | 95 | NW | ..... | ..... | 3 | ..... | 10 | ..... | NW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Alaska, N. 56° 05′, W. 134° 36′ .... | 29.49‡ | 749.0‡ | ..... | ..... | 37 | 2.8 | 90 | ESE | ..... | ..... | 5 | ..... | 10 | ..... | NW | 0.075 | 1.91 | Mod'ate | SW | Raining..... | |
| Alliance, Naples, Italy..... | 29.73‡ | 755.1‡ | ..... | ..... | 56 | 13.3 | 69 | W | ..... | ..... | 4 | ..... | 10 | ..... | W | ..... | ..... | ..... | ..... | Squally..... | |
| Ashuelot, Hong-Kong, China. ...* | 30.01‡ | 762.2‡ | ..... | ..... | 67 | 19.4 | 84 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Canonicus, New Orleans, La.....* | 30.03 | 762.8 | 48 | 8.9 | 64 | 17.8 | 94 | SE | ..... | ..... | 2 | ..... | 2 | ..... | SE | ..... | ..... | ..... | ..... | Fair ..... | |
| Colorado, New York, N. Y..... | 30.10 | 764.5 | 47 | 8.3 | 42 | 5.6 | 83 | W | 7 | 3.1 | ..... | ..... | 2 | ..... | W | 0 | 0 | ..... | ..... | Clear ..... | |
| Constitution N. 35° 11′, W. 12° 05 ..... | 29.76‡ | 755.9‡ | ..... | ..... | 59 | 15.0 | 94 | SW | ..... | ..... | 4 | ..... | 5 | ..... | W | ..... | ..... | Mod'ate | W | Pleasant..... | |
| Despatch, Genoa, Italy..... | 29.55‡ | 750.6‡ | ..... | ..... | 57 | 13.9 | 69 | SSE | ..... | ..... | 3 | ..... | 8 | ..... | SE | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Essex, S. 34° 27′, W. 53° 27′...* | 30.07 | 763.8 | 69 | 20.6 | 64 | 17.8 | 100 | NE | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Franklin, Norfolk, Va..... ....* | 30.31 | 769.9 | 64 | 17.8 | 47 | 8.3 | 77 | SSW | 7.4 | 3.3 | ..... | ..... | 2 | ..... | NW | 0 | 0 | ..... | ..... | Fair ..... | |
| Gettysburg, Genoa, Italy ..... .* | 29.68‡ | 753.9‡ | ..... | ..... | 56 | 13.3 | 81 | ENE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.1 | 2. | Long | S | Fair ..... | |
| Hartford, Montevideo, Uruguay.* | 30.06 | 763.5 | 68 | 20.0 | 72 | 22.2 | 67 | NNE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair..... | |
| Michigan, Erie, Pa.....† | 29.97‡ | 761.2‡ | ..... | ..... | 44 | 6.7 | 68 | S | ..... | ..... | 3 | ..... | 10 | ..... | WNW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monocacy, Shanghai, China.....* | 30.25‡ | 768.3‡ | ..... | ..... | 53 | 11.7 | 80 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ENE | ..... | ..... | ..... | ..... | Cloudy . ..... | |
| Monongahela Yokohama, Japan .....* | 30.18‡ | 766.6‡ | ..... | ..... | 50 | 10.0 | 72 | NE | ..... | ..... | 0–1 | ..... | 10 | ..... | ..... | Heavy | Heavy | ..... | ..... | Raining..... | |
| New Hampshire, Port Royal, S. C.....* | 30.25 | 768.3 | 64 | 17.8 | 63 | 17.2 | 78 | SE | 4 | 1.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear. ..... | |
| Onward, Callao, Peru.....†* | 30.04 | 763.0 | ..... | ..... | 68 | 20.0 | 90 | SE | .... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Long | W | Clear..... | |
| Palos, Tientsin, China.....* | 30.43 | 772.9 | 77 | 25.0 | 39 | 3.9 | 59 | SSE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 46 | 7.8 | 69 | SW | ..... | ..... | 1 | ..... | 2 | ..... | NE | ..... | ..... | ..... | ..... | Clear..... | |
| Pensacola. Iquique, Peru..... | 29.98‡ | 761.6‡ | ..... | ..... | 67 | 19.4 | 74 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear ..... | |
| Plymouth. Portsmouth, N. H ..... | 29.95‡ | 760.7‡ | ..... | ..... | 36 | 2.2 | 66 | WNW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Powhatan, Norfolk, Va..... .... | 30.16‡ | 766.1‡ | ..... | ..... | 53 | 11.7 | 37 | SSW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Quinnebaug, N. 36° 20′ W. 0° 52′..... .. | 29.76‡ | 755.9‡ | ..... | ..... | 66 | 18.9 | 74 | WSW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Ranger. Amoy, China.....* | 30.08‡ | 764.0‡ | ..... | ..... | 67 | 19.4 | 79 | ENE | ..... | ..... | 3 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Overcast..... | |
| Richmond. N. 7° 24′, E. 77° 02′..... | 29.80‡ | 756.9‡ | ..... | ..... | 85 | 29.4 | 80 | SW | ..... | ..... | 3 | ..... | 2 | ..... | SW | 0 | 0 | Smooth | ..... | Fair ..... | |
| Rio Bravo, Brownsville, Texas..... | 29.80 | 756.9 | 74 | 23.3 | 75 | 23.9 | 95 | S | ..... | ..... | 2 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Santee, Annapolis, Md..... ..... | 30.14‡ | 765.5‡ | ..... | ..... | 46 | 7.8 | 62 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | NW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Saratoga, N. 39° 35′, W. 43° 45′... .. | 30.31‡ | 769.9‡ | ..... | ..... | 62 | 16.7 | 83 | S | ..... | ..... | 6 | ..... | 2 | ..... | N | 0 | 0 | Mod'ate | S | D. clouds..... | |
| St. Louis, League Island, Pa ..... | 30.15‡ | 765.8‡ | ..... | ..... | 43 | 6.1 | 68 | WSW | 8 | 3.6 | ..... | ..... | 2 | ..... | WNW | 0 | 0 | ..... | ..... | Fair .... ..... | |
| Supply, New York, N. Y..... | 30.18‡ | 766.6‡ | ..... | ..... | 40 | 4.4 | 75 | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Trenton Villefranche, France..* | 29.53‡ | 750.0‡ | ..... | ..... | 60 | 15.6 | 45 | SW | ..... | ..... | 0–1 | ..... | 0 | ..... | ..... | 0.01 | 0.3 | Mod'ate | S | Clear..... | |
| Tuscarora. Acapulco, Mexico.....* | 29.91‡ | 759.7‡ | ..... | ..... | 78 | 25.6 | 73 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | Calm | 0 | 0 | Smooth | ..... | Clear..... | |
| Vandalia Hampton Roads, Va....† | 30.15‡ | 765.8‡ | ..... | ..... | 49 | 9.4 | 85 | WSW | ..... | ..... | 3 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Wabash, Boston, Mass..... ..... | 29.98‡ | 761.5‡ | ..... | ..... | 35 | 1.7 | 83 | W | 14 | 6.3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Wyoming, Beirut, Syria... .....* | 29.79‡ | 756.7‡ | ..... | ..... | 78 | 25.6 | 86 | SE | ..... | ..... | 3–4 | ..... | 10 | ..... | SE | ..... | ..... | Smooth | SE | Cloudy ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | |
| S. S. City of Tokio, Capt. Maury N. 34° 55′, W. 159° 23′ | | 30.34‡ | 770.6‡ | 58 | 14.4 | | W | | | 3 | | Fog | | | 0 | Heavy | NW | Foggy | L. B. Walls. |
| S. S. Colima. N. 11° 58′, W. 88° 07′....† | | 29.99‡ | 761.7‡ | 81 | 27.2 | | NE | | | 3 | | 6 | | S | 0 | Small | E | D. clouds | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota, Capt. H. G. Morse, N. 38° 03′, W. 123° 04′...†. | | 30.05‡ | 763.3‡ | | | | SW | | | 1 | | 10 | | | Light | Small | NW | Hazy | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Granada, Capt. Austin. | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, S. 34° 06′ E. 156° 12′ | | 30.21‡ | 767.3‡ | | | | SW | | | 6 | | 7 | | SW | | Heavy | | Bad | R. C. Ghest, 1st Officer |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroi *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer. | | | | | | | | | | | | | | | | | | | J. A. Thompson, 2d Offr |
| S. S. Gaelic, N. 41° 07′, E. 153° 20′....*. | | 30.33‡ | 770.4‡ | 44 | 6.7 | ?? | SSE | | | 5 | | 8 | | SE | Blank | Swell | S | Overcast | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, | | | | | | | | | | | | | | | | | | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the co-operation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 46° 54′, W. 31° 20′ | | 30.21‡ | 767.3‡ | 55.0 | 12.8 | 74 | NNE | | | 3 | | 8 | | NE | | Rough | N | Rainy | Capt. C. Undütsch. |
| S. S. Leipzig, N. 44° 37′, W. 51° 00′ | | 29.87‡ | 758.7‡ | 45.5 | 7.5 | 100 | SSE | | | 4 | | 10 | | | 0 | Mod'ate | S | Foggy | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, Capt. G. Meyer, Baltimore, Md | | ?29.94‡ | ?760.5‡ | | | | NNE | | | 2 | | 5 | | N | | | | Fair | G. Risius, 3rd Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |

### AMERICAN S. S. CO. MARINE SERIES.

Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Indiana, N. 38° 49′, W. 74° 16′ | | 30.13‡ | 765.3‡ | 45 | 7.2 | | SSW | | | 3 | | 0 | | | 0 | | | Clear | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

### RED STAR LINE MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |

### ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| Peruvian, Baltimore, Md | | 30.04† | 763.0‡ | 50 | 10.0 | 86 | SE | | | 2 | | 0 | | | | | | Clear | J. Powell, 4th Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

### MARINE SERIES. (Miscellaneous.

Furnished by the cooperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
| Brigantine "George," of Halifax | | | | | | | | | | | | | | | | | | | Willard N. Pratt. |

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

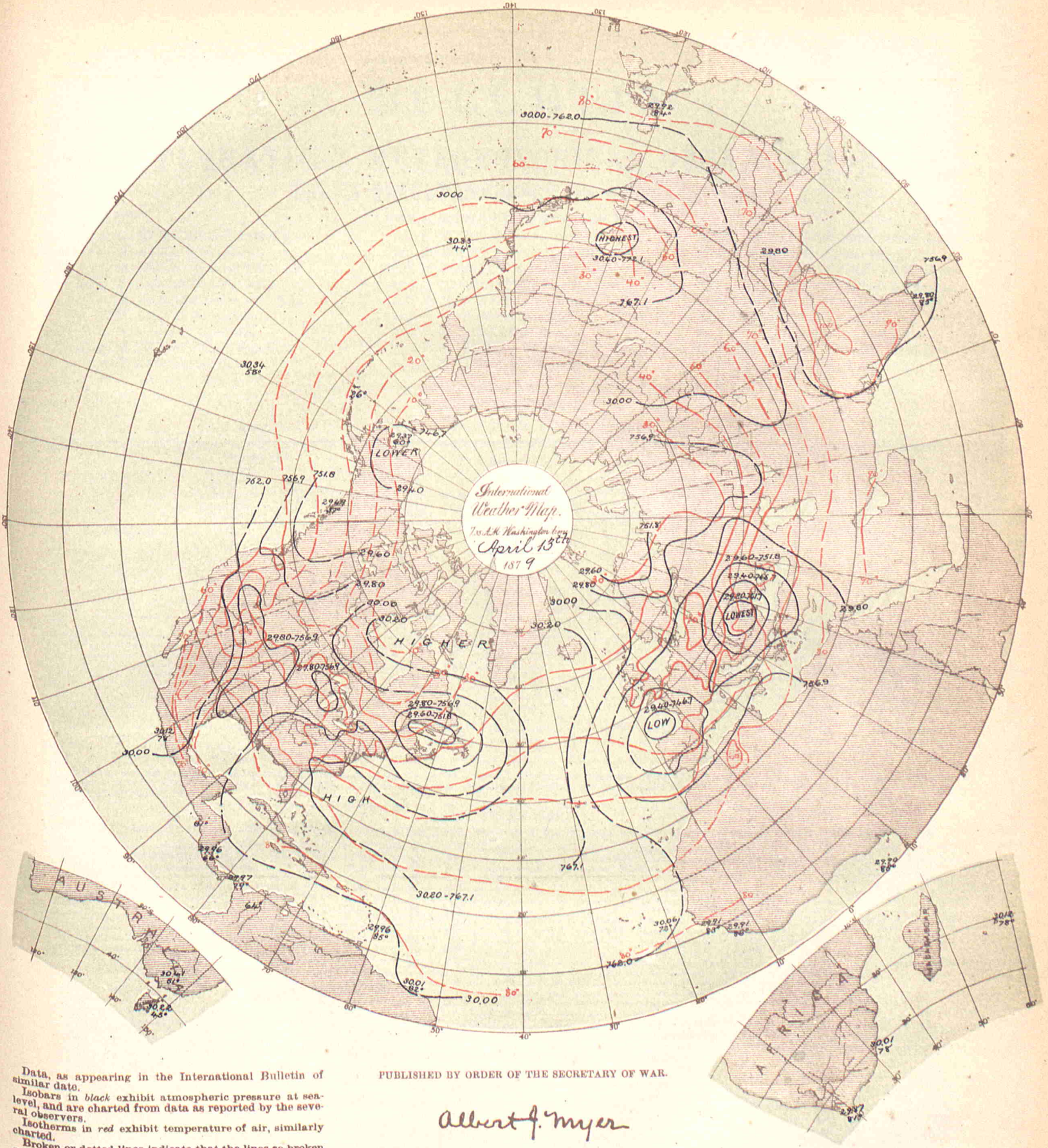
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*


International
Weather Map.
7 A.M. Washington Time
April 13th
1879
HIGHEST
LOWER
LOWEST
HIGHER
HIGH
LOW
AUSTRIA
AFRICA
30.00-762.0
30.20-767.1
29.80-756.9
29.60-751.8
29.40-746.7
29.60-751.8
29.40-746.7
29.80-756.9
29.80-756.9
29.60-751.8
30.00
30.20
29.80
29.60
29.40
3000
2980
2960
2940
762.0
756.9
751.8
746.7
767.1
761.8
30.34 55°
30.33 44°
30.12 74°
30.06 78°
30.01 78°
30.00 82°
30.00
30.20
3000
2980
2960
2940
2920
2900
2880
2860
2840
2820
2800
2780
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2680
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2620
2600
2580
2560
2540
2520
2500
2480
2460
2440
2420
2400
2380
2360
2340
2320
2300
2280
2260
2240
2220

# BULLETIN

OF

# INTERNATIOAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 14, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 29.76 | 755.9 | 72.3 | 22.4 | 67 | Calm | | | 0 | | 8 | | | 0 | 0 | Very cloudy | Kesxuche. |
| Algiers | | | 29.69 | 754.0 | 66.1 | 18.4 | 59 | W | | | 2 | | 10 | | | 0 | 0 | Covered | Tourilliere. |
| La Calle | | | 29.73 | 755.1 | 85.6 | 29.8 | 22 | SSE | | | 2 | | 2 | | | 0 | 0 | Fair | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 29.88 | 759.0 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 29.79 | 756.6 | 68.0 | 20.0 | 20 | N | | | 4 | | 2 | | | 0 | 0 | Fair | Herbin. |
| Tebessa | | | 29.88 | 758.9 | 75.2 | 24.0 | 15 | SW | | | 7 | | 5 | | | 0 | 0 | Cloudy | Watrin. |
| Geriville | | | 29.83 | 757.6 | 66.1 | 18.4 | 76 | S | | | 6 | | 5 | | | 0 | 0 | Cloudy | Brugnlaux. |
| Laghouat | | | 29.83 | 757.6 | 79.9 | 26.6 | 12 | SW | | | 7 | | 0 | | | 0 | 0 | Clear | Bertrand, |
| Biskra | | | 29.78 | 756.3 | 78.3 | 25.7 | 10 | ESE | | | 4 | | 2 | | | 0 | 0 | Fair | Chauvaux. |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.22 | 742.3 | 29.76 | 756.0 | 60.1 | 15.6 | 47 | SW | | | 6 | | 6 | | | 0 | 0 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 28.92 | 734.5 | 29.69 | 754.2 | 42.1 | 5.6 | 88 | W | | | 3 | | 10 | | | 0.031 | 0.8 | | Dr. Wierzbiski. |
| Eperies | 28.73 | 729.7 | 29.60 | 751.9 | 51.1 | 10.6 | 68 | Calm | | | 0 | | 9ks | | S | 0.730 | 18.55 | | Julius Mikolik. |
| Gratz | 28.39 | 721.1 | 29.62 | 752.3 | 55.8 | 13.2 | 40 | SE | | | 3 | | 7 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.31 | 719.1 | 29.72 | 754.9 | 57.6 | 14.2 | 81 | NW | | | 5 | | 10 | | | 0 | 0 | | Prof. A. Gottschling. |
| Kremsmünster | 28.25 | 717.5 | 29.68 | 751.2 | 50.5 | 10.3 | 71 | ENE | | | 3 | | 5 | | | 0.177 | 4.5 | | Prof. C. Wagner. |
| Lemberg | 28.54 | 724.9 | 29.55 | 750.5 | 38.5 | 3.6 | 82 | NW | | | 5 | | 10 | | | 0.008 | 0.2 | | Dr. T. Stanecki. |
| Pola | 29.71 | 754.6 | 29.82 | 757.4 | 67.7 | 14.3 | 73 | SE | | | 3 | | 10 | | | 0.043 | 1.1 | | I.R.Hydrographic Office |
| Szathmar | 29.25 | 743.0 | 29.72 | 754.8 | 50.0 | 10.0 | 73 | SW | | | 2 | | 10 | | | 0.031 | 0.8 | | Julius Csics, S. J. |
| Szegedin | 29.44 | 747.7 | 29.72 | 754.8 | 49.8 | 9.9 | 73 | W | | | 1 | | 10 | | | 0.028 | 0.70 | | Karl Stanecl. |
| Trieste | 29.73 | 755.2 | 29.84 | 757.8 | 55.8 | 13.2 | 87 | NW | | | 1 | | 10 | | | 0.303 | 7 7 | Rainy | P. Busin. |
| Vienna | 28.99 | 736.3 | 29.70 | 754.5 | 47.3 | 8.5 | 69 | E | | | 1 | | 10 | | | 0 | 0 | | I. R. Central Met. Obs'y |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.33 | 744.9 | 29.53 | 750.0 | 48.0 | 8.9 | 53 | E | | | 2 | 1 | 1 | SW | SE | 0.014 | 0.35 | | Royal Observatory. |
| Furnes | 29.51 | 749.6 | 29.54 | 750.2 | 51.4 | 10.8 | 49 | ESE | | | 2 | | 4 | | | 0 | 0 | | M. E. de Cae. |
| Maeseyck | 29.45 | 747.9 | 29.57 | 751.1 | 51.6 | 10.9 | 62 | E | | | 2 | | 4 | | | 0.008 | 0.2 | | M. Pierrot. |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

**Entered at the Post Office at Washington, D. C., as Second-Class Matter.**

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.72 | 754.9 | 29.82 | 757.4 | 39.2 | 4.0 | ..... | NE | 14 | 6.3 | ..... | ..... | 6 | ..... | ..... | 0.160 | 4.06 | D. clouds..... | W. Boswell. |
| Ardrossan | 29.74 | 755.4 | 29.75 | 755.6 | 43 | 6.1 | ..... | NNE | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.76 | 755.9 | 43.0 | 6.1 | ..... | NNE | 17 | 7.6 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Squally..... | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.65 | 753.1 | 38.6 | 3.7 | ..... | NE | 11 | 4.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.64 | 752.8 | 45.3 | 7.4 | ..... | E | 24 | 10.7 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | Squally..... | Thomas Mackereth. |
| Bradford, Yorkshire | 29.26 | 743.2 | 29.65 | 753.1 | 38.7 | 3.7 | ..... | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.03 | 0.8 | Overcast..... | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.94 | 760.5 | 29.97 | 761.2 | 81.5 | 27.5 | ..... | NE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | Gloomy..... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.58 | 751.3 | 48.6 | 8.9 | ..... | NE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | H. Todd. [C. |
| Cardington | ..... | ..... | 29.55 | 750.6 | 43.0 | 6.1 | ..... | NE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E. | 29.43 | 747.5 | 29.56 | 750.8 | 41.9 | 5.5 | ..... | NE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | J. Carmell, Sapper, R. E. |
| Dartmoor | 27.91 | 708.9 | 29.41 | 747.0 | 32.0 | 0.0 | ..... | NE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Alexander Watt. |
| Donaghadee | 29.72 | 754.9 | 29.77 | 756.1 | 42 | 5.6 | ..... | ENE | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | J. Mac Gowan. |
| Dover | 29.49 | 749.0 | 29.52 | 749.8 | 43 | 6.1 | ..... | E | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | ½ clouded... | J. Costello. |
| Falmouth, Observatory | 29.16 | 740.7 | 29.39 | 746.5 | 39.4 | 4.1 | ..... | NE | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Squally..... | The Staff. |
| Fort Napier, (Natal) | 27.60 | 701.0 | 29.92 | 760.0 | 76.0 | 24.4 | ..... | E | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 86 | 30.0 | ..... | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's college | ..... | ..... | 29.66 | 753.4 | 44 | 6.7 | ..... | N | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 29.64 | 752.8 | 29.70 | 754.4 | 61.7 | 16.5 | ..... | W | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.56 | 750.8 | 29.77 | 756.1 | 37.9 | 3.3 | ..... | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. [C. |
| Great Yarmouth | 29.62 | 752.3 | 29.62 | 752.3 | 40 | 4.4 | ..... | ENE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.37 | 746.0 | 29.55 | 750.6 | 42.6 | 5.9 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The staff, for G.B. Airy. |
| Guernsey | 29.13 | 739.9 | 29.36 | 745.7 | 45.5 | 7.5 | ..... | ENE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | Blank | Blank | D. clouds..... | Dr. S.E.Hoskins, F.R.S. |
| Helston | 29.46 | 748.3 | 29.58 | 751.3 | 40 | 4.4 | ..... | NE | ..... | ..... | 6 | ..... | 10k | ..... | ..... | 0.10 | 2.5 | Raining ..... | M. P. Moyle. |
| Holyhead | 29.61 | 752.1 | 29.67 | 753.6 | 40 | 4.4 | ..... | NE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Tilston. |
| Jersey | 29.10 | 739.1 | 29.39 | 746.5 | 47.1 | 8.4 | ..... | SE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | J. Fisher. |
| Kew, Observatory | 29.50 | 749.3 | 29.54 | 750.3 | 43.9 | 6.6 | ..... | ENE | 26 | 11.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | The Meteorological Of. |
| Leicester, Museum | 29.36 | 745.7 | 29.62 | 752.3 | 39.2 | 4.0 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast .... | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.88 | 758.9 | 29.96 | 761.0 | 68 | 20.0 | ..... | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.74 | 755.4 | 29.83 | 757.7 | 40 | 4.4 | ..... | ENE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded.. | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.04 | 763.0 | 78.5 | 25.8 | ..... | SE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.46 | 748.3 | 29.65 | 753.1 | 41.3 | 5.2 | ..... | N | ..... | ..... | 3 | ..... | 8kd | ..... | ENE | 0 | 0 | D. clouds..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.08 | 738.6 | 29.61 | 752.1 | 38.6 | 3.7 | ..... | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.55 | 750.6 | 40 | 4.4 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. E. Bellamy. |
| Plymouth | 29.34 | 745.2 | 29.42 | 747.2 | 38.3 | 3.5 | ..... | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | John Merrifield. |
| Roche's Point | 29.61 | 752.1 | 29.69 | 754.1 | 42 | 5.6 | ..... | NNE | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | Wm. Kennedy, |
| Saint Ann's Head | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 39.9 | 4.4 | ..... | E | 9 | 4.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.79 | 756.7 | 29.86 | 758.4 | 62.2 | 16.8 | ..... | SW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | W. H. Lyne. |
| Sheffield | 29.39 | 746.5 | 29.68 | 753.9 | 39.5 | 4.2 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.03 | 0.8 | Overcast .... | W. F. Cooper. |
| Silloth Rectory | 29.68 | 753.9 | 29.71 | 754.6 | 40.3 | 4.6 | 75 | E | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.26 | 743.2 | 29.66 | 753.4 | 39.8 | 4.3 | ..... | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.31 | 744.5 | 29.53 | 750.0 | 42.7 | 5.9 | ..... | SE | ..... | ..... | 2-3 | ..... | 10 | ..... | ..... | ..... | ..... | Showery..... | C. H. Griffith, F. M. S. |
| Thurso | 29.83 | 757.7 | 29.89 | 759.2 | 38 | 3.3 | ..... | NNE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Trotter. |
| Truro, Royal Institution | 29.40 | 746.7 | 29.47 | 748.5 | 42 | 5.6 | ..... | NE | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | W. Newcombe. |
| Valencia, Observatory | 29.70 | 754.4 | 29.73 | 755.1 | 43.2 | 6.2 | ..... | NNE | 30 | 13.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Squally ..... | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.17 | 766.3 | 30.21 | 767.3 | 64.1 | 17.8 | 82 | SSE | 14 | 6.3 | ..... | 10 | 10 | ..... | ..... | ..... | ..... | Cloudy ..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.21 | 767.3 | 54.0 | 12.2 | 82 | SW | ..... | ..... | 2 | ..... | 10k | ..... | ..... | 0.21 | 5.3 | Covered..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.80 | 756.9 | 37.9 | 3.3 | ..... | E | ..... | ..... | 2 | ..... | 8k | ..... | ..... | 0.11 | 2.8 | Cloudy..... | Andrew Gibb. |
| Mauritius, Observatory | 29.95 | 760.7 | 30.14 | 765.6 | 79.1 | 26.2 | 72 | ESE | 19.0 | 8.5 | ..... | 1 | 4 | ..... | ESE | 0 | 0 | Squally .... | C. Meldrum. |
| Melbourne, Observatory | 30.48 | 774.2 | 30.57 | 776.5 | 54.0 | 12.2 | 81 | W | 3 | 1.3 | ..... | ..... | 10 | ..... | ..... | 0.09 | 2.3 | Dull ..... | R. L. J. Ellery. |
| MonachLt-house, (Hebrides) | ..... | ..... | 29.85 | 758.2 | 44 | 6.7 | ..... | ENE | ..... | ..... | 3 | 0 | 3 | E | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.88 | 758.9 | 41 | 5.0 | ..... | NE | ..... | ..... | 4 | 7 | 10 | N | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather | Observer |
|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 45′, E. 29° 55′ | ..... | ..... | D. clouds..... | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle-Isle, N. 49° 06′, W. 8° 30′ | 7 | NNE | Overcast..... | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole, N. 43° 15′, W. 12° 05′ | ..... | ..... | Squally..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity Miles per hour. | Wind. Velocity Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | 29.92 | 760.0 | 65.3 | 18.5 | ..... | SE | ..... | ..... | 1 | 1c;k | ..... | ..... | ..... | Inap. | Inap. | ..... | Mr. Ansart. |
| San José | 26.20 | 665.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Federico Maison |

NOTE.—For St. Jose the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches for an altitude of 1,145 meters, or 3,756.6 feet; the distinction between the upper and lower clouds is not always made; the rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.76 | 755.8 | 29.80 | 757.0 | 40.1 | 4.5 | 80 | ESE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 29.70 | 754.5 | 29.72 | 755.0 | 41.2 | 5.1 | 64 | E | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.82 | 757.5 | 29.87 | 758.6 | 35.6 | 2.0 | 75 | NNE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 29.87 | 758.7 | 29.91 | 759.6 | 42.4 | 5.8 | 57 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.61 | 752.2 | 29.78 | 756.5 | 40.6 | 4.8 | 90 | SE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 28.91 | 734.2 | 29.46 | 748.2 | 47.8 | 8.8 | 89 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.480 | 12.2 | Covered | Collignon, Director. |
| Amiens, Normal School | 29.55 | 750.6 | 29.66 | 753.4 | 59.4 | 15.2 | 68 | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bonvallet, Director |
| Avignon, Normal School | 29.44 | 747.7 | 29.52 | 749.7 | 62.6 | 17 | 66 | SE | ..... | ..... | 6 | ..... | 5 | SSW | SSE | 0.087 | 2.2 | Cloudy | M. Giraud, Director. |
| Bar-sur-Seine | 28.89 | 733.7 | 29.43 | 747.6 | 55.6 | 13.1 | 51 | S | ..... | ..... | 1 | ..... | 8km | ..... | W | 0 | 0 | Very cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.19 | 741.5 | 29.45 | 748.1 | 53.8 | 12.1 | 51 | SE | ..... | ..... | 2 | ..... | 5 | ..... | SE | 0 | 0 | Cloudy | Frere Eugene Marie, Dr |
| Besançon, Normal School | 28.61 | 726.6 | 29.50 | 749.2 | 48.6 | 9.2 | 86 | ENE | ..... | ..... | 2 | ..... | 8 | ..... | S | 0.492 | 12.5 | Very cloudy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.58 | 725.8 | 29.47 | 748.4 | 51.3 | 10.7 | 95 | S | ..... | ..... | 1 | ..... | 10n | W | S | 0.205 | 5.2 | Raining | M. Marlot, Director. |
| Bourges, Normal School | 28.87 | 733.2 | 29.37 | 746.1 | 50.0 | 10 | 86 | S | ..... | ..... | 1 | ..... | 10ks | SSE | S | 0.55 | 14. | Raining | A. Waquet, Director. |
| Brest, Naval Observatory | 28.99 | 736.4 | 29.23 | 742.5 | 50.4 | 10.2 | 62 | S | ..... | ..... | 4 | ..... | 6 | ..... | S | 0.069 | 1.75 | Squally | M.de Kermaree, Director |
| Carcassonne, Normal School | 29.08 | 738.6 | 29.49 | 749.0 | 54.3 | 12.4 | 68 | W | ..... | ..... | 4 | ..... | 10 | NE | W | 0 | 0 | Covered | September, Director. |
| Caen, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Lair, Director. |
| Chartres, Normal School | 28.86 | 733.1 | 29.45 | 747.9 | 39.6 | 4.2 | 93 | N | ..... | ..... | 1 | ..... | 1 | ..... | NNE | 0.12 | 3. | Clear | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.20 | 741.8 | 29.52 | 749.8 | 51.8 | 11.0 | 61 | SE | ..... | ..... | 2 | ..... | 5 | S | S | ..... | ..... | Cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.12 | 714.2 | 29.47 | 748.5 | 47.5 | 8.6 | 73 | E | ..... | ..... | 1 | ..... | 10 | ..... | SW | 0.008 | 0.2 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.68 | 728.5 | 29.54 | 750.4 | 47.1 | 8.4 | 70 | E | ..... | ..... | 1 | ..... | 5kn | ..... | E | 0 | 0 | Cloudy | Dr. Coulet, Director. |
| Commune de Gréasque* | 28.48 | 723.5 | 29.63 | 752.5 | 54.5 | 12.5 | 83 | SE | ..... | ..... | 3 | ..... | 10 | ..... | SE | 0.55 | 14. | Raining | M. Kina, Director. |
| Grenoble, Normal School | 28.69 | 728.8 | 29.44 | 747.8 | 57.9 | 14.4 | 76 | NE | ..... | ..... | 1 | ..... | 2k | ..... | ..... | 0 | 0 | Slightly cl'dy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.22 | 742.2 | 29.44 | 747.7 | 50.2 | 10.1 | 76 | S | ..... | ..... | 1 | ..... | 5 | ..... | S | 0.480 | 12.2 | Cloudy | Mouillot, Director |
| Le Mans, Normal School | 29.12 | 739.7 | 29.43 | 747.5 | 46.4 | 8 | 86 | SE | ..... | ..... | 3 | ..... | 5 | ..... | SE | 0 | 0 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 28.55 | 725.2 | 29.47 | 748.5 | 50.2 | 10.1 | 86 | SW | ..... | ..... | 2 | ..... | 10n | ..... | SW | 0.12 | 3. | Covered | Baudry, Director. |
| Lorient, Naval Observatory | 29.25 | 742.9 | 29.35 | 745.4 | 46.8 | 8.2 | 86 | S | ..... | ..... | 5 | ..... | ..... | ..... | SW | 0.362 | 9.2 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Marseilles, Observatory | ..... | ..... | 29.59 | 751.5 | 57.4 | 14.1 | 79 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.150 | 3.80 | Covered | The Staff. |
| Mirecourt, Normal School | 28.43 | 722.0 | 29.45 | 748.0 | 47.8 | 8.8 | 89 | SE | ..... | ..... | 1 | ..... | 10 | ..... | SW | 0.087 | 2.2 | Raining | M. Barbier, Director. |
| Nismes, Normal School | 29.32 | 744.7 | 29.52 | 749.8 | 57.2 | 14 | 64 | S | ..... | ..... | 1 | ..... | 5 | ..... | S | 0 | 0 | Cloudy | Boyer, Director. |
| Privas, Normal School | 28.36 | 720.3 | 29.41 | 747.0 | 51.8 | 11 | 95 | S | ..... | ..... | 4 | ..... | 10 | S | S | 0.94 | 24. | Raining | M. Cantier, Director. |
| Puy de Dome (Summit)Obs | 24.58 | 624.3 | ..... | ..... | 29.8 | — 1.2 | 100 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.047 | 1.2 | Snow-fog | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.43 | 747.6 | 29.47 | 748.4 | 53.1 | 11.7 | 61 | WSW | ..... | ..... | 2 | ..... | 2 | WSW | WSW | 0 | 0 | ¼ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.36 | 745.8 | 29.46 | 748.0 | 52.7 | 11.5 | 57 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | SE | 0.362 | 9.2 | Covered | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.32 | 744.6 | 29.34 | 745.3 | 54.3 | 12.4 | 50 | S | ..... | ..... | 2 | ..... | 1 | ..... | S | 0.158 | 4.02 | Clear | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.28 | 743.8 | 29.45 | 748.0 | 55.9 | 13.3 | 58 | SSE | ..... | ..... | 2 | ..... | ..... | W | SSE | 0.083 | 2.1 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.33 | 719.6 | 29.40 | 746.8 | 51.8 | 11 | 63 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.16 | 4. | Raining | T. Huguet, Director. |
| Toulouse, Observatory | 28.86 | 733.0 | 29.57 | 751.1 | 51.8 | 11.0 | 95 | NNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.071 | 1.8 | ..... | M. Mercadier Julier. |
| Versailles Observatory | 28.94 | 735.1 | 29.43 | 747.6 | 55.0 | 12.8 | 62 | SE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0.010 | 0.25 | ..... | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Nicot, Director. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.82 | 757.3 | 29.84 | 758.0 | 79.2 | 26.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.20 | 5. | ..... | L'Abbé Marchesi. |
| Lyons Obs'y, (Park Station) | 28.80 | 731.5 | 29.40 | 746.8 | 55.2 | 12.9 | 79 | S | ..... | ..... | 2 | ..... | 2 | ..... | SSW | 0.224 | 5.7 | Stormy | Mr. Jays. |
| Mont-Louis | 24.35 | 618.6 | 29.07 | 753.6 | 39.2 | 4.0 | 82 | WSW | 18.6 | 8.3 | ..... | ..... | 7 | ..... | S | 0.346 | 8.8 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.71 | 754.7 | 55.0 | 12.8 | 88 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.787 | 20.0 | Rainy | Dr. A. Nièpce, Jr. |
| Paris, Montsouris Obs'y | 29.16 | 740.7 | ..... | ..... | 50.7 | 13.7 | 50 | ESE | ..... | ..... | 3 | ..... | 9 | ..... | SSE | 0 | 0 | ..... | Marié Davy, Director. |
| Perpignan | 29.36 | 745.7 | 29.47 | 748.4 | 63.3 | 17.4 | 41 | N | 15.0 | 6.7 | ..... | ..... | 2 | ..... | S | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 21.08 | 558.4 | ..... | ..... | 31.6 | — 0.2 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.677 | 17.2 | Snowy | Gen'l de Nansouty. |
| Tours | 29.23 | 742.5 | 29.43 | 747.5 | 53.2 | 11.8 | 65 | SE | ..... | ..... | 1 | ..... | 7 | ..... | W | 0 | 0 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.08 | 764.1 | 30.11 | 764.7 | 50.4 | 10.2 | 96 | N | 4.0 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0.382 | 9.7 | Raining | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instru-m'tal error and temperature. Inches. | Barometer. Corrected. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12 | Clouds. Amount. Up'er. 0–10 | Clouds. Amount. Low'r. 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.74 | 729.9 | 29.53 | 750.1 | 49.3 | 9.6 | 49 | E | | | 5 | | 1 | W | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.56 | 750.9 | 29.74 | 755.3 | 45.1 | 7.3 | 55 | SE | | | 1 | | 9 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.20 | 741.7 | 29.72 | 755.0 | 43.0 | 6.1 | 69 | WNW | | | 3 | | 10 | NW | | 0.166 | 4.22 | | Royal University Obs'y |
| Carlsruhe | 29.13 | 739.8 | 29.55 | 750.6 | 47.5 | 8.6 | 68 | E | | | 3 | | 10 | SW | | 0.185 | 4.7 | Raining | Albert Senz. |
| Cassel | 29.06 | 738.2 | 29.67 | 753.5 | 43.9 | 6.6 | 66 | ESE | | | 3 | | 7 | E | | 0.056 | 1.42 | Snowing | Dr. H. Möhl. |
| Crefeld | 29.39 | 746.4 | 29.54 | 750.4 | 52.3 | 11.3 | 44 | SE | | | 3 | | 6cs | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.27 | 743.4 | 29.63 | 752.7 | 48.2 | 9.0 | | SE | | | 2 | | 5 | | | 0 | 0 | | Physical Society. |
| Freienwalde on the Oder | 29.70 | 754.3 | 29.74 | 755.3 | 48.7 | 9.3 | 74 | NW | | | 2 | | 5ck | WSW | ENE | 0 | 0 | Clearing | Assmann, M. D. |
| Friedrichshafen | 28.13 | 714.6 | 29.58 | 751.3 | 42.8 | 6.0 | 77 | SW | | | 4 | | 7 | SW | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.65 | 753.2 | 29.72 | 755.0 | 44.1 | 6.7 | 52 | ESE | | | 3 | | 9k | | | 0.008 | 0.2 | Fair | Captain F. Hegemann |
| Kiel | 29.72 | 755.0 | 29.74 | 755.4 | 40.8 | 4.4 | 69 | ENE | | | 3 | | 3 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.51 | 749.6 | 29.60 | 751.7 | 41.0 | 5.0 | 65 | N | | | 6 | | 8 | | | 0.130 | 3.3 | Snowing | Prof. E. Luther. |
| Köslin | | | 29.70 | 754.4 | 39.4 | 4.1 | | NE | | | 4 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.28 | 743.8 | 29.71 | 754.6 | 44.2 | 6.8 | 59 | E | | | 2 | | 8 | SSE | | 0 | 0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.57 | 751.0 | 29.61 | 752.2 | 45.7 | 7.6 | 33 | NNE | | | 6 | | 2cs | | | | | Squally | Skalweit. |
| Neufahrwasser | 29.70 | 754.4 | 29.72 | 754.8 | 38.1 | 3.4 | 66 | NNE | | | 4 | | 10 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.44 | 747.7 | 29.73 | 755.1 | 47.8 | 8.8 | 56 | NE | | | 5 | | 8 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.03 | 737.4 | 29.59 | 751.6 | 39.7 | 4.3 | 83 | NE | | | 2 | | 10 | | | 0.053 | 1.35 | Raining | Imp. University Observatory. |
| Stuttgart | 28.61 | 726.6 | 29.55 | 750.5 | 46.4 | 8.0 | 68 | SE | | | 1 | | 4 | W | | 0.154 | 3.9 | | Prof. Schoder. |
| Treves (Trier) | 29.00 | 736.5 | 29.51 | 749.6 | 52.3 | 11.3 | 52 | SE | | | 6 | | 10 | | | 0.086 | 2.19 | | Prof. Flesch. |
| Weissenburg (Bavaria) | 28.11 | 713.9 | 29.61 | 752.1 | 46.2 | 7.9 | 62 | SSE | 1.1 | 0.5 | | | 10 | | | 0 | 0 | Misty | Dr. Van Bebber |
| Wustrow, Naval School | 29.76 | 755.9 | 29.78 | 756.5 | 39.6 | 4.2 | 74 | SE | | | 3 | | 4s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| STATIONS. | Bar. corr. Inches. | Bar. corr. Millimeters. | Bar. sea-level Inches. | Bar. sea-level Millimeters. | Fahrenheit. | Centigrade. | Rel. Hum. Per cent. | Wind From— | Miles per hour. | Meters per second. | Force 0–12 | Clouds Up'er 0–10 | Clouds Low'r 0–10 | Upper From— | Lower From— | Rain Inches. | Rain Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.62 | 752.4 | 30.01 | 762.3 | 66.6 | 19.2 | | SW | | | 2.5 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the cooperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| STATIONS. | Bar. corr. Inches. | Bar. corr. Millimeters. | Bar. sea-level Inches. | Bar. sea-level Millimeters. | Fahrenheit. | Centigrade. | Rel. Hum. Per cent. | Wind From— | Miles per hour. | Meters per second. | Force 0–12 | Clouds Up'er 0–10 | Clouds Low'r 0–10 | Upper From— | Lower From— | Rain Inches. | Rain Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.80 | 757.0 | 29.85 | 758.2 | 86.7 | 30.4 | 39 | WSW | 12 | 5.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.32 | 744.8 | 29.78 | 756.5 | 94.3 | 34.6 | 8 | WSW | 8.5 | 3.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.82 | 757.5 | 29.86 | 758.5 | 82.5 | 28.1 | 78 | NW | 18 | 8.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.84 | 707.2 | 29.79 | 756.7 | 92.7 | 33.7 | 32 | WNW | | | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 28.99 | 736.4 | 29.72 | 754.8 | 92.1 | 33.4 | 24 | Calm | 2.5 | 1.1 | | | 4 | | | 0 | 0 | D. clouds | |
| Belgaum | 27.31 | 693.7 | 29.80 | 757.0 | 85.2 | 29.6 | 80 | W | 30 | 13.4 | | | 0 | | | 0 | 0 | D. clouds | |
| Roorkee | 28.81 | 731.8 | 29.68 | 754.0 | 92.4 | 33.6 | 11 | NW | 4.3 | 1.9 | | | 0 | | | | | Blue sky | |
| Agra | 29.15 | 740.5 | 29.70 | 754.3 | 99.1 | 37.3 | 16 | W | | | | | 0 | | | | | | |
| Nagpur | 28.70 | 728.9 | 29.70 | 754.5 | 98.2 | 36.8 | 13 | NW | 6.8 | 3.0 | | | 0 | | | | | Blue sky | |
| Lucknow | 29.31 | 744.5 | 29.68 | 753.8 | 95.0 | 35.0 | 29 | WNW | 2.8 | 1.2 | | | | | | | | Blue sky | |
| Allahabad | 29.38 | 746.1 | 29.68 | 753.8 | 98.1 | 36.7 | 22 | Calm | 3.9 | 1.7 | | | 0 | | | | | Blue sky | |
| Patna | 29.44 | 737.7 | 29.62 | 752.3 | 98.6 | 37.0 | 12 | WSW | 2.9 | 1.3 | | | 0 | | | | | Blue sky | |
| Hazaribagh | 27.70 | 703.5 | 29.64 | 752.9 | 93.8 | 34.3 | 19 | NW | 7.8 | 3.5 | | | 0 | | | | | Blue sky | |
| Cuttack | 29.58 | 751.3 | 29.66 | 753.3 | 93.1 | 33.9 | 55 | S | 5 | 2.2 | | | 1 | | | | | Blue sky | |
| Calcutta (Alipore) | 29.64 | 752.8 | 29.66 | 753.4 | 89.5 | 31.9 | 64 | SSW | 11.0 | 4.9 | | | 3 | S | | 0 | 0 | D. clouds | |
| Goalpara | 29.28 | 743.7 | 29.66 | 753.5 | 83.8 | 28.8 | 58 | ENE | 9.9 | 4.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.64 | 752.8 | 29.73 | 755.1 | 84.9 | 29.4 | 82 | SSE | 4.6 | 2.1 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.44 | 747.7 | 29.78 | 756.3 | 73.0 | 22.8 | 80 | Calm | 2.5 | 1.1 | | | 10 | W | W | 0.98 | 24.9 | D. clouds | |
| Jubbulpore | 28.38 | 720.9 | 29.70 | 754.4 | 97.7 | 36.5 | 6 | NE | 3.4 | 1.5 | | | 0 | | | 0 | 0 | Blue sky | |

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upper. 0—10. | Clouds. Amount. Lower. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.41 | 747.1 | 29.82 | 757.5 | 55.0 | 12.8 | 61 | NE | 0.7 | 0.3 | ..... | ..... | 9 | ..... | ..... | 0.161 | 4.1 | ..... | Prof. Giovanni Clodig |
| Milan | 29.20 | 741.8 | 29.72 | 754.9 | 49.6 | 9.8 | 85 | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 1.095 | 27.8 | ..... | Prof. Schiaparelli. |
| Padua | 29.69 | 754.2 | 29.80 | 757.0 | 54.5 | 12.5 | 71 | NNE | 11.2 | 5.0 | ..... | ..... | 10 | SSW | ..... | 0.008 | 0.2 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.80 | 731.6 | 29.71 | 754.5 | 46.4 | 8.0 | 93 | NNW | 4.3 | 1.9 | ..... | ..... | 10 | ..... | ..... | 0.256 | 6.5 | ..... | Prof. P. F. Denza. |
| Genoa | 29.52 | 749.9 | 29.71 | 754.7 | 55.4 | 13.0 | 94 | E | 6.9 | 3.1 | ..... | ..... | 10 | SE | ..... | 0.547 | 13.9 | ..... | Prof. G. M. Garibaldi |
| Mondovi | 27.79 | 705.8 | 29.70 | 754.3 | 44.8 | 7.1 | 89 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.240 | 6.1 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.72 | 754.8 | 29.77 | 756.1 | 59.4 | 15.2 | 66 | E | 15.0 | 6.7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.52 | 749.7 | 29.77 | 756.2 | 62.2 | 16.8 | 59 | S | ..... | ..... | 4 | ..... | 10 | S | ..... | 0 | 0 | ..... | Cav. F. Meucci |
| Leghorn | 29.65 | 753.2 | 29.74 | 755.4 | 59.4 | 15.2 | 75 | WSW | ..... | ..... | 8 | ..... | 10 | WSW | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 29.69 | 754.0 | 29.86 | 758.4 | 66.0 | 18.9 | 52 | S | 26.2 | 11.7 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari |
| Lecce | 29.74 | 755.4 | 29.99 | 761.8 | 76.3 | 24.6 | 49 | WSW | 18.6 | 8.3 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.06 | 738.2 | 29.94 | 760.6 | 68.0 | 20.0 | 77 | SE | 0.7 | 0.3 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.53 | 750.0 | 29.72 | 754.9 | 66.7 | 19.3 | 54 | SE | ..... | ..... | 2 | ..... | 7 | W | ..... | 0 | 0 | ..... | Prof. A. Facinotti. |
| Palermo | 29.62 | 752.4 | 29.87 | 758.8 | 74.1 | 23.4 | 28 | SW | 12.5 | 5.6 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.95 | 760.8 | 30.02 | 762.6 | 67.8 | 19.9 | 57 | WSW | 9.8 | 4.4 | ..... | ..... | 5 | W | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.41 | 747.0 | 29.96 | 761.1 | 60.8 | 16.0 | 72 | W | 1.3 | 0.6 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.10 | 764.5 | 30.11 | 764.8 | 54.1 | 12.3 | 91 | ..... | 0.7 | 0.3 | ..... | ..... | 10n | ..... | ..... | 0.580 | 14.73 | Light rain... | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.82 | 757.4 | 30.03 | 762.7 | 56.7 | 13.7 | 92 | NNW | 0.6 | 0.3 | ..... | ..... | 8s | ..... | ..... | 0.530 | 13.46 | Cloudy | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 30.09 | 764.3 | 30.16 | 766.0 | 50.9 | 10.5 | 92 | Calm | 0 | 0 | ..... | ..... | 2s | ..... | ..... | 0.010 | 0.25 | Fair | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.04 | 636.1 | 30.14 | 765.6 | 50.0 | 10.0 | 35 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear... | Prof. L. Perez. |
| Leon | 24.40 | 619.8 | 30.05 | 763.4 | 60.8 | 16.0 | 61 | NW | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.05 | 585.6 | 30.06 | 763.4 | 53.6 | 12.0 | 58 | SW | 0.4 | 0.2 | ..... | 3c;s | 0 | S | ..... | 0.008 | 0.2 | Fair | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 61.9 | 16.6 | 37 | NW | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | ..... | M. V. de Leon, M. E. |
| Tlacotalpam | 29.67 | 753.6 | 29.68 | 753.9 | 78.3 | 25.7 | 78 | S | ..... | ..... | 5 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. M. Châzaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.45 | 595.5 | 30.21 | 767.3 | 51.8 | 11.0 | 67 | N | 2.2 | 1.0 | ..... | 0 | 8 | ..... | Calm | 0 | 0 | Cloudy | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. |
| Colima | 28.36 | 720.3 | 30.01 | 762.3 | 74.3 | 23.5 | 45 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Fine | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guera |

NOTE.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201m., or, 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.57 | 751.1 | 29.57 | 751.1 | 48.2 | 9.0 | ..... | ESE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.64 | 752.8 | 29.65 | 753.2 | 41.7 | 5.4 | ..... | E | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.043 | 1.1 | ..... | |
| Helder | 29.61 | 752.0 | 29.61 | 752.0 | 41.4 | 5.2 | ..... | ENE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.57 | 751.0 | 29.57 | 751.0 | 46.8 | 8.2 | 57 | E | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.54 | 750.4 | 29.59 | 751.6 | 46.8 | 8.2 | 56 | SE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | H. v. d. Brink |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.83 | 757.6 | 29.88 | 759.0 | 43.5 | 6.4 | 37 | W | 11.0 | 4.9 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.80 | 756.8 | 29.84 | 757.8 | 32.9 | 0.5 | 64 | SW | 22 | 10 | ..... | ..... | 7 | ..... | ..... | 0.118 | 3.0 | ..... | |
| Christiania | 29.74 | 755.5 | 29.89 | 759.3 | 43.7 | 6.5 | 39 | SSW | 2 | 1 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.54 | 750.2 | 29.58 | 751.3 | 24.4 | — 4.2 | 95 | SSW | 25 | 11 | ..... | ..... | 10 | ..... | ..... | 0.532 | 13.5 | Light snow. | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.93 | 760.1 | 30.12 | 765.0 | 56.8 | 13.8 | 78 | N | 9.4 | 4.2 | ..... | ..... | 4 | ..... | ..... | 0.079 | 2.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.60 | 726.4 | 29.63 | 752.7 | 55.0 | 12.8 | 57 | NW | 6.9 | 3.1 | ..... | ..... | 5 | NW | ..... | 0.217 | 5.5 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 29.80 | 756.9 | 29.89 | 759.1 | 62.8 | 17.1 | 57 | SW | 2.5 | 1.1 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.32 | 744.7 | 29.69 | 754.0 | 55.6 | 13.1 | 54 | WNW | 11.2 | 5.0 | ..... | ..... | 5 | ..... | ..... | 0.110 | 2.8 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.02 | 762.5 | 30.09 | 764.3 | 61.2 | 16.2 | 58 | N | 13.0 | 5.8 | ..... | ..... | 3 | ..... | ..... | 0.087 | 2.2 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd.t. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd't. |
| Duque da Terceira, N. 13° 02′ 27″, W. 18° 55′ 11″ | ..... | ..... | 30.05 | 763.2 | 71.6 | 22 | ..... | ENE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 3 | ..... | D. clouds | C. C. da Fonseca Ferreira, Comd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, St. Thomas, Gulf of Guinea | ..... | ..... | 29.91 | 759.6 | 82.0 | 27.8 | ..... | W | ..... | ..... | 2 | ..... | 10 | ..... | SE | 2 | SE | Overcast | A. J. de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. T. d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. San Jose de Bissao, Senegambia | ..... | ..... | 29.97 | 761.3 | 79.9 | 26.6 | ..... | SSE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | A. Ferreira, 2d Lt. |
| Sá da Bandeira, Ambrizette, S. 7° 13′, E. 12° 52′ | ..... | ..... | 29.76 | 755.8 | 82.8 | 28.2 | ..... | SW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 2 | SW | D. clouds | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 30.00 | 762.0 | 64.4 | 18.0 | ..... | NNW | ..... | ..... | 4 | ..... | 10 | ..... | NNW | 2 | NNW | Raining | J. M. F. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.15 | 740.4 | 29.58 | 751.4 | 36.1 | 2.3 | 84 | NW | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Raining | Astronomical Obs. |
| Wilna | 29.06 | 738.2 | 29.50 | 749.2 | 33.6 | 0.9 | 98 | NE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Astronomical Obs. |
| Dorpat | 29.46 | 748.3 | 29.71 | 754.6 | 37.0 | 2.8 | 55 | NNE | 11 | 5 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.77 | 756.1 | 29.78 | 756.5 | 34.9 | 1.6 | 69 | NE | 13 | 6 | ..... | ..... | 6n;ks | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 28.59 | 726.1 | 29.22 | 742.2 | 39.9 | 4.4 | 87 | W | 31 | 14 | ..... | ..... | 10ks;n | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.51 | 749.6 | 29.58 | 751.4 | 56.7 | 13.7 | 51 | W | 22 | 10 | ..... | ..... | 8k;n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.69 | 754.0 | 29.70 | 754.5 | 57.9 | 14.4 | 70 | SSW | 13 | 6 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | Light clouds | Lagorio. |
| Moscow | 29.12 | 739.6 | 29.69 | 754.0 | 32.4 | 0.2 | 96 | ENE | 7 | 3 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.31 | 744.5 | 29.51 | 749.6 | 68.2 | 20.1 | 49 | SSW | 34 | 15 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.73 | 755.1 | 29.75 | 755.6 | 34.5 | 1.4 | 72 | SSW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.33 | 719.6 | 29.67 | 753.7 | 77.2 | 25.1 | 33 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Raining | Physical Observatory. |
| Astrakhan | 29.93 | 760.2 | 29.85 | 758.1 | 59.9 | 15.5 | 43 | SE | 9 | 4 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.49 | 749.1 | 29.98 | 761.5 | 36.9 | 2.7 | 65 | N | 2 | 1 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Light clouds | Cand. Fatjanow. |
| Kasan | 29.70 | 754.3 | 29.98 | 761.4 | 38.5 | 3.6 | 49 | NE | 4 | 2 | ..... | ..... | 7k | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 28.95 | 735.2 | 29.95 | 760.6 | 31.1 | — 0.5 | 66 | N | 7 | 3 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.66 | 753.3 | 29.88 | 759.0 | 72.9 | 22.7 | 42 | NW | 7 | 3 | ..... | ..... | 6ck | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.46 | 722.9 | 29.99 | 761.8 | 68.0 | 20.0 | 61 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.22 | 742.3 | 29.72 | 754.8 | 50.7 | 10.4 | 73 | SW | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.50 | 749.3 | 29.80 | 756.8 | 38.7 | 3.7 | 70 | N | 9 | 4 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking, (China) | 29.96 | 761.0 | 30.10 | 764.6 | 53.1 | 11.7 | 46 | NW | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. Meteorological Obs. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Vladivostock | 30.18 | 766.5 | 30.28 | 769.0 | 28.6 | — 1.9 | 92 | N | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.40 | 746.7 | 29.50 | 749.4 | 64.0 | 17.8 | 51 | SW | 7.0 | 3.12 | ..... | ..... | 6 | ..... | ..... | 0.006 | 0.15 | Misty | Antonio Rave, Directon |
| Bilbao, Met. Obs'y | 29.49 | 749.1 | 29.55 | 750.6 | 55.4 | 13.0 | 85 | SE | 1.5 | 0.65 | ..... | 2 | 7 | W | ..... | 0.118 | 3.0 | Almost cov'd | Prof. Manuel de Navera |
| Burgos, Met. Obs'y | 26.57 | 674.8 | ..... | ..... | 45.3 | 7.4 | 66 | SW | 14.2 | 6.37 | ..... | ..... | 9 | ..... | ..... | 0.532 | 13.5 | Almost cov'd | Domingo Martin y Perez. |
| Madrid, Royal Oservatory | 27.34 | 694.4 | ..... | ..... | 49.3 | 9.6 | 81 | SW | 19.4 | 8.67 | ..... | 0 | 9 | ..... | ..... | 0.181 | 4.6 | Raining | The Staff. |
| Murcia, Met. Obs'y | 29.39 | 746.5 | 29.54 | 750.3 | 68.0 | 20.0 | 58 | SSW | 4.6 | 2.06 | ..... | 6 | 4 | ENE | ..... | 0.054 | 1.38 | Raining | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.03 | 727.1 | 29.54 | 750.3 | 42.1 | 5.6 | 86 | WSW | 8.1 | 3.6 | ..... | ..... | 10 | ..... | ..... | 0.205 | 5 2 | Light hail | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.94 | 760.5 | 30.01 | 762.2 | 74.0 | 23.3 | 84 | SE | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| Manilla, Philippine Islands. | 29.83 | 757.7 | 29.88 | 759.1 | 85.7 | 29.8 | 71 | ESE | 6.7 | 3.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.56 | 750.8 | 29.66 | 753.3 | 57.6 | 14.2 | 93 | W | 10.8 | 4.8 | ..... | 0 | 8 | ..... | W | 0.171 | 4.3 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W.I | 29.94 | 760.4 | 30.03 | 762.7 | 81.0 | 27.2 | 77 | E | 0 | 0 | ..... | 4c | 3k | E | E | 0.177 | 4.50 | D. clouds | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.84 | 758.0 | 29.88 | 759.0 | 28.8 | — 1.8 | ..... | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.90 | 759.4 | 29.95 | 760.7 | 32.7 | 0.4 | 71 | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.89 | 759.2 | 29.94 | 760.5 | 35.6 | 2.0 | 61 | ..... | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.72 | 754.9 | 29.90 | 759.4 | 37.0 | 2.8 | 40 | NNE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.73 | 755.2 | 29.87 | 758.7 | 37.0 | 2.8 | 66 | NNE | ..... | ..... | 7 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.84 | 757.8 | 29.91 | 759.7 | 36.9 | 2.7 | 73 | NNE | 11.2 | 5.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.13 | 714.4 | 29.59 | 751.6 | 41.7 | 5.4 | 81 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.193 | 4.9 | Covered | The Observatory. |
| Zurich | 27.93 | 709.4 | 29.59 | 751.6 | 47.1 | 8.4 | 62 | SE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0.047 | 1.2 | Bright | The Observatory. |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —9.8 mm.; Thermometer,—6.4 Cent.; Relative Humidity, +24 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,338.6 feet, and that of Zurich 470 m., or 1,542.0 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.89 | 759.3 | 67.6 | 19.8 | 46 | SW | 8 | 3.5 | ..... | ..... | 3 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.32 | 770.0 | 84.2 | 29 0 | ..... | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 30.06 | 763.4 | 67.1 | 19.5 | ..... | SW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut. (Syria,) Lee Obs'y | 29.93 | 762.0 | 30.04 | 763.1 | 72.0 | 22.2 | 59 | SW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. C.V. A. Van Dyck. |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.60 | 751.8 | 29.67 | 753.6 | 34.7 | 1.5 | 76 | Calm | 0 | 0 | ..... | 3c | 0 | ..... | ..... | 0 | 0 | Fair | Hon. J. Ferguson. |
| Brockville, Ontario | 29.50 | 749.3 | 29.81 | 757.2 | 37 | 2.8 | ..... | Calm | 0 | 0 | ..... | 0 | 5s | ..... | W | 0 | 0 | Fair | W. R. Bigg. |
| *Chatham, N. B | 29.65 | 753.1 | 29.72 | 754.9 | 28 | — 2.2 | 71 | Calm | 0 | 0 | ..... | 2k | 5ks | SW | SW | 0 | 0 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 29.74 | 755.4 | 29.78 | 756.4 | 35 | 1.7 | 86 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.52 | 749.8 | 29.72 | 754.9 | 30.2 | — 1.0 | 72 | W | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 29.49 | 749.0 | 29.53 | 750.0 | 42.1 | 5.6 | 100 | N | 4 | 1.8 | ..... | 5cs | 0 | ..... | ..... | 0 | 0 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 29.58 | 751.3 | 29.60 | 751.8 | 29 | — 1.7 | 94 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | J. McWilliams. |
| Fredericton, N. B | 29.65 | 753.1 | 29.71 | 754.6 | 34.3 | 1.3 | 76 | SE | 6 | 2.7 | ..... | ck | 0 | ..... | ..... | 0 | 0 | Fine | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.26 | 743.2 | 30.11 | 764.8 | 37 | 2.8 | 76 | E | 8 | 3.6 | ..... | 5k | 5ks | E | Calm | 0 | 0 | Cloudy | James Stewart. |
| Granton, Ontario | 28.75 | 730.2 | 29.90 | 759.4 | 31 | — 0.6 | ..... | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | 0.35 | 8.9 | Foggy | James Grant. |
| *Halifax, N. S | 29.68 | 753.9 | 29.82 | 757.4 | 38 | 3.3 | 83 | S | 8 | 3.6 | ..... | ..... | 10n | ..... | S | 0 | 0 | Cloudy | F. Allison, M. A. |
| Hamilton, Ontario | 29.49 | 749.0 | 29.88 | 758.9 | 35.3 | 1.8 | 88 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.46 | 748.3 | 29.80 | 756.9 | 34 | 1.1 | 75 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.83 | 757.7 | 29.87 | 758.7 | 42.2 | 5.7 | 75 | SW | 12 | 5.4 | ..... | 4k | 0 | SE | ..... | 0 | 0 | Fair | C. H. Rigby. |
| Moose Factory, Ontario | 29.66 | 753.4 | 29.67 | 753.6 | 28.4 | — 2.0 | 98 | NW | ..... | ..... | 5 | ..... | 10n | ..... | ..... | 0.20 | 5.1 | Snowing | J. R. Nason. |
| *Montreal, Quebec | 29.50 | 749.3 | 29.71 | 754.6 | 30 | — 1.1 | 60 | W | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.13 | 739.9 | 29.85 | 758.2 | 28 | — 2.2 | 88 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Rev. R. Mosly. |
| Peterboro, Ontario | 29.04 | 737.6 | 29.82 | 757.4 | 33.1 | 0.6 | 73 | W | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.15 | 740.4 | 29.86 | 758.4 | 34 | 1.1 | 100 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.21 | 5.3 | Clear | H. Morgan. |
| Port Hastings, N. S | 29.81 | 757.2 | 29.86 | 758.4 | 35.6 | 2.0 | ..... | S | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | Peter Grant. |
| Port Stanley, Ontario | 29.22 | 742.2 | 29.88 | 758.9 | 35 | 1.7 | 88 | NW | 2 | 0.9 | ..... | ..... | 10n | ..... | W | 0.25 | 6.3 | Cloudy | M. Payne. |
| *Quebec, Quebec | 29.30 | 744.2 | 29.63 | 752.6 | 24 | — 4.4 | 74 | NW | .. | ..... | 1 | ..... | 10n | ..... | NW | 0 | 0 | Light snow | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.29 | 744.0 | 29.77 | 756.1 | 27 | — 2.8 | 84 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | W. H. McIntyre. |
| St. Andrews, N. B | 29.67 | 753.6 | 29.72 | 754.9 | 37 | 2.8 | 85 | SW | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| St. John, N. B | 29.56 | 750.8 | 29.73 | 755.1 | 34 | 1.1 | 89 | S | 18 | 8.0 | ..... | ..... | 10n | ..... | ..... | 0.10 | 2.5 | Light rain | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.12 | 739.6 | 29.86 | 758.4 | 31 | — 0.6 | 91 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | K. Stewart. |
| Stayner, Ontario | 29.04 | 737.6 | 29.84 | 757.9 | 33 | 0.6 | 81 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. J. Cole. |
| Stratford, Ontario | 28.52 | 724.4 | 29.84 | 757.9 | 31.0 | — 0.6 | 99 | NW | 3 | 1.3 | ..... | ..... | Fog | ..... | ..... | 0.23 | 5.8 | Foggy | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.86 | 758.4 | 29.90 | 759.4 | 41 | 5.0 | 76 | SW | 15 | 6.7 | ..... | 5ck | 2ks | SW | SW | 0.03 | 0.8 | Fair | T. C. Hill. |
| *Toronto, Ontario | 29.46 | 748.3 | 29.85 | 758.2 | 35 | 1.7 | 68 | W | 5 | 2.2 | ..... | 2k | 0 | N | ..... | 0.10 | 2.5 | Clear | Magnetic Observatory. |
| Windsor, N. S | 29.69 | 754.1 | 29.79 | 756.7 | 38.0 | 3.3 | 91 | S | 11 | 4.9 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 39.0 | 3.9 | 82 | W | ..... | ..... | ..... | 2k | 5s | ..... | ..... | 0.13 | 3.3 | Fair | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.55 | 750.6 | 29.78 | 756.4 | 39 | 3.9 | 91 | N | 1 | 0.4 | ..... | ..... | 10s | ..... | W | 0.02 | 0.5 | Cloudy | |
| Alpena, Michigan | 29.23 | 742.4 | 29.89 | 759.2 | 33 | 0.6 | 70 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Atlanta, Georgia | 28.64 | 727.4 | 29.75 | 755.6 | 59 | 15.0 | 81 | E | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.15 | 3.8 | Light rain | |
| Atlantic City, New Jersey | 29.79 | 756.7 | 29.81 | 757.2 | 46 | 7.8 | 77 | NW | 3 | 1.3 | ..... | ..... | 10s | ..... | W | 0.02 | 0.5 | Cloudy | |
| Augusta, Georgia | 29.79 | 756.7 | 29.96 | 761.0 | 64 | 17.8 | 78 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Baltimore, Maryland | 29.76 | 755.9 | 29.81 | 757.2 | 50 | 10.0 | 72 | W | 4 | 1.8 | ..... | 5k | 5s | W | W | Inap. | Inap. | Cloudy | |
| Barnegat, New Jersey | 29.76 | 755.9 | 29.78 | 756.4 | 43 | 6.1 | 100 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | W | 0.03 | 0.8 | Cloudy | |
| Bismarck, Dakota | 28.07 | 713.0 | 29.92 | 760.0 | 40 | 4.4 | 91 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Boerne, Texas | 28.30 | 718.8 | 29.56 | 750.8 | 65 | 18.3 | 35 | NW | 1 | 0.4 | ..... | 0 | 5ks | ..... | NW | Inap. | Inap. | Fair | |
| Boise City, Idaho | 26.81 | 681.0 | 29.77 | 756.1 | 45 | 7.2 | 84 | SE | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | 0.21 | 5.3 | Light rain | |
| Boston, Massachusetts | 29.58 | 751.3 | 29.74 | 755.4 | 43 | 6.1 | 75 | W | 8 | 3.6 | ..... | 5k | 5s | W | W | 0 | 0 | Cloudy | |
| Brackettville, Texas | 28.60 | 726.4 | 29.61 | 752.1 | 59 | 15.0 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.92 | 734.6 | 29.94 | 760.5 | 35.5 | 1.9 | 85 | E | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Brownsville, Texas | 29.74 | 755.4 | 29.78 | 756.4 | 76 | 24.4 | 91 | E | 4 | 1.8 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.12 | 739.6 | 29.83 | 757.7 | 33 | 0.6 | 100 | SW | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0.13 | 3.3 | Dense fog | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 26 | S | ..... | ..... | 1 | 5c | 0 | SW | ..... | 0 | 0 | Fair | |
| Burlington, Vermont | 29.44 | 747.8 | 29.73 | 755.1 | 36 | 2.2 | 61 | N | 3 | 1.3 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Cairo, Illinois | 29.32 | 744.7 | 29.70 | 754.4 | 63 | 17.2 | 72 | S | 3 | 1.3 | ..... | 0 | 8s | ..... | SW | 0 | 0 | Fair | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.04 | 636.0 | 29.84 | 757.9 | 47 | 8.3 | 28 | NE | 8 | 3.6 | ..... | 5k | 0 | SW | ..... | 0 | 0 | Fair | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 53 | 11.7 | 54 | S | ..... | ..... | 1 | 8k | 0 | S | ..... | 0 | 0 | Fair | |
| Campo, California | 27.44 | 697.0 | 30.01 | 762.2 | 43 | 6.1 | 100 | SW | 4 | 1.8 | ..... | ..... | Fog | ..... | SW | 0 | 0 | Foggy | |
| Cape Hatteras, N. Carolina | 29.99 | 761.7 | 30.00 | 762.0 | 63 | 17.2 | 82 | SW | 22 | 9.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Cape Henry, Virginia | 29.86 | 758.4 | 29.88 | 758.9 | 62 | 16.7 | 67 | SW | 19 | 8.5 | ..... | 5k | 2ks | SW | SW | 0 | 0 | Cloudy | |
| Cape Lookout, N. Carolina | 29.98 | 761.5 | 30.06 | 762.0 | 63 | 17.2 | 89 | SW | 16 | 7.2 | ..... | 8ck | 0 | W | ..... | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 29.72 | 754.9 | 29.75 | 755.6 | 49 | 9.4 | 85 | NW | 7 | 3.1 | ..... | 8ck | 2s;hz | NW | Calm | 0.01 | 0.3 | Cloudy | |
| Castroville, Texas | 28.97 | 735.8 | 29.64 | 752.8 | 68 | 20.0 | 70 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Charleston, South Carolina | 29.93 | 760.2 | 29.99 | 761.7 | 66 | 18.9 | 89 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Cheyenne, Wyoming | 23.77 | 603.8 | 29.71 | 754.6 | 32 | 0.0 | 79 | W | 4 | 1.8 | ..... | 0 | 5s | ..... | W | 0.20 | 5.1 | Fair | |
| Chicago, Illinois | 29.11 | 739.4 | 29.81 | 757.2 | 40 | 4.4 | 82 | NE | 9 | 4.0 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Cincinnati, Ohio | 29.12 | 739.6 | 29.76 | 755.9 | 56 | 13.3 | 75 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | W | 0 | 0 | Threatening | |
| Cleveland, Ohio | 29.13 | 739.9 | 29.87 | 758.7 | 36 | 2.2 | 90 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Cloudy | |
| Coleman City, Texas | 27.96 | 710.2 | 29.61 | 752.1 | 50 | 10.0 | 45 | W | 8 | 3.6 | ..... | 2c | 0 | Calm | ..... | Inap. | Inap. | Fair | |
| Columbus, Ohio | 28.92 | 734.6 | 29.75 | 755.6 | 48 | 8.9 | 78 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Concho, Texas | 27.85 | 707.4 | 29.50 | 749.3 | 52 | 11.1 | 73 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.19 | 741.4 | 29.63 | 752.6 | 68 | 20.0 | 95 | S | 12 | 5.4 | ..... | 0 | 5s | ..... | SW | 0.28 | 7.1 | Clearing | |
| Davenport, Iowa | 29.14 | 740.1 | 29.78 | 756.4 | 42 | 5.6 | 83 | NE | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Deadwood, Dakota | 25.14 | 638.5 | ..... | ..... | 32 | 0.0 | 86 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Decatur, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Denison, Texas | 28.84 | 732.5 | 29.60 | 751.8 | 64 | 17.8 | 78 | SW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Denver, Colorado | 25.52 | 648.2 | 29.74 | 755.4 | 37 | 2.8 | 90 | S | 4 | 1.8 | ..... | 5c | 0 | Calm | ..... | 0.17 | 4.3 | Fair | |
| Des Moines, Iowa | 28.86 | 733.0 | 29.74 | 755.4 | 45 | 7.2 | 76 | E | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Detroit, Michigan | 29.19 | 741.4 | 29.87 | 758.7 | 36 | 2.2 | 90 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.22 | 5.6 | Cloudy | |
| Dodge City, Kansas | 27.10 | 688.3 | 29.36 | 745.7 | 42 | 5.6 | 83 | NW | 20 | 8.9 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 29.16 | 740.7 | 29.86 | 758.4 | 40 | 4.4 | 65 | E | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Duluth, Minnesota | 29.35 | 745.5 | 30.04 | 763.0 | 36 | 2.2 | 79 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 28.95 | 735.3 | 29.67 | 753.6 | 63 | 17.2 | 42 | N | 6 | 2.7 | ..... | 0 | 1ks | ..... | Calm | 0 | 0 | Fair | |
| Eastport, Maine | 29.64 | 752.8 | 29.71 | 754.6 | 37 | 2.8 | 90 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 72 | 22.2 | 80 | Calm | ..... | ..... | 0 | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| El Paso, Texas | 26.08 | 662.4 | ..... | ..... | 50 | 10.0 | 32 | W | 6 | 2.7 | ..... | 5cs | 5s | W | W | 0 | 0 | Cloudy | |
| Erie, Pennsylvania | 29.14 | 740.1 | 29.86 | 758.4 | 40 | 4.4 | 82 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | NW | 0.09 | 2.3 | Cloudy | |
| Escanaba, Michigan | 29.32 | 744.7 | 30.00 | 762.0 | 30 | — 1.1 | 87 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Florence, Arizona | 28.38 | 720.8 | 29.98 | 761.5 | 53 | 11.7 | 42 | SW | 1 | 0.4 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.83 | 706.9 | ..... | ..... | 35 | 1.7 | 90 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Fort Craig, New Mexico | 25.33 | 643.4 | 29.39 | 746 5 | 41 | 5.0 | 42 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.05 | 636.3 | 30.01 | 762.2 | 51 | 10.6 | 34 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.00 | 736.6 | 29.51 | 749.5 | 61 | 16.1 | 82 | SE | 12 | 5.4 | ..... | 0 | 8ks | ..... | S | 0.10 | 2.5 | Fair | |
| Fort Griffin, Texas | 28.44 | 722.4 | 29.68 | 753 9 | 57 | 13.9 | 41 | NW | 12 | 5.4 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort Keogh, Montana | 27.14 | 689.3 | ..... | ..... | 40 | 4.4 | 56 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort McKavett, Texas | 27.49 | 698.2 | 29.36 | 745 7 | 55 | 12.8 | 22 | S | 4 | 1.8 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.40 | 746.7 | 29.44 | 747.8 | 4 | —15.6 | 100 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Fort Sill, Indian Territory | 28.42 | 721.9 | 29.50 | 749.3 | 52 | 11.1 | 60 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Stevenson, Dakota | 28.09 | 713.5 | ..... | ..... | 39 | 3.9 | 72 | SE | 9 | 4.0 | ..... | ..... | 8s | ..... | SE | 0 | 0 | Cloudy | |
| Fredericksburg, Texas | 28.01 | 711.4 | 29.60 | 751.8 | 65 | 18.3 | 49 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Galveston, Texas | 29.68 | 753.9 | 29.72 | 754.9 | 73 | 22.8 | 95 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Graham, Texas | 28.61 | 726.7 | 29.64 | 752.8 | 55 | 12.8 | 50 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.22 | 742.2 | 29.87 | 758.7 | 41 | 5.0 | 65 | E | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 28.94 | 735.1 | 29.70 | 754.4 | 53 | 11.7 | 61 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Indianola, Texas | 29.69 | 754.1 | 29.72 | 754.9 | 73 | 22.8 | 90 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Jacksboro, Texas | 28.53 | 724.6 | 29.62 | 752.3 | 56 | 13.3 | 63 | SW | 4 | 1.8 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Jacksonville, Florida | 29.97 | 761.2 | 29.99 | 761.7 | 69 | 20.6 | 80 | SE | 10 | 4.5 | ..... | 2cs | 0 | W | ..... | 0 | 0 | Fair | |
| Keokuk, Iowa | 29.06 | 738.1 | 29.67 | 753.6 | 45 | 7.2 | 84 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | E | 0.01 | 0.3 | Light rain | |
| Key West, Florida | 29.98 | 761.5 | 30.01 | 762.2 | 77 | 25.0 | 82 | SE | 10 | 4.5 | ..... | 0 | 2ks | ..... | SE | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 29.91 | 759.7 | 29.93 | 760.2 | 61 | 16.1 | 82 | SW | 16 | 7.2 | ..... | 5ck | 5ks | W | SW | 0 | 0 | Cloudy | |
| Knoxville, Tennessee | 28.83 | 732.3 | 29.81 | 757.2 | 58 | 14.4 | 76 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| La Crosse, Wisconsin | 29.16 | 740.7 | 29.90 | 759.4 | 39 | 3.9 | 82 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 25.92 | 658.4 | 30.07 | 763.8 | 46 | 7.8 | 47 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Laredo, Texas | 29.30 | 744.2 | 29.62 | 762.3 | 73 | 22.8 | 76 | NW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 28.73 | 729.7 | 29.54 | 750.3 | 52 | 11.1 | 86 | N | 5 | 2.2 | ..... | ..... | 10s | ..... | S | 0.42 | 10.7 | Cloudy | |
| Los Angeles, California | 29.67 | 753.6 | 30.02 | 762.5 | 51.0 | 10.6 | 86 | NE | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Louisville, Kentucky | 29.16 | 740.7 | 29.71 | 754.6 | 56 | 13.3 | 63 | S | 2 | 0.9 | ..... | ..... | 10s;sm | ..... | Calm | 0 | 0 | Cloudy | |
| Lynchburg, Virginia | 29.16 | 740.7 | 29.82 | 757.4 | 61 | 16.1 | 60 | SW | 2 | 0.9 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Madison, Wisconsin | 28.87 | 733.3 | 29.87 | 758.7 | 37 | 2.8 | 71 | NE | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Marquette, Michigan | 29.26 | 743.2 | 29.99 | 761 7 | 32 | 0.0 | 59 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.10 | 713.7 | 29.80 | 756.9 | 62 | 16.7 | 18 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.41 | 747.0 | 29.72 | 754.9 | 63 | 17.2 | 70 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.15 | 740 4 | 29.89 | 759.2 | 37 | 2.8 | 71 | N | 14 | 6.3 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Mobile, Alabama | 29.80 | 756.9 | 29.85 | 758.2 | 63.5 | 17.5 | 94 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | W | 1.53 | 38.9 | Cloudy | |
| Montgomery, Alabama | 29.57 | 751.1 | 29.80 | 756.9 | 60 | 15.6 | 88 | E | 2 | 0.9 | ..... | ..... | 10ks | ..... | E | 0.84 | 21.3 | Threatening | |
| Morgantown, West Virginia | 28.72 | 729 5 | 29.75 | 755.6 | 53 | 11.7 | 67 | NE | 2 | 0.9 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Mt. Washington, N. H. | 23.29 | 591.6 | 29.65 | 753.1 | 13 | —10.6 | 80 | NW | 42 | 18.8 | ..... | ..... | Fog | ..... | NW | 0 | 0 | Foggy | |
| Nashville, Tennessee | 29.20 | 741.7 | 29.72 | 754.9 | 62 | 16.7 | 67 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Cloudy | |
| New Haven, Connecticut | 29.65 | 753.3 | 29.76 | 755.9 | 49 | 9.4 | 71 | Calm | 0 | 0 | ..... | 8ck | Haze | W | Calm | 0 | 0 | Cloudy | |
| New London, Connecticut | 29.70 | 754.4 | 29.75 | 755.6 | 47 | 8.3 | 73 | SW | 2 | 0.9 | ..... | 2k | 3s | SW | SW | 0 | 0 | Fair | |
| New Orleans, Louisiana | 29.76 | 755.9 | 29.82 | 757.4 | 65 | 18.3 | 94 | E | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 1.06 | 26.9 | Cloudy | |
| Newport, Rhode Island | 29.69 | 754.1 | 29.74 | 755.4 | 44.5 | 6.9 | 80 | SW | 5 | 2.2 | ..... | 2c | 0 | W | ..... | 0.03 | 0.8 | Clear | |
| New York, New York | 29.61 | 752.1 | 29.78 | 756.4 | 45 | 7.2 | 92 | SW | 2 | 0.9 | ..... | 1ck | 8ks;fg | SW | SW | 0.01 | 0.3 | Foggy | |
| Norfolk, Virginia | 29.82 | 757.4 | 29.88 | 758 9 | 62 | 16.7 | 67 | SW | 18 | 8.0 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Up'er. 0—10 | CLOUDS. Amount. Low'r. 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 26.86 | 682.2 | 29.42 | 747.2 | 41 | 5.0 | 78 | NE | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Olympia, Washington Ter. | 29.52 | 749.8 | 29.56 | 750.8 | 44.0 | 6.7 | 93 | NE | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.3 | Light rain | |
| Omaha, Nebraska | 28.56 | 725.4 | 29.64 | 752.8 | 46 | 7.8 | 84 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | NE | 0.20 | 5.1 | Light rain | |
| Oswego, New York | 29.50 | 749.3 | 29.83 | 757.7 | 37 | 2.8 | 81 | W | 6 | 2.7 | ..... | ..... | 10s | ..... | ..... | 0.04 | 1.0 | Cloudy | |
| Pembina, Dakota | 29.17 | 740.9 | 30.02 | 762.5 | 34 | 1.1 | 100 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Philadelphia, Pa | 29.75 | 755.6 | 29.80 | 756.9 | 46 | 7.8 | 84 | Calm | 0 | 0 | ..... | ..... | 10s; fg | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Phœnix, Arizona | 28.69 | 728.7 | 30.48 | 774.2 | 55 | 12.8 | 62 | E | 1 | 0.4 | ..... | 0 | 10ks | ..... | SW | 0 | 0 | Cloudy | |
| Pike's Peak, Colorado | 17.50 | 444.5 | 29.71 | 754.6 | 11 | —11.7 | 60 | Calm | 0 | 0 | ..... | 8cs | 0 | Calm | ..... | 3.28 | 83.3 | Fair | |
| Pioche, Nevada | 23.81 | 604.6 | 29.58 | 751.3 | 38 | 3.3 | 81 | SW | 5 | 2.2 | ..... | 0 | 2s | ..... | SW | 0.05 | 1.3 | Fair | |
| Pittsburg, Pennsylvania | 29.00 | 736.6 | 29.81 | 757.2 | 42 | 5.6 | 83 | NW | 2 | 0.9 | ..... | ..... | 10n | ..... | N | 0.10 | 2.5 | Light rain | |
| Port Huron, Michigan | 29.18 | 741.2 | 29.86 | 758.4 | 31 | — 0.6 | 100 | SW | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0.21 | 5.3 | Dense fog | |
| Portland, Maine | 29.66 | 753.4 | 29.71 | 754.6 | 41 | 5.0 | 82 | SW | 4 | 1.8 | ..... | 10k | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Portland, Oregon | 29.54 | 750.3 | 29.64 | 752.8 | 46.8 | 8.2 | 87 | S | 8 | 3.6 | ..... | ..... | 10n | ..... | SW | 0.34 | 8.6 | Light rain | |
| Prescott, Arizona | 24.54 | 623.3 | 29.90 | 759.4 | 45 | 7.2 | 68 | SW | 6 | 2.7 | ..... | 5ck | 2s | W | W | 0 | 0 | Cloudy | |
| Pilot Point, Texas | 29.07 | 738.4 | 29.88 | 758.9 | 60 | 15.6 | 64 | SE | 4 | 1.8 | ..... | Haze | Haze | ..... | ..... | 0.02 | 0.5 | Hazy | |
| Punta Rassa, Florida | 30.01 | 762.2 | 30.03 | 762.8 | 72 | 22.2 | 80 | SE | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Red Bluff, California | 29.47 | 748.5 | 29.83 | 757.7 | 50 | 10.0 | 93 | S | 20 | 8.9 | ..... | 0 | 8s | ..... | SE | 0.14 | 3.6 | Fair | |
| Rio Grande City, Texas | 29.49 | 749.0 | 29.70 | 754.4 | 73 | 22.8 | 90 | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rochester, New York | 29.20 | 741.7 | 29.82 | 757.4 | 38 | 3.3 | 72 | W | 9 | 4.0 | ..... | 1c | 0 | W | ..... | 0.05 | 1.3 | Clear | |
| Roseburg, Oregon | 29.18 | 741.2 | 29.74 | 755.4 | 43.0 | 6.1 | 83 | SW | 6 | 2.7 | ..... | 0 | 2s | ..... | SW | 0.31 | 7.9 | Fair | |
| Sacramento, California | 29.88 | 758.9 | 29.96 | 761.0 | 52 | 11.1 | 86 | S | 7 | 3.1 | ..... | 1k | 10s | W | SW | 0.45 | 11.4 | Cloudy | |
| St. Louis, Missouri | 29.10 | 739.1 | 29.65 | 753.1 | 58 | 14.4 | 70 | S | 11 | 4.9 | ..... | ..... | 10n | ..... | SW | Inap. | Inap. | Light rain | |
| St. Marks, Florida | 29.89 | 759.2 | 29.91 | 759.7 | 68 | 20.0 | 90 | S | 20 | 8.9 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| St. Paul, Minnesota | 29.04 | 737.6 | 29.88 | 758.9 | 39 | 3.9 | 63 | E | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.37 | 644.4 | 29.70 | 754.4 | 45 | 7.2 | 84 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.34 | 8.6 | Light rain | |
| San Antonio, Texas | 29.05 | 737.9 | 29.60 | 751.8 | 71 | 21.7 | 90 | NW | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.3 | Light rain | |
| San Diego, California | 29.98 | 761.5 | 30.06 | 763.5 | 53 | 11.7 | 100 | NE | 2 | 0.9 | ..... | ..... | 10s | ..... | NW | 0.05 | 1.3 | Cloudy | |
| Sandusky, Ohio | 29.18 | 741.2 | 29.86 | 758.4 | 40 | 4.4 | 82 | NE | 13 | 5.8 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Sandy Hook, New Jersey | 29.76 | 755.9 | 29.79 | 756.7 | 43 | 6.1 | 92 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | W | 0.07 | 1.8 | Cloudy | |
| San Francisco, California | 29.90 | 759.4 | 29.97 | 761.2 | 54 | 12.2 | 87 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0.15 | 3.8 | Threatening | |
| Santa Fé, New Mexico | 23.04 | 585.2 | 29.58 | 751.3 | 32 | 0.0 | 79 | Calm | 0 | 0 | ..... | 1cs | 0 | Calm | ..... | 0.12 | 3.0 | Clear | |
| Savannah, Georgia | 29.90 | 759.4 | 29.99 | 761.7 | 68 | 20.0 | 79 | SW | 9 | 4.0 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Shreveport, Louisiana | 29.47 | 748.5 | 29.68 | 753.9 | 60 | 15.6 | 100 | S | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 1.41 | 35.8 | Cloudy | |
| Silver City, New Mexico | 24.14 | 613.1 | 30.36 | 771.3 | 40 | 4.4 | 56 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Smithville, North Carolina | 30.00 | 762.0 | 30.04 | 763.0 | 64 | 17.8 | 89 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 29.62 | 752.3 | 29.75 | 755.6 | 45 | 7.2 | 76 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Stockton, Texas | 26.76 | 679.7 | 29.76 | 755.9 | 66 | 18.9 | 8 | SW | 12 | 5.4 | ..... | 5ck | 0 | SW | ..... | 0 | 0 | Fair | |
| Thatcher's Island, Mass. | 29.70 | 754.4 | 29.75 | 755.6 | 40 | 4.4 | 73 | NW | 10 | 4.5 | ..... | 10k | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Toledo, Ohio | 29.16 | 740.7 | 29.85 | 758.2 | 39 | 3.9 | 82 | NE | 11 | 4.9 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Tucson, Arizona | 27.41 | 696.2 | 29.98 | 761.5 | 49 | 9.4 | 50 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.23 | 742.4 | 29.71 | 754.6 | 47.0 | 8.3 | 85 | W | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 0.55 | 14.0 | Cloudy | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 28 | — 2.2 | 76 | W | ..... | ..... | 4 | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Uvalde, Texas | 28.87 | 733.3 | 29.68 | 753.9 | 61 | 16.1 | 50 | NE | 3 | 1.3 | ..... | 5ck | 0 | SW | ..... | Inap. | Inap. | Fair | |
| Vicksburg, Mississippi | 29.54 | 750.3 | 29.79 | 756.7 | 63 | 17.2 | 94 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 1.38 | 35.1 | Cloudy | |
| Virginia City, Montana | 23.99 | 609.3 | 29.47 | 748.5 | 40 | 4.4 | 39 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Visalia, California | 29.63 | 752.6 | 30.00 | 762.0 | 54 | 12.2 | 89 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.07 | 1.8 | Cloudy | |
| Washington, D. C. | 29.69 | 754.1 | 29.80 | 756.9 | 49 | 9.4 | 71 | NE | 3 | 1.3 | ..... | 5ck | 6s; sm | W | W | 0 | 0 | Smoky | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 52 | 11.1 | 66 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 29.92 | 760.0 | 30.00 | 762.0 | 67 | 19.4 | 69 | SW | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Winnemucca, Nevada | 25.37 | 644.4 | 29.73 | 755.1 | 42 | 5.6 | 74 | SW | 14 | 6.3 | ..... | 0 | 8ks | ..... | SW | 0.01 | 0.3 | Cloudy | |
| Wood's Holl, Mass. | 29.69 | 754.1 | 29.73 | 755.1 | 45 | 7.2 | 76 | NW | 6 | 2.7 | ..... | ..... | 8ks | ..... | SW | 0.01 | 0.3 | Cloudy | |
| Yankton, Dakota | 28.56 | 725.4 | 29.85 | 758.2 | 40 | 4.4 | 73 | NE | 4 | 1.8 | ..... | 10k | 0 | NE | ..... | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.71 | 754.6 | 29.87 | 758.7 | 59 | 15.0 | 48 | W | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark. | 28.06 | 712.7 | 29.41 | 747.0 | 57 | 13.9 | 80 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I. | 29.94 | 760.5 | 29.99 | 761.7 | 74 | 23.3 | 81 | SE | 2.4 | 1.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A. | 25.18 | 639.6 | ..... | ..... | 67.5 | 19.7 | 85 | Calm | 0 | 0 | ..... | 2cs; k | 3ks | ..... | ..... | 0.04 | 1.0 | ..... | Thomas Herran. |
| Navassa, W. I. | 29.92 | 760.0 | 30.00 | 762.0 | 81 | 27.2 | ..... | NE | 10.6 | 4.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Partly cl'dy. | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 29.98 | 761.5 | 29.98 | 761.5 | 81 | 27.2 | 87 | E | ..... | ..... | 1 | 5k | 8ks | E | ..... | 0.130 | 3.3 | ½ clouded | C. J. Hering. |
| Santiago de Cuba, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A. | 30.32 | 770.1 | 30.38 | 771.6 | 14.0 | —10.0 | 91 | N | 6 | 2.7 | ..... | Fog | Fog | ..... | ..... | 0 | 0 | Foggy | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft.. or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 m.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.39 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.92 | 760.0 | 52 | 11.1 | 52 | 11.1 | 100 | SSW | 18 | 8.0 | ..... | ..... | 10 | ..... | ..... | 0.7 | 18. | ..... | ..... | Overcast..... | |
| Navy Yard, Pensacola, Fla. | 30.00 | 762.0 | 66 | 18.9 | 66 | 18.9 | 94 | S | 5 | 2.2 | ..... | ..... | ..... | ..... | W | 0 | 0 | ..... | ..... | ..... | |
| Navy Yard, Portsmouth, N.H | 29.75 | 755.6 | 56 | 13.3 | 39 | 3.9 | 74 | SW | 2 | 0.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Naval Hospital, Yokohama, Japan.....* | 30.17‡ | 766.3‡ | ..... | ..... | 53 | 11.7 | 86 | SW | ..... | ..... | 1 | ..... | 3ks | ..... | SW | 0.01 | 0.3 | ..... | ..... | Fair..... | |
| Adams, Panama .....* | 29.91 | 759.7 | 80 | 26.7 | 78 | 25.6 | 95 | NW | ..... | ..... | 2 | ..... | 5 | ..... | NW | ..... | ..... | ..... | ..... | Fair..... | |
| Alaska, N. 55° 25′ W. 131° 44′ .... | 29.61‡ | 752.1‡ | ..... | ..... | 38 | 3.3 | 81 | ENE | ..... | ..... | 3 | ..... | 5 | ..... | NW | 0.25 | 6.3 | Smooth | ..... | D. clouds..... | |
| Alliance, Naples, Italy..... | 29.94‡ | 760.5‡ | ..... | ..... | 62 | 16.7 | 72 | SSW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant..... | |
| Ashuelot, Hong-Kong, China. ...* | 29.95‡ | 760.7‡ | ..... | ..... | 70 | 21.1 | 80 | E | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Canonicus, New Orleans, La.....* | 29.84 | 757.9 | 49 | 9.4 | 64 | 17.8 | 94 | NW | ..... | ..... | 2 | ..... | 10 | ..... | NW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado, New York, N. Y..... | 29.79 | 756.7 | 48 | 8.9 | 47 | 8.3 | 70 | NW | 3 | 1.3 | ..... | ..... | 0? | ..... | ..... | 0.01 | 0.3 | ..... | ..... | Overcast. ..... | |
| Constitution N. 35° 03′, W. 12° 37′..... | 29.83‡ | 757.7‡ | ..... | ..... | 58 | 14.4 | 76 | WNW | ..... | ..... | 3 | ..... | 5 | ..... | Calm | ..... | ..... | Mod'ate | NW | Pleasant..... | |
| Despatch, Genoa, Italy..... | 29.73‡ | 755.1‡ | ..... | ..... | 55 | 12.8 | 93 | SE | ..... | ..... | 3 | ..... | 10 | ..... | SE | ..... | ..... | Smooth | ..... | Rainy ..... | |
| Essex, N. 35° 16′, W. 53° 38′...* | 30.05 | 763.3 | 70 | 21.1 | 69 | 20.6 | 100 | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Smooth | ..... | Hazy..... | |
| Franklin, Norfolk, Va.....* | 30.01 | 762.2 | 69 | 20.6 | 63 | 17.2 | 47 | WSW | 12 | 5.4 | ..... | ..... | 2 | ..... | WNW | 0 | 0 | ..... | ..... | Clear..... | |
| Gettysburg, Genoa, Italy ..... .* | 29.72‡ | 754.9‡ | ..... | ..... | 56 | 13.3 | 100 | SSE | ..... | ..... | 3–5 | ..... | 10 | ..... | S;E | 0.12 | 3.0 | ..... | ..... | Rainy ..... | |
| Hartford, Montevideo, Uruguay.* | 30.06 | 763.5 | 69 | 20.6 | 66 | 13.9 | 84 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair ..... | |
| Michigan, Erie, Pa.....† | 29.88‡ | 758.9‡ | ..... | ..... | 39 | 3.9 | 67 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast.... | |
| Monocacy, Shanghai, China.....* | 30.10‡ | 764.6‡ | ..... | ..... | 54 | 12.2 | 80 | NE | ..... | ..... | 2 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Rainy ..... | |
| Monongahela Yokohama, Japan .....* | 30.13‡ | 765.3‡ | ..... | ..... | 56 | 13.3 | 63 | W | ..... | ..... | 0–1 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C.....* | 30.06 | 763.5 | 67 | 19.4 | 66 | 18.9 | 89 | S | 18 | 8.0 | ..... | ..... | 8 | ..... | S | 0 | 0 | ..... | ..... | Misty..... | |
| Onward, Callao, Peru.....†* | 30.02 | 762.5 | ..... | ..... | 67 | 19.4 | 95 | SE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Long | W | Clear..... | |
| Palos, Tientsin, China.....* | 30.14 | 765.5 | 72 | 22.2 | 48 | 8.9 | 70 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 50 | 10.0 | 86 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Pensacola. Iquique, Peru..... | 29.97‡ | 761.2‡ | ..... | ..... | 66 | 18.9 | 74 | Calm | 0 | 0 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair ..... | |
| Plymouth. Portsmouth, N. H..... | 29.73‡ | 755.1‡ | ..... | ..... | 41 | 5.0 | 83 | NW | ..... | ..... | 0–1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Powhatan, Norfolk, Va..... | 29.89‡ | 759.2‡ | ..... | ..... | 63 | 17.2 | 78 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Quinnebaug, N. 36° 50′ E. 2° 38′..... | 29.72‡ | 754.0‡ | ..... | ..... | 66 | 18.9 | 74 | WSW | ..... | ..... | 1 | ..... | 5 | ..... | wsw | ..... | ..... | Smooth | ..... | Fair..... | |
| Ranger. Amoy, China.....* | 29.98‡ | 761.6‡ | ..... | ..... | 71 | 21.7 | 75 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Richmond. N. 6° 01′, E. 80° 14′..... | 29.85‡ | 758.2‡ | ..... | ..... | 83 | 28.3 | 91 | SW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0.2 | 5. | Smooth | ..... | Cloudy..... | |
| Rio Bravo, Brownsville, Texas..... | 29.69 | 754.1 | 76 | 24.4 | 75 | 23.9 | 100 | S | ..... | ..... | 1 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Santee, Annapolis, Md... ..... | 29.78‡ | 756.4‡ | ..... | ..... | 48 | 8.9 | 85 | NE | ..... | ..... | 2 | ..... | 5 | ..... | NE | 0 | 0 | ..... | ..... | Cloudy ..... | |
| Saratoga, N. 39° 20′, W. 40° 20′... . | 30.25‡ | 768.3‡ | ..... | ..... | 64 | 17.8 | 78 | SSW | ..... | ..... | 5 | ..... | 5 | ..... | NE | Slight | Slight | Mod'ate | S | Raining ..... | |
| St. Louis, League Island, Pa ..... | 29.84‡ | 757.9‡ | ..... | ..... | 44 | 6.7 | 92 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | W | ..... | ..... | ..... | ..... | Foggy ..... | |
| Supply, New York, N. Y..... | 29.78‡ | 756.4‡ | ..... | ..... | 48 | 8.9 | 85 | WSW | ..... | ..... | 0–1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Trenton Villefranche, France..* | 29.65‡ | 753.1‡ | ..... | ..... | 56 | 13.3 | 87 | S | ..... | ..... | 2 | ..... | 10 | ..... | S;W | 0.09 | 2.3 | Mod'ate | S | Rainy..... | |
| Tuscarora. Acapulco, Mexico.....* | 29.88‡ | 758.9‡ | ..... | ..... | 78 | 25.6 | 78 | Calm | ..... | ..... | 0 | ..... | 9 | ..... | Calm | 0 | 0 | Smooth | ..... | Overcast..... | |
| Vandalia Norfolk, Va... ..... | 29.82‡ | 757.4‡ | ..... | ..... | 62 | 16.7 | 88 | SW | ..... | ..... | 3 | ..... | 8 | ..... | E | ..... | ..... | ..... | ..... | Cloudy..... | |
| Wabash, Boston, Mass..... | 29.76‡ | 756.4‡ | ..... | ..... | 42 | 5.6 | 83 | SW | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Wyoming, Beirut, Syria.....* | 30.05‡ | 763.3‡ | ..... | ..... | 68 | 20.0 | 95 | SSW | ..... | ..... | 3–4 | ..... | 2 | ..... | SW | ..... | ..... | Mod'ate | SW | Clear..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | |
| S. S. City of Tokio, Capt. Maury N. 34° 43′, W. 163° 59′ | | 30.36‡ | 771.1‡ | 59 | 15.0 | | WSW | | | 4 | | 10 | | | 0 | Mod't | NW | Overcast | L. B. Walls. |
| S. S. Colima. N. 18° 36′, W. 90° 03′†. | | 29.94‡ | 760.5‡ | 83 | 28.3 | | NW | | | 2 | | 8 | | Calm | 0 | Small | S | Misty | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota, Capt. H. G. Morse, San Francisco, Cal.†. | | 30.00‡ | 762.0‡ | | | | SW | | | 1 | | 10 | | | Light | None | | Hazy | B. Lawless. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, S. 38° 50,′ E. 151° 20′ | | 30.33‡ | 770.4‡ | | | | S | | | 7 | | 7 | | SW | | Heavy | SW | Bad | R. C. Ghest, 1st Officer. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WHITE STAR LINE MARINE SERIES.** Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroi *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, Capt. L. Meyer. | | | | | | | | | | | | | | | | | | | J. A. Thompson, 2d Off'r |
| S. S Gaelic, N. 43° 05′, E. 159° 24′...*. | | 29.92‡ | 760.0‡ | 45 | 7.2 | ?? | S | | | 6 | | Haze | | S | Blank | Swell | S | Overcast | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, | | | | | | | | | | | | | | | | | | | J. G. Cameron. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** Furnished by the co-operation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 47° 46′, W. 26° 29′ | | 30.20‡ | 767.1‡ | 53.0 | 11.7 | 73 | NNE | | | 4 | | 5 | | NE | | Long | NE | Rainy | Capt. C. Undütsch. |
| S. S. Leipzig, N. 43° 16′, W. 55° 38′ | | 30.17‡ | 766.3‡ | 44.5 | 6.9 | 92 | S | | | 3 | | 2 | | W | 0 | Mod'ate | SW | Fair | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, Capt. G. Meyer, Baltimore, Md | | 29.81‡ | 757.2‡ | | | | S | | | 2 | | 5 | | S | | | | Fair | G. Risius, 3rd Officer. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 39° 50′, W. 68° 06′ | | 29.85‡ | 758.2‡ | 51 | 10.6 | | SW | | | 6 | | 8 | | SW | Mod'ate | Mod'ate | SW | Cloudy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud direction as toward instead of from; sea-swell in general terms as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

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| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols |

**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| Peruvian | | | | | | | | | | | | | | | | | | | |
| Baltimore, Md | | 29.78‡ | 756.4‡ | 56 | 13.3 | 81 | SE | | | 1 | | 5 | | Calm | | | | Dull | J. Powell, 4th Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

**MARINE SERIES. (Miscellaneous.**

Furnished by the cooperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
| Brigantine "George," of Halifax | | | | | | | | | | | | | | | | | | | Willard N. Pratt. |

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

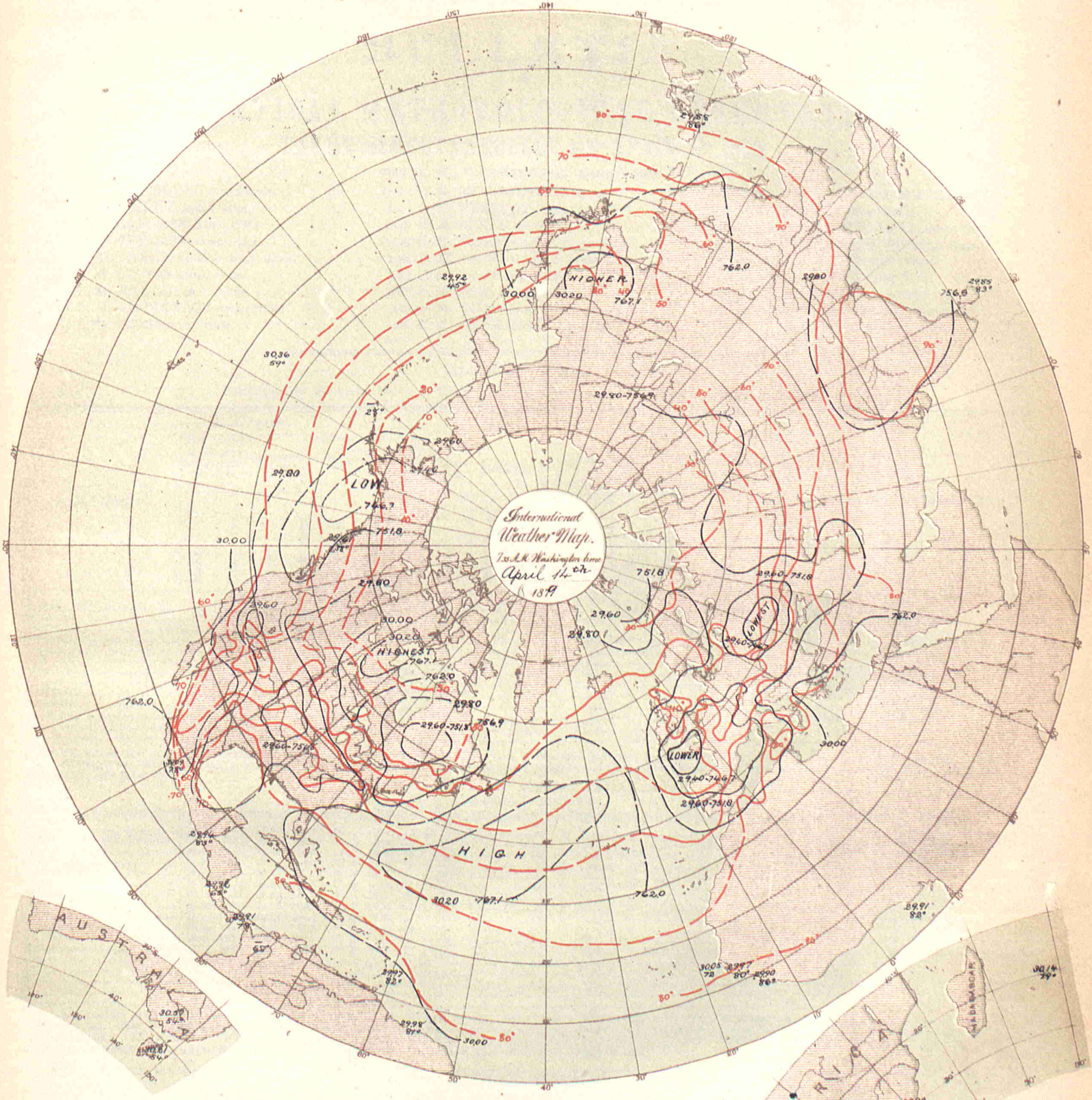
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$.) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIOAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 15, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 29.93 | 760.1 | 61.2 | 16.2 | 85 | WNW | | | 2 | | 10 | | | 0.512 | 13.0 | Covered | Kesxuche. |
| Algiers | | | 29.75 | 755.6 | 63.7 | 17.6 | 62 | W | | | 5 | | 0 | | | 0.126 | 3.2 | Clear | Tourilliere. |
| La Calle | | | 29.74 | 755.3 | 73.0 | 22.8 | 60 | NNW | | | 1 | | 10 | | | 0 | 0 | Covered | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 29.76 | 755.7 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 29.85 | 758.1 | 50.7 | 10.4 | 88 | W | | | 2 | | 10 | | | 0.378 | 9.6 | Covered | Herbin. |
| Tebessa | | | 29.78 | 756.5 | 78.3 | 25.7 | 10 | W | | | 7 | | 5 | | | 0 | 0 | Cloudy | Watrin. |
| Geriville | | | 29.87 | 758.8 | 67.8 | 19.9 | 55 | NNW | | | 6 | | 5 | | | 0 | 0 | Cloudy | Brugnlaux. |
| Laghouat | | | 29.78 | 756.5 | 72.3 | 22.4 | 39 | W | | | 3 | | 2 | | | 0 | 0 | Fair | Bertrand. |
| Biskra | | | 29.69 | 754.0 | 80.2 | 26.8 | 11 | WNW | | | 1 | | 5 | | | 0 | 0 | Cloudy | Chauvaux. |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

## AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.22 | 742.8 | 29.75 | 755.7 | 68.7 | 20.4 | 49 | S | | | 2 | | 9 | | | 0 | 0 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 28.97 | 736.0 | 29.73 | 755.2 | 55.0 | 12.8 | 72 | E | | | 1 | | 1 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 28.84 | 732.5 | 29.70 | 754.3 | 59.7 | 15.4 | 63 | SE | | | 3 | | 5cs;8 | | | 0 | 0 | | Julius Mikolik. |
| Gratz | 28.50 | 723.8 | 29.71 | 754.6 | 63.7 | 17.6 | 55 | SW | | | 2 | | 8 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.44 | 722.4 | 29.82 | 757.3 | 70.2 | 21.2 | 71 | NW | | | 4 | | 8 | | | 0 | 0 | | Prof. A. Gottschling. |
| Kremsmünster | 28.28 | 718.3 | 29.60 | 751.8 | 54.0 | 12.2 | 74 | ENE | | | 3 | | 10 | | | 0 | 0 | | Prof. C. Wagner. |
| Lemberg | 28.74 | 730.0 | 29.72 | 754.8 | 53.1 | 11.7 | 78 | SW | | | 1 | | 0 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 29.62 | 752.3 | 29.73 | 755.1 | 57.9 | 14.4 | 81 | SE | | | 7 | | 10 | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.38 | 746.3 | 29.84 | 757.8 | 62.6 | 17.0 | 64 | SW | | | 2 | | 10 | | | 0 | 0 | | Julius Csics, S. J. |
| Szegedin | 29.52 | 749.7 | 29.79 | 756.6 | 63.4 | 20.2 | 48 | S | | | 2 | | 5 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 29.61 | 752.0 | 29.79 | 756.6 | 57.9 | 14.4 | 71 | S | | | 1 | | 10 | | | 0.299 | 7.6 | Rainy | P. Busin. |
| Vienna | 29.01 | 736.8 | 29.70 | 754.5 | 62.2 | 16.8 | 60 | E | | | 1 | | 8 | | | 0 | 0 | | I. R. Central Met. Obs'y |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 367 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

## BELGIAN SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.36 | 745.8 | 29.66 | 750.8 | 55.0 | 12.8 | 43 | SSW | | | 1 | 9 | 1 | | S | 0.006 | 0.15 | | Royal Observatory. |
| Furnes | | | | | | | | | | | | | | | | 0.063 | 1.6 | | M. E. de Cae. |
| Maeseyck | 29.47 | 748.6 | 29.60 | 751.8 | 57.0 | 13.9 | 58 | S | | | 0 | | 9 | | | 0.102 | 2.6 | | M. Pierrot. |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

**Entered at the Post Office at Washington, D. C., as Second-Class Matter.**

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London., Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.58 | 751.3 | 29.68 | 753.9 | 38.0 | 3.3 | ..... | ENE | 3 | 1.3 | ..... | ..... | 7 | ..... | ..... | 0.015 | 0.38 | D. clouds..... | W. Boswell. |
| Ardrossan | 29.63 | 752.6 | 29.65 | 753.1 | 42 | 5.6 | ..... | NNE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.67 | 753.6 | 45.0 | 7.2 | ..... | NNE | 7 | 3.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.59 | 751.6 | 38.4 | 3.6 | ..... | ENE | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.56 | 750.8 | 34.8 | 1.6 | ..... | NE | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Thomas Mackereth. |
| Bradford, Yorkshire | 29.19 | 741.4 | 29.58 | 751.3 | 36.1 | 2.3 | ..... | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.96 | 761.0 | 29.99 | 761.7 | 83 | 28.3 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.61 | 749.5 | 50.5 | 10.3 | ..... | SW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | Thunder-storm.. | H. Todd. [C. |
| Cardington | ..... | ..... | 29.60 | 749.3 | 47.4 | 8.6 | ..... | N | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | John McLaren. |
| Chatham, School M. E | 29.38 | 746.2 | 29.61 | 749.5 | 55.1 | 12.8 | ..... | SW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | J. Carmell, Sapper, R. E. |
| Dartmoor | 27.95 | 709.9 | 29.46 | 748.3 | 33.0 | 0.6 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy ..... | Alexander Watt. |
| Donaghadee | 29.63 | 752.6 | 29.68 | 753.9 | 42 | 5.6 | ..... | NE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.50 | 749.3 | 29.52 | 749.8 | 49 | 9.4 | ..... | SSW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ¾ clouded... | J. Costello. |
| Falmouth, Observatory | 29.24 | 742.7 | 29.47 | 748.5 | 44.2 | 6.8 | ..... | N | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.78 | 705.6 | 30.07 | 763.8 | 75.3 | 24.1 | ..... | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 86 | 30.0 | ..... | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's college | ..... | ..... | 29.64 | 752.8 | 49 | 9.4 | ..... | N | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy ..... | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 29.78 | 756.4 | 29.84 | 757.9 | 56.9 | 13.8 | ..... | W | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy..... | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.45 | 748.0 | 29.65 | 753.1 | 41.4 | 5.2 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy ..... | D. G. Maclean. [C. |
| Great Yarmouth | 29.52 | 749.8 | 29.53 | 750.0 | 45 | 7.2 | ..... | SE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | Misty..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.33 | 745.0 | 29.50 | 749.3 | 53.0 | 11.7 | ..... | SW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | The staff, for G.B. Airy. |
| Guernsey | 29.19 | 741.4 | 29.41 | 747.0 | 50 | 10.0 | ..... | ESE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S.E.Hoskins, F.R.S. |
| Helston | 29.53 | 750.0 | 29.65 | 753.1 | 47 | 8.3 | ..... | NE | ..... | ..... | 6 | ..... | 4ck | ..... | ..... | 0.45 | 11.4 | Fine..... | M. P. Moyle. |
| Holyhead | 29.67 | 751.1 | 29.62 | 752.3 | 42 | 5.6 | ..... | NNE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | John Tilston. |
| Jersey | 29.13 | 739.9 | 29.42 | 747.2 | 49.6 | 9.8 | ..... | SE | ..... | ..... | 5 | ..... | 3 | ..... | ..... | Blank | Blank | D. clouds..... | J. Fisher. |
| Kew, Observatory | 29.46 | 748.3 | 29.50 | 749.3 | 53.7 | 12.1 | ..... | S | 9 | 4.0 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | Misty..... | The Meteorological Of. |
| Leicester, Museum | 29.28 | 743.7 | 29.54 | 750.3 | 37.3 | 2.9 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | Wm, J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.76 | 755.9 | 29.83 | 757.7 | 67 | 19.4 | ..... | SE | ..... | ..... | 2 | ..... | 3k | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.58 | 751.3 | 29.67 | 753.6 | 41 | 5.0 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Clear..... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.03 | 762.8 | 81.2 | 27.3 | ..... | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.38 | 746.2 | 29.57 | 751.1 | 36.5 | 2.5 | ..... | N | ..... | ..... | 2 | ..... | 10cs | ..... | ..... | 0.280 | 7.11 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.02 | 737.1 | 29.56 | 750.8 | 34.9 | 1.6 | ..... | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.53 | 750.0 | 43 | 6.1 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. E. Bellamy. |
| Plymouth | 29.37 | 746.0 | 29.44 | 747.8 | 47.1 | 8.4 | ..... | NE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | John Merrifield. |
| Roche's Point | 29.59 | 751.6 | 29.67 | 753.6 | 44 | 6.7 | ..... | NNE | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded.. | Wm. Kennedy. |
| Saint Ann's Head | 29.40 | 746.7 | 29.56 | 750.8 | 43 | 6.1 | ..... | NNE | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 40.1 | 4.5 | ..... | NNE | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Rev C.Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.96 | 761.0 | 30.02 | 762.5 | 68.0 | 20.0 | ..... | SW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | W. H.Lyne. |
| Sheffield | 29.32 | 744.7 | 29.60 | 751.8 | 36.2 | 2.3 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.19 | 4.8 | Misty..... | W. F. Cooper. |
| Silloth Rectory | 29.58 | 751.3 | 29.61 | 752.1 | 49.8 | 9.9 | 74 | E | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | D. clouds..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.19 | 741.4 | 29.60 | 751.8 | 39.1 | 3.9 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.28 | 743.7 | 29.50 | 749.3 | 43.3 | 6.3 | ..... | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Rain & hail. | C. H. Griffith, F. M. S. |
| Thurso | 29.62 | 752.3 | 29.68 | 753.9 | 43 | 6.1 | ..... | NNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Trotter. |
| Truro, Royal Institution | 29.42 | 747.2 | 29.48 | 748.8 | 48 | 8.9 | ..... | NE | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy ..... | W. Newcombe. |
| Valencia, Observatory | 29.68 | 753.9 | 29.71 | 754.6 | 46.8 | 8.2 | ..... | NE | 19 | 8.5 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | The Meteorological Of. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.18 | 766.6 | 30.22 | 767.6 | 69 | 20.6 | 56 | SSE | 9 | 4.0 | ..... | 0 | 1 | ..... | ..... | 0 | 0 | Fine..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.26 | 768.6 | 57.0 | 13.9 | 88 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0.02 | 0.5 | Star-light.... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.70 | 754.4 | 39.8 | 4.3 | ..... | E | ..... | ..... | 2 | ..... | 10s | ..... | ..... | 0 | 0 | Overcast..... | Andrew Gibb. |
| Mauritius, Observatory | 29.90 | 759.4 | 30.09 | 764.3 | 78.2 | 25.7 | 72 | E | 19.0 | 8.5 | ..... | 3 | 6 | ..... | ESE | 0 | 0 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 30.41 | 772.4 | 30.50 | 774.7 | 50.2 | 10.1 | 89 | SSW | 3 | 1.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| MonachLt-house, (Hebrides) | ..... | ..... | 29.61 | 752.1 | 46 | 7.8 | ..... | NW | ..... | ..... | 4 | 5 | 10 | N | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.65 | 753.1 | 42 | 5.6 | ..... | SW | ..... | ..... | 2 | 10 | 10 | N | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

## British Marine Series.

| Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 46', E. 29° 34' | ..... | ..... | 29.96‡ | 761.0‡ | 64.8 | 18.2 | ..... | WSW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| Barque Belle-Isle, N. 48° 56', W. 9° 11' | ..... | ..... | 29.56‡ | 750.6‡ | 48 | 8.9 | ..... | NNE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | 6 | NNE | D. clouds..... | Capt. B. Boyes. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. J. Brown. |
| —— City of Agra | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Thorne. |
| Barque Commewyne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Mertole, N. 40° 53', W. 11° 36' | ..... | ..... | 29.90‡ | 759.4‡ | 51.2 | 10.7 | ..... | NW | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | Capt. H. L. Fox. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W.R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount, the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | 29.92 | 760.0 | 69.4 | 20.8 | ..... | NE | ..... | ..... | 1 | 8ck;s | ..... | ..... | ..... | 1.2 | 26. | ..... | Mr. Ansart. |
| San José | 26.20 | 665.5 | | | | | | | | | | | | | | | | | Federico Maison |

NOTE.—For St. Jose the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches for an altitude of 1,145 meters, or 3,756.6 feet; the distinction between the upper and lower clouds is not always made; the rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.73 | 755.2 | 29.78 | 756.4 | 40.3 | 4.6 | 67 | SSE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 29.65 | 753.2 | 29.67 | 753.7 | 41.4 | 5.2 | 77 | ESE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.86 | 758.3 | 29.90 | 759.4 | 35.6 | 2.0 | 73 | S | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Faröe) | 29.73 | 755.1 | 29.76 | 756.0 | 34.0 | 1.1 | 70 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Vestervig | 29.53 | 750.0 | 29.70 | 754.3 | 39.4 | 4.1 | 92 | SE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 28.97 | 735.7 | 29.52 | 749.7 | 50.4 | 10.2 | 92 | S | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.252 | 6.4 | Raining | Collignon, Director. |
| Amiens, Normal School | 29.50 | 749.2 | 29.60 | 751.9 | 64.3 | 18.0 | 73 | SE | ..... | ..... | 1 | ..... | 5 | ..... | E | 0.157 | 4.0 | Cloudy | Bonvallet, Director |
| Avignon, Normal School | 29.46 | 748.3 | 29.54 | 750.3 | 50.9 | 10.5 | 97 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.47 | 12. | Raining | M. Giraud, Director |
| Bar-sur-Seine | 29.00 | 736.5 | 29.55 | 750.5 | 49.5 | 9.7 | 71 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.157 | 4.0 | Covered | C. Saillard, Director. |
| Beauvais, Normal School | 29.29 | 743.9 | 29.55 | 750.6 | 53.2 | 11.8 | 56 | SSE | ..... | ..... | 1 | ..... | 8 | ..... | SE | 0.051 | 1.30 | Very cloudy | Frere Eugene Marie, Dr |
| Besançon, Normal School | 28.64 | 727.4 | 29.53 | 750.0 | 49.8 | 9.9 | 84 | NE | ..... | ..... | 4 | ..... | 10 | ..... | SE | 1.14 | 29. | Covered | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.68 | 728.4 | 29.58 | 751.2 | 43.7 | 6.5 | 91 | N | ..... | ..... | 1 | ..... | 10n | N | N | 1.043 | 26.5 | Raining | M. Marlot, Director. |
| Bourges, Normal School | 29.00 | 736.5 | 29.54 | 750.2 | 58.6 | 14.8 | 80 | S | ..... | ..... | 2 | ..... | 10ck | SE | SE | 0.04 | 1. | Raining | A. Waquet, Director |
| Brest, Naval Observatory | 28.98 | 736.2 | 29.23 | 742.4 | 47.1 | 8.4 | 86 | NNE | ..... | ..... | 3 | ..... | 8 | ..... | NNE | 0.610 | 15.50 | Squally | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.19 | 741.4 | 29.61 | 752.0 | 51.4 | 10.8 | 82 | W | ..... | ..... | 3 | ..... | 10 | W | W | 0.244 | 6.2 | Covered | September, Director. |
| Caen, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Lair, Director. |
| Chartres, Normal School | 28.87 | 733.2 | 29.45 | 748.1 | 37.8 | 3.2 | 95 | W | ..... | ..... | 4 | ..... | 10 | ..... | W | 0.04 | 1. | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.24 | 742.8 | 29.56 | 750.7 | 53.6 | 12.0 | 50 | SE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | Cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.18 | 715.8 | 29.52 | 749.9 | 50.4 | 10.2 | 74 | NW | ..... | ..... | 1 | ..... | 10 | ..... | W | 0.209 | 5.3 | Raining | Alluard, Director. |
| Commercy, Normal School | 28.74 | 729.9 | 29.59 | 751.6 | 48.9 | 9.4 | 71 | E | ..... | ..... | 1 | ..... | 5kn | ..... | E | 0.020 | 0.5 | Cloudy | Dr. Coulet, Director |
| Commune de Grèasque* | 28.42 | 721.9 | 29.57 | 750.9 | 52.3 | 11.3 | 86 | S | ..... | ..... | 3 | ..... | 10 | ..... | SE | 0.059 | 1.5 | Raining | M. Kina, Director. |
| Grenoble, Normal School | 28.74 | 730.1 | 29.51 | 749.6 | 46.4 | 8.0 | 89 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 1.57 | 40. | Raining | M. Ablard, Director |
| La Roche-sur-Yon, N. School | 29.82 | 743.6 | 29.49 | 749.0 | 50.4 | 10.2 | 72 | SW | ..... | ..... | 4 | ..... | 5 | ..... | SW | 0.028 | 0.7 | Cloudy | Mouillot, Director |
| Le Mans, Normal School | 29.18 | 741.1 | 29.48 | 748.8 | 53.2 | 11.8 | 65 | SE | ..... | ..... | 1 | ..... | 5 | ..... | SW | 0.20 | 5. | Cloudy | Poirrier, Director |
| Lons-Le-Saulnier, N.School | 28.64 | 727.4 | 29.56 | 750.8 | 45.1 | 7.3 | 89 | N | ..... | ..... | 2 | ..... | 10n | ..... | N | 0.138 | 3.50 | Covered | Baudry, Director. |
| Lorient, Naval Observatory | 29.24 | 742.6 | 29.34 | 745.2 | 50.4 | 10.2 | 89 | SSW | ..... | ..... | 5 | ..... | ..... | ..... | SSW | 0.150 | 3.8 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director. |
| Marseilles, Observatory | ..... | ..... | 29.52 | 749.9 | 54.1 | 12.3 | 91 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.504 | 12.80 | Covered | The Staff. |
| Mirecourt, Normal School | 28.48 | 723.3 | 29.54 | 750.3 | 46.4 | 8 | 77 | NE | ..... | ..... | 3 | ..... | 10 | ..... | SE | 0.67 | 17. | Raining | M. Barbier, Director. |
| Nismes, Normal School | 29.32 | 744.7 | 29.52 | 749.8 | 58.6 | 14.8 | 68 | N | ..... | ..... | 6 | ..... | 2 | ..... | N | 0.83 | 21. | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 28.46 | 722.9 | 29.53 | 750.1 | 44.6 | 7 | 97 | NE | ..... | ..... | 3 | ..... | 10 | SW | S | 0.63 | 16. | Raining | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.68 | 626.8 | ..... | ..... | 30.7 | — 0.7 | 100 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.425 | 10.8 | Covered | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.49 | 749.1 | 29.52 | 749.9 | 54.7 | 12.6 | 55 | SW | ..... | ..... | 3 | ..... | 5 | SW | SW | 0.28 | 7. | ½ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.45 | 748.1 | 29.54 | 750.3 | 49.1 | 9.5 | 52 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | S | 0.102 | 2.6 | Covered | Frere Lucard, Director |
| Saint Malo (Port) Obs'y | 29.34 | 745.2 | 29.37 | 746.0 | 51.8 | 11.0 | 64 | SSE | ..... | ..... | 4 | ..... | 8 | S | S | 0.137 | 3.47 | Very cloudy | Lt. Hercouet, Director |
| Saint Maur, (near Paris) | 29.39 | 746.5 | 29.56 | 750.7 | 50.9 | 10.5 | 65 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ESE | 0.177 | 4.5 | Covered | E. Renou, Director. |
| Tarbes, Normal School | 28.53 | 724.6 | 29.61 | 752.0 | 48.2 | 9 | 73 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.12 | 3. | Raining | T. Huguet, Director. |
| Toulouse, Observatory | 28.92 | 734.5 | 29.63 | 752.7 | 51.8 | 11.0 | 72 | N | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.390 | 9.9 | Raining | M. Mercadier Julier. |
| Versailles Observatory | 29.06 | 738.1 | 29.55 | 750.6 | 46.4 | 8.0 | 75 | S | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.154 | 3.92 | ..... | Dr. A. Benigny, Director |
| Villefranche-sur-Saone, N.S. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.98 | 25. | ..... | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.86 | 758.5 | 29.89 | 759.2 | 75.6 | 24.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.55 | 14. | ..... | L'Abbé Marcl ésl. |
| Lyons Obs'y, (Park Station) | 28.97 | 735.8 | 29.60 | 751.7 | 39.0 | 3.9 | 97 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 1.374 | 34.9 | Heavy rain | Mr. Jays. |
| Mont-Louis | 24.35 | 618.5 | 29.67 | 753.5 | 40.1 | 4.5 | 78 | S | 15.0 | 6.7 | ..... | ..... | 5 | ..... | NW | 0.764 | 19.4 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.59 | 751.7 | 58.6 | 14.8 | 87 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.46 | 11.7 | Rainy | Dr. A. Nieper, Jr. |
| Paris, Montsouris Obs'y | 29.27 | 743.5 | ..... | ..... | 47.1 | 8.4 | 85 | SE | ..... | ..... | 2 | ..... | 10 | ..... | SSE | 0.016 | 0.4 | Sprinkling | Marié Davy, Director. |
| Perpignan | 29.46 | 748.3 | 29.57 | 751.0 | 55.8 | 13.2 | 59 | NW | 16.8 | 7.5 | ..... | ..... | 8 | ..... | SSW | 0.012 | 0.3 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.03 | 559.6 | ..... | ..... | 28.6 | —1.9 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.287 | 7.3 | Snowy | Gen'l de Nansouty. |
| Tours | 29.32 | 744.6 | 29.51 | 749.6 | 51.8 | 11.0 | 73 | ESE | ..... | ..... | 3 | ..... | 7 | ..... | S | 0.118 | 3.0 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.17 | 766.3 | 30.19 | 766.9 | 51.8 | 11.0 | 81 | N | 11.9 | 5.3 | ..... | ..... | 3k | ..... | ..... | 0.425 | 10.8 | Fair | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand, Nice and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–1[illegible] | Clouds. Amount. Up'er (0–10) | Clouds. Amount. Low'r (0–10) | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.83 | 732.2 | 29.66 | 753.4 | 53.8 | 12.1 | 61 | E | | | 4 | | 8 | | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.63 | 752.7 | 29.81 | 757.1 | 52.5 | 11.4 | 53 | SE | | | 1 | | 2 | | | 0.008 | 0.2 | | Prof. Arndt. |
| Breslau | 29.19 | 741.4 | 29.71 | 754.7 | 56.1 | 13.4 | 67 | S | | | 1 | | 7 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.12 | 739.6 | 29.54 | 750.2 | 55.2 | 12.9 | 60 | E | | | 2 | | 10 | NE | | 0.264 | 6.7 | Raining | Albert Senx. |
| Cassel | 29.04 | 737.5 | 29.64 | 752.8 | 54.0 | 12.2 | 85 | SE | | | 1 | | 8 | S | | 0.334 | 8.44 | Raining | Dr. H. Möhl. |
| Crefeld | 29.41 | 747.1 | 29.58 | 751.2 | 59.5 | 15.3 | 47 | S | | | 3 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.27 | 743.5 | 29.64 | 752.8 | 54.3 | 12.4 | | ENE | | | 2 | | 6 | | | 0.240 | 6.1 | | Physical Society. |
| Freienwalde on the Oder | 29.68 | 753.8 | 29.72 | 754.8 | 52.2 | 11.2 | 74 | E | | | 3 | | 4c;s | SW | | 0.004 | 0.1 | | Assmann., M. D. |
| Friedrichshafen | 28.07 | 713.0 | 29.48 | 748.7 | 55.0 | 12.8 | 56 | NE | | | 6 | | 8 | SW | | 0.067 | 1.7 | | M. Wilhelm. |
| Hamburg | 29.62 | 752.4 | 29.69 | 754.2 | 44.6 | 7.0 | 70 | SE | | | 2 | | 10n | | | 0 | 0 | Gloomy | Captain F. Hegeman. |
| Kiel | 29.67 | 753.7 | 29.69 | 754.1 | 44.6 | 7.0 | 67 | E | | | 2 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.71 | 754.6 | 29.79 | 756.7 | 43.7 | 6.5 | 57 | N | | | 3 | | 2 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 29.71 | 754.7 | 49.3 | 9.6 | | Calm | | | 0 | | 2 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.26 | 743.2 | 29.68 | 753.8 | 52.5 | 11.4 | 61 | SE | | | 1 | | 7 | SW | | 0.028 | 0.7 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.79 | 756.6 | 29.84 | 757.8 | 38.8 | 3.8 | 48 | NW | | | 5 | | 0 | | | | | | Skalweit. |
| Neufahrwasser | 29.80 | 757.0 | 29.82 | 757.4 | 39.4 | 4.1 | 69 | NE | | | 2 | | 7 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.46 | 748.2 | 29.74 | 755.5 | 53.6 | 12.0 | 52 | E | | | 4 | | 5 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.00 | 736.5 | 29.54 | 750.2 | 55.9 | 13.3 | 66 | Calm | | | 0 | | 10 | | | 0.284 | 7.19 | Raining | Imp. University Observatory. |
| Stuttgart | 28.62 | 726.9 | 29.55 | 750.5 | 54.5 | 12.5 | 67 | SE | | | 1 | | 10 | | | 0 | 0 | Foggy | Prof. Schoder. |
| Treves (Trier) | 29.02 | 737.0 | 29.53 | 750.1 | 55.9 | 13.3 | 54 | NW | | | 3 | | 10 | | | 0.130 | 3.29 | | Prof. Flesch. |
| Weissenburg (Bavaria) | 28.09 | 713.4 | 29.58 | 751.2 | 51.6 | 10.9 | 66 | ESE | 13 | 6 | | | 10 | NE | | 0 | 0 | Misty | Dr. Van Bebber |
| Wustrow, Naval School | 29.72 | 754.9 | 29.74 | 755.5 | 44.2 | 6.8 | 67 | E | | | 3 | | 8ks | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.70 | 754.3 | 30.08 | 764.0 | 71.1 | 21.7 | | SW | | | 1.5 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.79 | 756.7 | 29.84 | 757.9 | 86.9 | 30.5 | 44 | S | 12 | 5.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.30 | 744.3 | 29.76 | 755.9 | 97.2 | 36.2 | 10 | N | 7.5 | 3.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.83 | 757.6 | 29.86 | 758.6 | 81.0 | 27.2 | 79 | WNW | 14 | 6.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.85 | 707.4 | 29.81 | 757.2 | 89.9 | 33.2 | 26 | WNW | | | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.01 | 736.8 | 29.74 | 755.4 | 87.8 | 31.0 | 26 | NE | 5.1 | 2.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.30 | 693.3 | 29.80 | 756.8 | 83.4 | 28.6 | 64 | W | 13 | 5.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Roorkee | 28.81 | 731.7 | 29.69 | 754.2 | 86.4 | 30.2 | 18 | NE | | | | | 5 | | | 0 | 0 | D. clouds | |
| Agra | 29.13 | 739.9 | 29.68 | 753.7 | 96.4 | 35.8 | 17 | S | | | | | 0 | | | 0 | 0 | | |
| Nagpur | 28.68 | 728.4 | 29.68 | 753.9 | 98.7 | 37.1 | 9 | NW | 9.0 | 4.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.26 | 743.1 | 29.62 | 752.3 | 96.1 | 35.6 | 23 | WNW | 1.8 | 0.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.33 | 745.0 | 29.63 | 752.7 | 98.1 | 36.7 | 24 | Calm | 3.6 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.43 | 747.4 | 29.60 | 751.9 | 99.4 | 37.4 | 11 | W | 3.8 | 1.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.69 | 705.3 | 29.64 | 752.8 | 92.8 | 33.8 | 22 | WNW | 7.8 | 3.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.57 | 751.0 | 29.64 | 753.0 | 96.6 | 35.9 | 26 | SE | 3 | 1.3 | | | 1 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.61 | 752.0 | 29.63 | 752.5 | 90.8 | 32.7 | 34 | Calm | 0 | 0 | | | | | | 0 | 0 | Blue sky | |
| Goalpara | 29.24 | 742.7 | 29.62 | 752.4 | 89.9 | 33.2 | 42 | ENE | 10.2 | 4.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.59 | 751.6 | 29.68 | 753.9 | 85.6 | 29.8 | 82 | SW | 4.8 | 2.2 | | | 3 | | | 0 | 0 | Misty | |
| Sibsagar | 29.39 | 746.4 | 29.72 | 755.0 | 77.5 | 25.3 | 68 | ENE | 1.9 | 0.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.34 | 720.0 | 29.66 | 753.3 | 98.6 | 37.0 | 9 | NW | 4.8 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r —10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.37 | 746.1 | 29.78 | 756.5 | 58.8 | 14.9 | 73 | N | 1.8 | 0.8 | ..... | ..... | 10 | ..... | ..... | 0.858 | 21.8 | ..... | Prof. Giovanni Clodig |
| Milan | 29.12 | 739.7 | 29.64 | 752.8 | 49.6 | 9.8 | 95 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.232 | 5.9 | ..... | Prof. Schiaparelli. |
| Padua | 29.63 | 752.6 | 29.74 | 755.4 | 56.8 | 13.8 | 90 | E | 11.9 | 5.3 | ..... | ..... | 10 | E | ..... | 0.547 | 13.9 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.72 | 729.6 | 29.63 | 752.6 | 45.0 | 7.2 | 93 | NW | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.925 | 23.5 | ..... | Prof. P. F. Denza. |
| Genoa | 29.41 | 747.1 | 29.60 | 751.9 | 58.5 | 14.7 | 81 | SE | 7.4 | 3.3 | ..... | ..... | 10 | SE | ..... | 0.437 | 11.1 | ..... | Prof. G. M. Garibaldi |
| Mondovi | 27.74 | 704.6 | 29.65 | 753.1 | 40.8 | 4.9 | 92 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.681 | 17.3 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.60 | 751.8 | 29.65 | 753.0 | 61.2 | 16.2 | 75 | E | 15.0 | 6.7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.39 | 746.5 | 29.65 | 753.0 | 62.6 | 17.0 | 66 | SW | ..... | ..... | 2 | ..... | 10 | S | ..... | 0.043 | 1.1 | ..... | Cav. F. Meucci |
| Leghorn | 29.50 | 749.2 | 29.58 | 751.4 | 61.2 | 16.2 | 59 | S | ..... | ..... | 8 | ..... | 10 | S | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 29.49 | 749.1 | 29.67 | 753.5 | 73.8 | 23.2 | 35 | SSE | 18.6 | 8.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari |
| Lecce | 29.72 | 755.0 | 29.98 | 761.4 | 70.2 | 21.2 | 26 | SW | 33.6 | 15.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. C. De Giorgi |
| Cosenza | 28.98 | 736.1 | 29.86 | 758.5 | 68.5 | 20.3 | 76 | SE | 11.9 | 5.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.43 | 747.4 | 29.62 | 752.3 | 70.5 | 21.4 | 39 | W | ..... | ..... | 4 | ..... | 1 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.44 | 747.7 | 29.69 | 754.1 | 78.3 | 25.7 | 25 | SSW | 44.1 | 19.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore |
| Syracuse | 29.89 | 759.1 | 29.96 | 761.0 | 62.6 | 17.0 | 77 | SSE | 3.8 | 1.7 | ..... | ..... | 2 | W | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.26 | 743.3 | 29.82 | 757.4 | 69.4 | 20.8 | 46 | SE | 2.5 | 1.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. S. Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 29.80 | 756.9 | 29.82 | 757.4 | 50.8 | 10.4 | 96 | SSW | 1.6 | 0.7 | ..... | ..... | 2ck | ..... | ..... | 0.375 | 9.53 | Fair | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.71 | 754.6 | 29.92 | 759.9 | 54.4 | 12.4 | 66 | W | 6.7 | 3.0 | ..... | ..... | 1s | ..... | ..... | 0.020 | 0.51 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 29.39 | 746.5 | 29.46 | 748.3 | 52.2 | 11.2 | 97 | NNW | 11.2 | 5.0 | ..... | ..... | 10n | ..... | ..... | 1.510 | 38.35 | Raining | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9h 30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS,

Furnished by the cooperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.02 | 635.4 | 30.16 | 766.1 | 45.5 | 7.5 | 31 | W | ..... | ..... | 1 | 8 | 0 | W | ..... | 0 | 0 | Cloudy | Prof. L. Perez. |
| Leon | 24.37 | 619.1 | 30.05 | 763.4 | 58.1 | 14.5 | 58 | W | ..... | ..... | 1 | 4c | 0 | SW | ..... | 0 | 0 | ½ clouded | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.02 | 584.8 | 30.01 | 762.3 | 53.6 | 12.0 | 56 | Calm | 0 | 0 | ..... | 7c | 0 | W | ..... | 0 | 0 | Cloudy | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 51.1 | 10.6 | 40 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | M. V. de Leon, M. E. |
| Tlacotalpam | 29.62 | 752.3 | 29.63 | 752.6 | 79.3 | 26.3 | 73 | S | ..... | ..... | 3 | 7 | 0 | NW | ..... | 0 | 0 | Hazy | M. M. Chàzaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Puebla, (Catholic Institute) | 23.34 | 592.9 | 30.11 | 764.7 | 49.6 | 9.8 | 83 | NE | 4.9 | 2.2 | ..... | 3 | 0 | ..... | Calm | 0 | 0 | Fair | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.34 | 719.8 | 29.98 | 761.4 | 72.3 | 22.4 | 50 | NE | ..... | ..... | 2 | ..... | 7 | ..... | W | 0 | 0 | Cloudy | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guera |

NOTE.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft. Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.59 | 751.6 | 29.59 | 751.6 | 54.7 | 12.6 | ..... | S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Groningen | 29.55 | 750.6 | 29.61 | 752.0 | 50.2 | 10.1 | ..... | S | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Helder | 29.56 | 750.9 | 29.56 | 750.9 | 47.7 | 8.7 | ..... | SSW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Hellevoetsluis | 29.56 | 750.7 | 29.56 | 750.7 | 55.9 | 13.3 | 61 | WSW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Utrecht | 29.53 | 750.1 | 29.58 | 751.3 | 58.8 | 14.9 | 45 | W | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Light clouds | H. v. d. Brink |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.71 | 754.5 | 29.76 | 755.9 | 42.8 | 6.0 | 53 | SSW | 12.3 | 5.5 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.73 | 755.3 | 29.78 | 756.3 | 41.0 | 5.0 | 39 | Calm | 0 | 0 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.65 | 753.0 | 29.80 | 756.8 | 43.2 | 6.2 | 38 | WSW | 4 | 2 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.52 | 749.8 | 29.56 | 750.9 | 27.9 | — 2.3 | 89 | SW | 36 | 16 | ..... | ..... | 10 | ..... | ..... | 0.291 | 7.4 | Snowing..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.16 | 766.0 | 30.35 | 770.9 | 58.3 | 14.6 | 74 | SSW | 1.8 | 0.8 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.80 | 731.4 | 29.84 | 757.9 | 51.8 | 11.0 | 47 | WNW | 8.7 | 3.9 | ..... | ..... | 8 | WNW | ..... | 0.035 | 0.9 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.02 | 762.5 | 30.11 | 764.7 | 62.8 | 17.1 | 44 | SE | 8.1 | 3.6 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.53 | 750.1 | 29.89 | 759.3 | 52.2 | 11.2 | 53 | WNW | 16.1 | 7.2 | ..... | ..... | 6 | ..... | ..... | 0.114 | 2.9 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.23 | 767.8 | 30.30 | 769.6 | 61.9 | 16.6 | 44 | NE | 9.8 | 4.4 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd.t. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| Duque da Terceira, N. 12° 18′ 40″, W. 16° 54′ 00″ | ..... | ..... | 30.06 | 763.5 | 72.5 | 22.5 | ..... | ENE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 3 | ..... | D. clouds.... | C.C.da Fonseca Ferreira, Comd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, St. Thomas, Gulf of Guinea | ..... | ..... | 29.87 | 758.6 | 83.8 | 28.8 | ..... | SE | ..... | ..... | 3 | ..... | 4 | ..... | SE | 2 | SE | D. clouds.... | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. San Jose de Bissao, Senegambia | ..... | ..... | 29.97 | 761.2 | 82.0 | 27.8 | ..... | ESE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky.... | A. Ferreira, 2d Lt. |
| Sá da Bandeira, Ambrizette, 8.7° 13′, E. 12° 52′ | ..... | ..... | 29.77 | 756.1 | 83.3 | 28.5 | ..... | WSW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 2 | W | D clouds.... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 29.96 | 761.0 | 66.9 | 19.4 | ..... | NNW | ..... | ..... | 4 | ..... | 8 | ..... | NNW | 2 | NNW | Raining..... | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.35 | 745.5 | 29.78 | 756.3 | 47.5 | 8.6 | 58 | SSW | 7 | 3 | ..... | ..... | 4ck | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.34 | 745.3 | 29.78 | 756.3 | 35.8 | 2.1 | 75 | NNW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.43 | 747.6 | 29.68 | 753.9 | 34.2 | 1.2 | 91 | N | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing..... | Prof. Dr. Welhrauch. |
| St. Petersburg | 29.64 | 752.8 | 29.65 | 753.2 | 31.8 | — 0.1 | 96 | NE | 11 | 5 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing..... | Central Physical Obs. |
| Kieff | 29.10 | 739.0 | 29.73 | 755.1 | 46.6 | 8.1 | 64 | WNW | 18 | 8 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.83 | 757.7 | 29.90 | 759.5 | 65.7 | 18.7 | 42 | SSW | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.99 | 761.7 | 30.01 | 762.2 | 64.8 | 18.2 | 65 | SSW | 9 | 4 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 28.97 | 735.9 | 29.54 | 750.2 | 36.7 | 2.6 | 94 | S | 9 | 4 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | Light rain.... | Meteorological Obs. |
| Lugan | 29.60 | 751.9 | 29.80 | 757.0 | 58.1 | 14.5 | 47 | SW | 22 | 10 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.87 | 758.7 | 29.89 | 759.2 | 31.6 | — 0.2 | 76 | NW | 2 | 1 | ..... | ..... | 2cs | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.61 | 726.6 | 30.00 | 762.1 | 64.9 | 18.3 | 29 | NW | 22 | 10 | ..... | ..... | 6s | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.05 | 763.3 | 29.97 | 761.2 | 57.4 | 14.1 | 73 | NW | 9 | 4 | ..... | ..... | 10ks | ..... | ..... | Blank | Blank | ..... | Capt. Wisganow. |
| Krotkowo* | 29.46 | 748.3 | 29.94 | 760.6 | 39.2 | 4.0 | 88 | S | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.64 | 752.8 | 29.92 | 759.9 | 35.1 | 1.7 | 85 | ESE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.19 | 741.5 | 30.19 | 766.7 | 39.7 | 4.3 | 37 | SSE | 4 | 2 | ..... | ..... | 4c | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Nukuss | 29.67 | 753.6 | 29.89 | 759.3 | 74.7 | 23.7 | 46 | E | 20 | 9 | ..... | ..... | 9s | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.48 | 723.5 | 30.00 | 762.1 | 70.7 | 21.5 | 42 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.25 | 743.0 | 29.76 | 755.9 | 41.5 | 5.8 | 97 | NE | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.62 | 752.4 | 29.92 | 760.0 | 30.9 | — 0.6 | 53 | NNW | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking, (China) | 29.89 | 759.3 | 30.04 | 762.9 | 55.2 | 12.9 | 42 | S | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Vladivostock | 30.06 | 763.4 | 30.15 | 765.9 | 28.9 | — 1.7 | 75 | N | 18 | 8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.6 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.40 | 746.7 | 29.50 | 749.4 | 65.3 | 18.5 | 53 | SW | 4.5 | 2.03 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ½ Covered... | Antonio Ravo, Director |
| Bilbao, Met. Obs'y | 29.60 | 751.9 | 29.66 | 753.3 | 59.0 | 15.0 | 90 | NW | 2.0 | 0.91 | ..... | 4 | 3 | W | ..... | 0.114 | 2.9 | Cloudy..... | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.70 | 678.2 | ..... | ..... | 43.2 | 6.2 | 53 | SW | 8.7 | 3.89 | .... | ..... | 3 | ..... | ..... | 0 | 0 | Partly cl'dy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.46 | 697.5 | ..... | ..... | 46.0 | 7.8 | 67 | NW | 18.6 | 8.33 | ..... | 1 | 8 | W | ..... | 0 | 0 | Almost cov'd | The Staff. |
| Murcia, Met. Obs'y | 29.44 | 747.8 | 29.59 | 751.6 | 71.6 | 22.0 | 59 | W | 3.8 | 1.72 | ..... | 5 | 4 | ESE | ..... | 0.056 | 1.42 | Hail & rain. | Olayo Di..z, Director. |
| Santiago, Met. Obs'y | 28.88 | 732.0 | 29.74 | 755.3 | 44.2 | 6.8 | 89 | SW | 6.9 | 3.1 | ..... | ..... | 8 | ..... | ..... | 0.181 | 4.6 | Rainy ..... | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.89 | 759.3 | 29.96 | 761.0 | 77.5 | 25.4 | 85 | SE | 12.3 | 5.5 | ..... | 1cs;ck | 1k | ..... | ..... | 0 | 0 | Clear..... | Benito Vines, S. J |
| Manilla, Philippine Islands | 29.80 | 757.0 | 29.85 | 758.3 | 86.4 | 30.2 | 76 | ESE | 11.2 | 5.0 | ..... | 0 | 10n | E | ..... | 0 | 0 | Covered..... | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.78 | 756.5 | 29.88 | 759.0 | 66.1 | 18.4 | 73 | W | 6.6 | 3.0 | ..... | 0 | 7 | ..... | W | 0.273 | 6.9 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W.I | 29.94 | 760.6 | 30.04 | 762.9 | 80.6 | 27.0 | 72 | E | 9.6 | 4.31 | ..... | 3c | 3k | E | E | 0 | 0 | Clear..... | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.81 | 757.2 | 29.85 | 758.2 | 32.7 | 0.4 | ..... | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.82 | 757.5 | 29.87 | 758.8 | 32.7 | 0.4 | 59 | SW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.80 | 756.8 | 29.85 | 758.1 | 34.9 | 1.6 | 66 | SSW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.67 | 753.6 | 29.85 | 758.1 | 40.3 | 4.6 | 85 | Calm | ..... | ..... | 0 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.74 | 755.4 | 29.80 | 756.9 | 34.9 | 1.6 | 69 | NNE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.76 | 756.0 | 29.84 | 757.9 | 37.9 | 3.3 | 49 | NNE | 4.3 | 1.9 | ..... | ..... | 8 | S | ..... | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.19 | 713.7 | 29.56 | 750.7 | 44.4 | 6.9 | 93 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.441 | 11.2 | Raining | The Observatory. |
| Zurich | 27.88 | 708.2 | 29.52 | 749.9 | 52.3 | 11.3 | 64 | E | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.185 | 4.7 | Cloudy | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —10.5 mm.; Thermometer,—5.0 Cent.; Relative Humidity, +36 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,338.6 feet, and that of Zurich 470 m., or 1,542.0 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.08 | 764.0 | 72.5 | 22.5 | 34 | SW | 7 | 3.0 | ..... | ..... | 3 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.32 | 770.0 | 82.4 | 28.0 | ..... | SE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 30.06 | 763.4 | 74.7 | 23.7 | ..... | SW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut. (Syria,) Lee Obs'y | 30.00 | 762.0 | 30.11 | 764.8 | 68.0 | 20.0 | 67 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.60 | 751.8 | 29.68 | 753.9 | 36.5 | 2.4 | 67 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | Hon. J. Ferguson. |
| Brockville, Ontario | 29.51 | 749.5 | 29.82 | 757.4 | 35 | 1.7 | ..... | Calm | 0 | 0 | ..... | 0 | 5s | ..... | W | 0 | 0 | Fair | W. R. Bigg. |
| *Chatham, N. B | 29.65 | 753.1 | 29.71 | 754.6 | 35 | 1.7 | 62 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 29.68 | 753.9 | 29.72 | 754.9 | 34 | 1.1 | 70 | W | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.58 | 751.3 | 29.78 | 756.4 | 33.2 | 0.7 | 78 | NW | ..... | ..... | 1 | 0 | 5 | ..... | ..... | 0 | 0 | Clear | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 30.02 | 762.5 | 30.07 | 763.8 | 42.1 | 5.6 | 100 | WSW | 3 | 1.3 | ..... | 4k | 0 | ..... | ..... | 0 | 0 | Fair | W. H. Bevis. |
| *Father Point, Quebec | 29.61 | 752.1 | 29.63 | 752.6 | 32 | 0.0 | 95 | SW | 25 | 11.2 | ..... | ..... | 10n | ..... | ..... | 0.01 | 0.3 | Heavy snow | J. McWilliams. |
| Fredericton, N. B | 29.73 | 755.1 | 29.80 | 756.9 | 34.0 | 1.1 | 64 | NW | 3 | 1.3 | ..... | c | 0 | ..... | ..... | 0 | 0 | Fine | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.28 | 743.7 | 30.14 | 765.5 | 31 | — 0.6 | 80 | E | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Stewart. |
| Granton, Ontario | 28.61 | 726.7 | 29.75 | 755.6 | 33 | 0.6 | ..... | E | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | James Grant. |
| *Halifax, N. S | 29.63 | 752.6 | 29.77 | 756.1 | 38 | 3.3 | 65 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.072 | 1.83 | Clear | F. Allison, M. A. |
| Hamilton, Ontario | 29.40 | 746.7 | 29.78 | 756.4 | 35.3 | 1.8 | 86 | NE | ..... | ..... | 1 | 10cs | 0 | NE | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.46 | 748.3 | 29.80 | 756.9 | 33 | 0.6 | 86 | N | 8 | 3.6 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.66 | 753.4 | 29.70 | 754.4 | 40.7 | 4.8 | 72 | W | 12 | 5.4 | ..... | 3k | 0 | SW | ..... | 0 | 0 | Fine | C. H. Rigby. |
| Moose Factory, Ontario | 29.81 | 757.2 | 29.85 | 758.2 | 28.8 | — 1.8 | 98 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | J. R. Nason. |
| *Montreal, Quebec | 29.60 | 751.8 | 29.80 | 756.9 | 35 | 1.7 | 71 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.09 | 738.9 | 29.80 | 756.9 | 33 | 0.6 | 80 | N | 4 | 1.8 | ..... | 2ck | 5ks | NW | NW | 0 | 0 | Fair | Rev. R. Mosly. |
| Peterboro, Ontario | 29.63 | 737.3 | 29.80 | 756.9 | 37.7 | 3.2 | 63 | NE | ..... | ..... | 2 | ..... | 9ks | ..... | ..... | 0 | 0 | Cloudy | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.01 | 736.8 | 29.72 | 754.9 | 34 | 1.1 | 100 | NE | 12 | 5.4 | ..... | ..... | 10n | ..... | NE | 0 | 0 | Threatening | H. Morgan. |
| Port Hastings, N. S | 29.69 | 754.1 | 29.74 | 755.4 | 36.8 | 2.7 | ..... | W | 4 | 1.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.06 | 738.1 | 29.72 | 754.9 | 36 | 2.2 | 65 | NE | 12 | 5.4 | ..... | ..... | 10n | ..... | N | 0 | 0 | Cloudy | M. Payne. |
| *Quebec, Quebec | 29.46 | 748.3 | 29.80 | 756.9 | 29 | — 1.7 | 78 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.36 | 745.7 | 29.83 | 757.7 | 28 | — 2.2 | 77 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | W. H. McIntyre. |
| St. Andrews, N. B | 29.76 | 755.9 | 29.81 | 757.2 | 35 | 1.7 | 62 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| St. John, N. B | 29.63 | 752.6 | 29.80 | 756.9 | 34 | 1.1 | 71 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.04 | 737.6 | 29.77 | 756.1 | 32 | 0.0 | 70 | E | 2 | 0.9 | ..... | ..... | 8ks | ..... | ..... | 0 | 0 | Cloudy | K. Stewart. |
| Stayner, Ontario | 28.99 | 736.3 | 29.78 | 756.4 | 35 | 1.7 | 71 | Calm | 0 | 0 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.41 | 721.6 | 29.72 | 754.9 | 32.3 | 0.2 | 76 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Overcast | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.66 | 753.4 | 29.70 | 754.4 | 42 | 5.6 | 59 | W | 12 | 5.4 | ..... | 2k | 0 | W | ..... | 0 | 0 | Clear | T. C. Hill. |
| *Toronto, Ontario | 29.38 | 746.2 | 29.77 | 756.1 | 36 | 2.2 | 69 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0.11 | 2.8 | Cloudy | Magnetic Observatory. |
| Windsor, N. S | 29.70 | 754.4 | 29.79 | 756.7 | 36.5 | 2.5 | 81 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 41.0 | 5.0 | 91 | W | ..... | ..... | ..... | 10k | 10s | ..... | ..... | 0.40 | 10.2 | Cloudy | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrumental error and temperature. Inches. | BAROMETER. Corrected for instrumental error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUD. Amount. Up'er 0—10. | CLOUD. Amount. Low'r 0—10. | CLOUD. Direction. Upper. From— | CLOUD. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.59 | 751.6 | 29.83 | 757.7 | 35 | 1.7 | 80 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Alpena, Michigan | 29.14 | 740.1 | 29.80 | 756.9 | 35 | 1.7 | 61 | NE | 10 | 4.5 | ..... | 0 | 5s | ..... | NE | 0 | 0 | Fair | |
| Atlanta, Georgia | 28.65 | 727.7 | 29.76 | 755.9 | 62 | 16.7 | 83 | SW | 9 | 4.0 | ..... | 2k | 8n | SW | SW | Inap. | Inap. | Light rain | |
| Atlantic City, New Jersey | 29.77 | 756.1 | 29.79 | 756.7 | 45 | 7.2 | 100 | E | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Augusta, Georgia | 29.66 | 753.4 | 29.83 | 757.7 | 64 | 17.8 | 83 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | S | 0.22 | 5.6 | Cloudy | |
| Baltimore, Maryland | 29.70 | 754.4 | 29.75 | 755.6 | 52 | 11.1 | 93 | E | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | Inap. | Inap. | Foggy | |
| Barnegat, New Jersey | 29.74 | 755.4 | 29.76 | 755.9 | 45 | 7.2 | 84 | E | 7 | 3.1 | ..... | 2k | 5s | SW | SW | 0.01 | 0.3 | Fair | |
| Bismarck, Dakota | 28.04 | 712.2 | 29.89 | 759.2 | 37 | 2.8 | 54 | E | 12 | 5.4 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Boerne, Texas | 28.20 | 716.3 | 29.46 | 748.3 | 60 | 15.6 | 88 | Calm | 0 | 0 | ..... | ..... | 8ks | ..... | W | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.24 | 691.9 | 30.20 | 767.1 | 36 | 2.2 | 71 | NW | 12 | 5.4 | ..... | 5k | 0 | NW | ..... | 0.19 | 4.8 | Fair | |
| Boston, Massachusetts | 29.69 | 754.1 | 29.85 | 758.2 | 43 | 6.1 | 51 | SE | 6 | 2.7 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Brackettville, Texas | 28.52 | 724.4 | 29.51 | 749.5 | 65 | 18.3 | 73 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.92 | 734.6 | 29.96 | 761.0 | 32 | 0.0 | 69 | E | 8 | 3.6 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Brownsville, Texas | 29.52 | 749.8 | 29.56 | 750.8 | 78 | 25.6 | 82 | SE | 4 | 1.8 | ..... | 2k | 0 | SE | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 28.99 | 736.3 | 29.69 | 754.1 | 38.5 | 3.6 | 59 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 54 | 12.2 | 32 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.52 | 749.8 | 29.82 | 757.4 | 37 | 2.8 | 63 | Calm | 0 | 0 | ..... | 2ck | Haze | NW | Calm | 0 | 0 | Fair | |
| Cairo, Illinois | 29.32 | 744.7 | 29.70 | 754.4 | 58 | 14.4 | 76 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 0.31 | 7.9 | Cloudy | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.01 | 635.1 | 29.81 | 757.2 | 48 | 8.9 | 56 | NW | 16 | 7.2 | ..... | 2k | Haze | NW | Calm | 0 | 0 | Hazy | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 43 | 6.1 | 43 | N | ..... | ..... | 2 | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Camp, California | 27.40 | 696.0 | 29.97 | 761.2 | 41 | 5.0 | 82 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.28 | 7.1 | Clear | |
| Cape Hatteras, N. Carolina | 29.85 | 758.2 | 29.86 | 758.4 | 62 | 16.7 | 94 | SW | 14 | 6.3 | ..... | 8c | Haze | Calm | ..... | 0.01 | 0.3 | Fair | |
| Cape Henry, Virginia | 29.76 | 755.9 | 29.78 | 756.4 | 60 | 15.6 | 88 | SW | 7 | 3.1 | ..... | ..... | 10s | ..... | S | 0.80 | 20.3 | Cloudy | |
| Cape Lookout, N. Carolina | 29.84 | 757.9 | 29.86 | 758.4 | 61 | 16.1 | 94 | SW | 12 | 5.4 | ..... | 2ck | Haze | W | SW | Inap | Inap. | Hazy | |
| Cape May, New Jersey | 29.69 | 754.1 | 29.72 | 754.9 | 50 | 10.0 | 93 | E | 8 | 3.6 | ..... | ..... | Fog | ..... | ..... | 0.02 | 0.5 | Foggy | |
| Castroville, Texas | 28.86 | 733.0 | 29.53 | 750.0 | 67 | 19.4 | 64 | Calm | 0 | 0 | ..... | 0 | 8ks | ..... | S | 0 | 0 | Threatening | |
| Charleston, South Carolina | 29.80 | 756.9 | 29.86 | 758.4 | 67 | 19.4 | 84 | SW | 2 | 0.9 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 23.74 | 603.0 | 29.68 | 753.9 | 38 | 3.3 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0.03 | 0.8 | Foggy | |
| Chicago, Illinois | 29.05 | 737.9 | 29.74 | 755.4 | 38 | 3.3 | 72 | N | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cincinnati, Ohio | 28.94 | 735.1 | 29.57 | 751.1 | 54 | 12.2 | 87 | W | 2 | 0.9 | ..... | ..... | 10s | ..... | W | 0.41 | 10.4 | Threatening | |
| Cleveland, Ohio | 28.92 | 734.6 | 29.64 | 752.8 | 36 | 2.2 | 90 | NE | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.42 | 10.7 | Light rain | |
| Coleman City, Texas | 27.84 | 707.1 | 29.42 | 747.2 | 65 | 18.3 | 49 | W | 10 | 4.5 | ..... | 0 | 2ks | ..... | SW | 0 | 0 | Fair | |
| Columbus, Ohio | 28.72 | 729.5 | 29.54 | 750.3 | 46 | 7.8 | 84 | N | 7 | 3.1 | ..... | ..... | 10s | ..... | N | 0.13 | 3.3 | Cloudy | |
| Concho, Texas | 27.75 | 704.8 | 29.36 | 745 7 | 60 | 15.6 | 39 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.19 | 741.4 | 29.65 | 753.1 | 59 | 15.0 | 82 | W | 3 | 1.3 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.17 | 740.9 | 29.82 | 757.4 | 34 | 1.1 | 43 | N | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0.17 | 4.3 | Clear | |
| Deadwood, Dakota | 25.06 | 636.5 | ..... | ..... | 40 | 4.4 | 65 | E | 4 | 1.8 | ..... | 2k | 0 | E | ..... | 0 | 0 | Fair | |
| Decatur, Texas | 28.42 | 721.9 | 29.53 | 750.0 | 65 | 18.3 | 54 | E | ..... | ..... | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Denison, Texas | 28.87 | 733.3 | 29.64 | 752.8 | 56 | 13.3 | 75 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.45 | 621.0 | 29.67 | 753.6 | 42 | 5.6 | 91 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.09 | 2.3 | Cloudy | |
| Des Moines, Iowa | 28.96 | 735.6 | 29.86 | 758.4 | 35 | 1.7 | 70 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear | |
| Detroit, Michigan | 29.1 | 736.8 | 29.68 | 753.9 | 36 | 2.2 | 53 | NE | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Dodge City, Kansas | 27.18 | 690.4 | 29.45 | 747.8 | 42 | 5.6 | 100 | E | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light rain | |
| Dubuque, Iowa | 29.16 | 740.7 | 29.87 | 758.7 | 35 | 1.7 | 53 | NE | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Duluth, Minnesota | 29.26 | 743.2 | 29.96 | 761.0 | 33 | 0.6 | 79 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 28.87 | 733.3 | 29.58 | 751.3 | 66 | 18.9 | 59 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.74 | 755.4 | 29.80 | 756.9 | 37 | 2.8 | 53 | W | 6 | 2.7 | ..... | 0 | Haze | ..... | Calm | 0.01 | 0.3 | Clear | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 74 | 23.3 | 81 | E | ..... | ..... | 1 | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| El Paso, Texas | 26.02 | 660.9 | ..... | ..... | 51 | 10.6 | 39 | NW | 10 | 4.5 | ..... | 0 | 1s | ..... | NW | Inap. | Inap. | Clear | |
| Erie, Pennsylvania | 28.95 | 735.3 | 29.67 | 753.6 | 36 | 2.2 | 90 | NE | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.20 | 5.1 | Light rain | |
| Escanaba, Michigan | 29.22 | 742.2 | 29.90 | 759.4 | 33 | 0.6 | 61 | N | 4 | 1.8 | ..... | 10ck | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Florence, Arizona | 28.38 | 720.8 | 29.98 | 761.5 | 54 | 12.2 | 49 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.80 | 706.1 | ..... | ..... | 38 | 3.3 | 54 | SE | 15 | 6.7 | ..... | 0 | 2s | ..... | SE | 0 | 0 | Fair | |
| Fort Craig, New Mexico | 25.28 | 642.1 | 29.34 | 745.2 | 47 | 8.3 | 28 | NW | 8 | 3.6 | ..... | 0 | 5s | ..... | NW | 0 | 0 | Fair | |
| Fort Davis, Texas | 24.96 | 634.0 | 29.92 | 760.0 | 53 | 11.7 | 36 | SW | 3 | 1.3 | ..... | 5ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.17 | 740.9 | 29.69 | 754.1 | 53 | 11.7 | 93 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort Griffin, Texas | 28.30 | 718.8 | 29.54 | 750 3 | 53 | 11.7 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.08 | 687.8 | ..... | ..... | 42 | 5.6 | 65 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort McKavett, Texas | 27.40 | 696.0 | 29.24 | 742.7 | 59 | 15.0 | 23 | SW | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.72 | 754.9 | 29.76 | 755.9 | — 7 | —21.7 | 100 | SW | 38 | 17.0 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Fort Sill, Indian Territory | 28.44 | 722.4 | 29.53 | 750.0 | 52 | 11.1 | 86 | N | 16 | 7.2 | ..... | 0 | 5s | ..... | W | 0 | 0 | Fair | |
| Fort Stevenson, Dakota | 28.07 | 713.0 | ..... | ..... | 37 | 2.8 | 71 | E | 8 | 3.6 | ..... | 8ck | 0 | SE | ..... | 0 | 0 | Cloudy | |
| Fredericksburg, Texas | 27.89 | 708.4 | 29.36 | 745.7 | 72 | 22.2 | 46 | NE | 2 | 0.9 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Galveston, Texas | 29.60 | 751.8 | 29.64 | 752.8 | 73 | 22.8 | 95 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Graham, Texas | 28.50 | 723.9 | 29.50 | 749.3 | 59 | 15.0 | 54 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Grand Haven, Michigan | 29.12 | 739.6 | 29.77 | 756.1 | 40 | 4.4 | 56 | E | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 28.79 | 731.3 | 29.56 | 750.8 | 43 | 6.1 | 83 | N | 10 | 4.5 | ..... | ..... | 10n | ..... | N | 0.74 | 18.8 | Light rain | |
| Indianola, Texas | 29.61 | 752.1 | 29.63 | 752.6 | 73 | 22.8 | 95 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0.05 | 1 3 | Cloudy | |
| Jacksboro, Texas | 28.47 | 723.1 | 29.55 | 750.6 | 61 | 16.1 | 40 | SE | 3 | 1.3 | ..... | 0 | 2s | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.90 | 759.4 | 29.92 | 760.0 | 69 | 20.6 | 80 | S | 3 | 1.3 | ..... | 2cs | Haze | Calm | Calm | Inap. | Inap. | Fair | |
| Keokuk, Iowa | 29.14 | 740.1 | 29.76 | 755.9 | 39 | 3.9 | 55 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.32 | 8.1 | Clear | |
| Key West, Florida | 29.94 | 760.5 | 29.97 | 761.2 | 78 | 25.6 | 86 | S | 11 | 4.9 | ..... | 9c;k | 0 | W;S | ..... | 0 | 0 | Cloudy | |
| Kittyhawk, North Carolina | 29.86 | 758.4 | 29.89 | 759.2 | 60 | 15.6 | 94 | SW | 15 | 6.7 | ..... | 8cs | 0 | Calm | ..... | 0.32 | 8.1 | Fair | |
| Knoxville, Tennessee | 28.72 | 729.5 | 29.68 | 753.9 | 58 | 14.4 | 88 | W | 10 | 4.5 | ..... | 2ck | 5ks | W | SW | 0.68 | 17.3 | Fair | |
| La Crosse, Wisconsin | 29.14 | 740.1 | 29.89 | 759.2 | 35 | 1.7 | 70 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 25.86 | 656.8 | 30.01 | 762.2 | 48 | 8.9 | 49 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.20 | 741.7 | 29.52 | 749.8 | 73 | 22.8 | 63 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.89 | 733.8 | 29.73 | 755.1 | 45 | 7.2 | 68 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | ..... | 0.03 | 0.8 | Cloudy | |
| Los Angeles, California | 29.67 | 753.6 | 30.01 | 762.2 | 50.0 | 10.0 | 86 | NE | 4 | 1.8 | ..... | 0 | 5s | ..... | NE | 0 | 0 | Fair | |
| Louisville, Kentucky | 29.03 | 737.3 | 29.57 | 751.1 | 58 | 14.4 | 82 | SW | 8 | 3.6 | ..... | ..... | 10ks | ..... | W | 0.73 | 18.5 | Cloudy | |
| Lynchburg, Virginia | 29.08 | 738.6 | 29.74 | 755.4 | 57 | 13.9 | 87 | S | 4 | 1.8 | ..... | ..... | 10ks | ..... | Calm | 0.10 | 2.5 | Cloudy | |
| Madison, Wisconsin | 28.83 | 732.3 | 29.84 | 757.9 | 33 | 0.6 | 70 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.16 | 740.7 | 29.88 | 758.9 | 35 | 1.7 | 70 | E | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.01 | 711.4 | 29.72 | 754.9 | 57 | 13.9 | 69 | W | 2 | 0.9 | ..... | 1cs | 0 | S | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.39 | 746.5 | 29.70 | 754.4 | 61 | 16.1 | 83 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0.50 | 12.7 | Clear | |
| Milwaukee, Wisconsin | 29.06 | 738.1 | 29.80 | 756.9 | 36 | 2.2 | 71 | N | 18 | 8.0 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Mobile, Alabama | 29.78 | 756.4 | 29.82 | 757.4 | 69 | 20.6 | 85 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | SW | 0.23 | 5.8 | Cloudy | |
| Montgomery, Alabama | 29.61 | 752.1 | 29.84 | 757.9 | 64 | 17.8 | 89 | S | 5 | 2.2 | ..... | ..... | 10n | ..... | SW | 0.06 | 1.5 | Light rain | |
| Morgantown, West Virginia | 28.52 | 724.4 | 29.53 | 750.0 | 51 | 10.6 | 79 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | Calm | 0.07 | 1.8 | Cloudy | |
| Mt. Washington, N. H. | 23.39 | 594.1 | 29.75 | 755.6 | 13 | —10.6 | 89 | NW | 36 | 16.1 | ..... | ..... | Fog | ..... | NW | 0.13 | 3.3 | Foggy | |
| Nashville, Tennessee | 29.20 | 741.7 | 29.72 | 754.9 | 64 | 17.8 | 73 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.39 | 9.9 | Clear | |
| New Haven, Connecticut | 29.71 | 754.6 | 29.82 | 757.4 | 44 | 6.7 | 60 | NE | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| New London, Connecticut | 29.79 | 756.7 | 29.84 | 757.9 | 43 | 6.1 | 67 | N | 3 | 1.3 | ..... | 5ck | 5s | W | W | 0 | 0 | Cloudy | |
| New Orleans, Louisiana | 29.68 | 753.9 | 29.74 | 755.4 | 66 | 18.9 | 74 | SE | 28 | 12.5 | ..... | 0 | 10ks | ..... | S | 0.30 | 7.6 | Clearing | |
| Newport, Rhode Island | 29.78 | 756.4 | 29.83 | 757.7 | 45.5 | 7.5 | 58 | N | 2 | 0.9 | ..... | Haze | 1s | ..... | Calm | 0 | 0 | Fair | |
| New York, New York | 29.63 | 752.6 | 29.81 | 757.2 | 47 | 8.3 | 77 | E | 10 | 4.5 | ..... | 5cs | 5s;fg | Calm | ..... | 0.14 | 3.6 | Cloudy | |
| Norfolk, Virginia | 29.73 | 755.1 | 29.79 | 756.7 | 61 | 16.1 | 88 | SW | 7 | 3 1 | ..... | ..... | 10s | ..... | W | 0.85 | 21.6 | Cloudy | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 26.88 | 682.7 | 29.46 | 748.3 | 38 | 3.3 | 91 | NE | 5 | 2.2 | ..... | 10k | 0 | NE | ..... | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 30.12 | 765.0 | 30.16 | 766.1 | 38.2 | 3.4 | 91 | S | 6 | 2.7 | ..... | 0 | 4s | ..... | S | 0.24 | 6.1 | Fair | |
| Omaha, Nebraska | 28.67 | 728.2 | 29.78 | 756.4 | 39 | 3.9 | 82 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| Oswego, New York | 29.48 | 748.8 | 29.81 | 757.2 | 40 | 4.4 | 65 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Pembina, Dakota | 29.20 | 741.7 | 30.06 | 763.5 | 31 | — 0.6 | 100 | E | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pa | 29.74 | 755.4 | 29.79 | 756.7 | 48 | 8.9 | 85 | NE | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.70 | 729.0 | 30.50 | 774.7 | 55 | 12.8 | 62 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.46 | 443.5 | 29.67 | 753.6 | 11 | —11.7 | 80 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 0.34 | 8.6 | Cloudy | |
| Pioche, Nevada | 23.94 | 608.1 | 29.71 | 754.6 | 33 | 0.6 | 42 | NW | 6 | 2.7 | y ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Pittsburg, Pennsylvania | 28.76 | 730.5 | 29.54 | 750.3 | 46 | 7.9 | 86 | E | 3 | 1.3 | ..... | ..... | 10s;fg | ..... | Calm | 0.15 | 3.8 | Cloudy | |
| Port Huron, Michigan | 29.04 | 737.6 | 29.71 | 754.6 | 34 | 1.1 | 79 | N | 13 | 5.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Portland, Maine | 29.79 | 756.7 | 29.84 | 757.9 | 42 | 5.6 | 66 | S | 4 | 1.8 | ..... | 1k | 0 | Calm | ..... | 0 | 0 | Clear | |
| Portland, Oregon | 30.18 | 766.6 | 30.28 | 769.1 | 41.6 | 5.0 | 82 | S | 5 | 2.2 | ..... | 0 | 2s | ..... | ..... | 0.18 | 4.6 | Clear | |
| Prescott, Arizona | 24.58 | 624.3 | 29.94 | 760.5 | 42 | 5.6 | 58 | W | 5 | 2.2 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | 28.73 | 729.7 | 29.49 | 749.0 | 57 | 13.9 | 75 | SE | 15 | 6.7 | ..... | 8k | 2s | S | SE | 0 | 0 | Cloudy | |
| Punta Rassa, Florida | 29.96 | 761.0 | 29.97 | 761.2 | 75 | 23.9 | 86 | SE | 19 | 8.6 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Red Bluff, California | 29.54 | 757.0 | 30.21 | 767.3 | 45 | 7.2 | 68 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rio Grande City, Texas | 29.89 | 746.3 | 29.60 | 751.8 | 71 | 21.7 | 90 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Rochester, New York | 29.14 | 740.1 | 29.77 | 756.1 | 36 | 2.2 | 71 | E | 7 | 3.1 | ..... | 9ck | Sm'e | E | ..... | 0 | 0 | Cloudy | |
| Roseburg, Oregon | 29.74 | 755.4 | 30.33 | 770.4 | 41.6 | 5.0 | 87 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.15 | 3.8 | Cloudy | |
| Sacramento, California | 30.12 | 765.0 | 30.20 | 767.1 | 46.5 | 8.1 | 92 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.15 | 740.4 | 29.73 | 755.1 | 41 | 5.0 | 82 | N | 13 | 5.8 | ..... | ..... | 10s | ..... | N | 1.64 | 41.7 | Cloudy | |
| St. Marks, Florida | 29.87 | 758.7 | 29.89 | 759.2 | 67 | 19.4 | 95 | S | 14 | 6.3 | ..... | 0 | 9s | ..... | S | 1.33 | 33.8 | Cloudy | |
| St. Paul, Minnesota | 29.04 | 737.6 | 29.88 | 758.9 | 37 | 2.8 | 54 | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.52 | 648.2 | 29.85 | 758.2 | 37 | 2.8 | 63 | NW | 6 | 2.7 | ..... | ..... | 10n | ..... | NW | 0.60 | 15.2 | Sleeting | |
| San Antonio, Texas | 28.91 | 734.5 | 29.47 | 748.5 | 67 | 19.4 | 84 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | Inap | Inap. | Clear | |
| San Diego, California | 29.93 | 760.2 | 30.01 | 762.2 | 53 | 11.7 | 93 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | W | 0.04 | 1.0 | Cloudy | |
| Sandusky, Ohio | 29.00 | 736.6 | 29.67 | 753.6 | 37 | 2.8 | 80 | NE | 34 | 15.2 | ..... | ..... | 10n | ..... | NE | 0.55 | 14.0 | Light rain | |
| Sandy Hook, New Jersey | 29.76 | 755.9 | 29.79 | 756.7 | 43 | 6.1 | 92 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | SE | 0.06 | 1.5 | Cloudy | |
| San Francisco, California | 30.17 | 766.3 | 30.24 | 768.1 | 50.7 | 10.4 | 93 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Santa Fé, New Mexico | 22.99 | 583.9 | 29.53 | 750.0 | 35 | 1.7 | 90 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Savannah, Georgia | 29.77 | 756.1 | 29.86 | 758.4 | 66 | 18.9 | 84 | W | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | Light rain | |
| Shreveport, Louisiana | 29.44 | 747.8 | 29.85 | 758.1 | 65 | 18.3 | 89 | SW | 3 | 1.3 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Silver City, New Mexico | 24.10 | 612.1 | 30.29 | 769.4 | 42 | 5.6 | 65 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 29.88 | 758.9 | 29.91 | 759.7 | 62 | 16.7 | 94 | SW | 8 | 3.6 | ..... | 10cs | 0 | SW | ..... | Inap | Inap. | Cloudy | |
| Springfield, Massachusetts | 29.71 | 754.6 | 29.84 | 757.9 | 30 | 3.9 | 73 | Calm | 0 | 0 | ..... | 0 | 8ks | ..... | W | 0 | 0 | Cloudy | |
| Stockton, Texas | 28.70 | 678.2 | 29.70 | 754.4 | 54 | 12.2 | 43 | SW | 8 | 3.6 | ..... | 5c | 0 | SW | ..... | 0 | 0 | Fair | |
| Thatcher's Island, Mass. | 29.78 | 756.4 | 29.84 | 757.9 | 42 | 5.6 | 74 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Toledo, Ohio | 28.99 | 736.3 | 29.68 | 753.9 | 36 | 2.2 | 80 | NE | 25 | 11.2 | ..... | ..... | 10n | ..... | Calm | 0.25 | 6.3 | Heavy snow | |
| Tucson, Arizona | 27.43 | 696.7 | 29.98 | 761.5 | 49 | 9.4 | 48 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.78 | 756.4 | 30.29 | 769.4 | 40.0 | 4.4 | 73 | SW | 28 | 12.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 22 | — 5.6 | 85 | NW | ..... | ..... | 2 | ..... | 10s | ..... | NW | 0.04 | 1.0 | Cloudy | |
| Uvalde, Texas | 28.77 | 730.7 | 29.56 | 750.8 | 74 | 23.9 | 63 | Calm | 0 | 0 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| Vicksburg, Mississippi | 29.52 | 749.8 | 29.78 | 756.4 | 64 | 17.8 | 68 | S | 9 | 4.0 | ..... | 0 | 5s | ..... | S | 0.03 | 0.8 | Fair | |
| Virginia City, Montana | 24.62 | 610.1 | 29.50 | 749.3 | 31 | — 0.6 | 89 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.09 | 2.3 | Light snow | |
| Visalia, California | 29.77 | 756.1 | 30.15 | 765.8 | 46.7 | 8.2 | 85 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 29.62 | 752.3 | 29.73 | 755.1 | 54 | 12.2 | 57 | Calm | 0 | 0 | ..... | ..... | 10s;sne | ..... | Calm | 0.01 | 0.3 | Smoky | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 65 | N | ..... | ..... | 1 | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| Wilmington, N. Carolina | 29.80 | 756.9 | 29.87 | 758.7 | 64 | 17.8 | 83 | SW | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Winnemucca, Nevada | 25.70 | 652.8 | 30.06 | 763.5 | 34 | 1.1 | 61 | SW | 4 | 1.8 | ..... | 0 | 5s | ..... | SW | Inap. | nap | Fair | |
| Wood's Holl, Mass. | 29.76 | 755.9 | 29.80 | 756.9 | 46 | 7.8 | 61 | NW | 3 | 1.3 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Yankton, Dakota | 28.58 | 725.9 | 29.90 | 759.4 | 32 | 0.0 | 69 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yuma, Arizona | 29.72 | 754.9 | 29.88 | 758.9 | 57 | 13.9 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.15 | 715.0 | 29.51 | 749.5 | 57 | 13.9 | 35 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 29.91 | 759.7 | 29.96 | 761.0 | 79 | 26.1 | 78 | SE | 2.4 | 1.1 | ..... | 4c | 0 | Calm | ..... | 0 | 0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A. | 25.24 | 641.1 | ..... | ..... | 65.0 | 18.3 | 87 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.20 | 6.3 | ..... | Thomas Herran. |
| Navassa, W. I. | 29.94 | 760.5 | 30.02 | 762.5 | 81 | 27.2 | ..... | E | 15 | 6.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.01 | 762.2 | 30.01 | 762.2 | 82 | 27.8 | 83 | E | ..... | ..... | 2 | ..... | 8ks | ..... | ..... | 0.109 | 2.54 | ½ clouded | C. J. Hering. |
| Santiago de Cuba, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A. | 30.26 | 768.6 | 30.32 | 770.1 | 16.0 | — 8.9 | 92 | N | 8 | 3.6 | ..... | 1c | 1s | N | N | 0 | 0 | Fair | J. Fortescue & W. Wood |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,323 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,293 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.6 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.855 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.27 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.90 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.13 | 765.3 | 46 | 7.8 | 43.5 | 6.4 | 83 | WSW | 1 | 0.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 29.94 | 760.5 | 70 | 21.1 | 70 | 21.1 | 95 | SE | 2 | 0.9 | ..... | ..... | ..... | ..... | E | 0.56 | 14.2 | ..... | ..... | ..... | |
| Navy Yard, Portsmouth, N.H | 29.98 | 761.5 | 70 | 21.1 | 34 | 1.1 | 81 | W | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan.....* | 29.51‡ | 749.5‡ | ..... | ..... | 53 | 11.7 | 96 | N | ..... | ..... | 4 | ..... | 10n | ..... | NNE | 1.00 | 25.4 | ..... | ..... | Heavy rain. | |
| Adams, Panama .....*.. | 29.90 | 759.4 | 79 | 26.1 | 78 | 25.6 | 95 | NW | ..... | ..... | 2 | ..... | 10 | ..... | NW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Alaska, N. 53° 00,′ W. 128° 38′ .... | 29.86‡ | 758.4‡ | ..... | ..... | 38 | 3.3 | 91 | SSE | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0.5 | 13. | Smooth | ..... | Raining..... | |
| Alliance, Naples, Italy..... | 29.78‡ | 756.4‡ | ..... | ..... | 68 | 20.0 | 47 | SE | ..... | ..... | 3-4 | ..... | 1 | ..... | S;E | ..... | ..... | Light | S | Clear..... | |
| Ashuelot, Hong-Kong, China. ...*. | 29.93‡ | 760.2‡ | ..... | ..... | 66 | 18.9 | 89 | NW | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Rainy ..... | |
| Canonicus, New Orleans, La.. ....*. | 29.71 | 754.6 | 48 | 8.9 | 63 | 17.2 | 83 | SE | ..... | ..... | 2 | ..... | 5 | ..... | SE | ..... | ..... | ..... | ..... | Fair ..... | |
| Colorado, New York, N. Y..... | 29.80 | 756.9 | 48 | 8.9 | 47 | 8.3 | 62 | NE | 3 | 1.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Misty..... | |
| Constitution N. 33° 49′, W. 14° 39′..... | 30.11‡ | 764.8‡ | ..... | ..... | 58 | 14.4 | 76 | NNW | ..... | ..... | 6 | ..... | 4 | ..... | NW | ..... | ..... | Mod'ate | NW | Fair ..... | |
| Despatch, Genoa, Italy..... | 29.58‡ | 751.3‡ | ..... | ..... | 59 | 15.0 | 88 | SE | ..... | ..... | 3 | ..... | 10 | ..... | SE | ..... | ..... | Smooth | ..... | Rainy ..... | |
| Essex, N. 34° 38′, W. 54° 29′. ..*. | 29.99 | 761.7 | 69 | 20.6 | 67 | 19.4 | 100 | NW | ..... | ..... | 3 | ..... | 2 | ..... | N | 0 | 0 | ..... | ..... | Clear..... | |
| Franklin, Norfolk, Va.....*. | 29.90 | 759.4 | 70 | 21.1 | 62 | 16.7 | 94 | SW | 4 | 1.8 | ..... | ..... | 8 | ..... | SW | 0.6 | 15. | ..... | ..... | Overcast..... | |
| Gettysburg, Genoa, Italy .....*. | 29.67‡ | 753.6‡ | ..... | ..... | 59 | 15.0 | 100 | SE | ..... | ..... | 4-5 | ..... | 10 | ..... | SE | 0.15 | 3.8 | ..... | ..... | Rainy ..... | |
| Hartford, Montevideo, Uruguay.*. | 29.97 | 761.2 | 67 | 19.4 | 66 | 18.9 | 84 | N | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair..... | |
| Michigan, Erie, Pa.....†. | 29.82‡ | 757.4‡ | ..... | ..... | 35 | 1.7 | 90 | N | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Raining..... | |
| Monocacy, Shanghai, China.....*. | 30.15‡ | 765.8‡ | ..... | ..... | 52 | 11.1 | 73 | NNW | ..... | ..... | 2 | ..... | 8 | ..... | NNW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongahela N. 34° 42′, E. 139° 50′.....*. | 29.44‡ | 747.8‡ | ..... | ..... | 68 | 20.0 | 79 | SSW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | Mod'ate | Mod'ate | ..... | ..... | Raining..... | |
| New Hampshire, Port Royal, S. C.....*. | 29.92 | 760.0 | 68 | 20.0 | 66 | 18.9 | 89 | SSE | 4 | 1.8 | ..... | ..... | 10 | ..... | SSE | 0 | 0 | ..... | ..... | Cloudy..... | |
| Onward, Callao, Peru..... ...†*. | 30.02 | 762.5 | ..... | ..... | 67 | 19.4 | 84 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Palos, Tientsin, China.....*. | 30.16 | 766.1 | 72 | 22.2 | 47 | 8.3 | 62 | S | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 57 | 13.9 | 100 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Pensacola. Iquique, Peru..... ..... | 29.98‡ | 761.6‡ | ..... | ..... | 64 | 17.8 | 83 | SW | 3 | 1.3 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair ..... | |
| Plymouth. Portsmouth, N. H..... | 29.85‡ | 758.2‡ | ..... | ..... | 40 | 4.4 | 83 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Powhatan, Norfolk, Va..... | 29.77‡ | 756.1‡ | ..... | ..... | 72 | 22.2 | 62 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.035 | 0.89 | ..... | ..... | Cloudy ..... | |
| Quinnebaug, Algier, Algeria..... | 29.78‡ | 756.4‡ | ..... | ..... | 67 | 19.4 | 49 | W | ..... | ..... | 5 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Ranger. Amoy, China.....*. | 30.02‡ | 762.5‡ | ..... | ..... | 71 | 21.7 | 85 | NE | ..... | ..... | 3-5 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Raining..... | |
| Richmond. Pt. de Galle, Ceylon ..... | 29.82‡ | 757.4‡ | ..... | ..... | 80 | 26.7 | ?? | NW | ..... | ..... | 2 | ..... | 2 | ..... | NW | 0.1 | 2. | Ground | ..... | Fair ..... | |
| Rio Bravo, Brownsville, Texas..... | 29.61 | 752.1 | 75 | 23.9 | 77 | 25.0 | 95 | SE | ..... | ..... | 1 | ..... | Fog | ..... | S | ..... | ..... | ..... | ..... | Clear..... | |
| Santee, Annapolis, Md... ..... | 29.74‡ | 755.4‡ | ..... | ..... | 50 | 10.0 | ?? | NNE | ..... | ..... | 1 | ..... | 10 | ..... | NE | 0 | 0 | ..... | ..... | Foggy ..... | |
| Saratoga, N. 38° 42′, W. 36° 17′.... | 30.24‡ | 768.1‡ | ..... | ..... | 64 | 17.8 | 83 | SSW | ..... | ..... | 5 | ..... | 8 | ..... | NE | 0 | 0 | Mod'ate | NE | Misty..... | |
| St. Louis, League Island, Pa..... | 29.79‡ | 756.7‡ | ..... | ..... | 49 | 9.4 | 85 | ENE | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Misty..... | |
| Supply, New York, N. Y..... | 29.81‡ | 757.2‡ | ..... | ..... | 47 | 8.3 | 85 | SE | ..... | ..... | 0-1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Trenton Villefranche, France..*. | 29.56‡ | 750.8‡ | ..... | ..... | 59 | 15.0 | 88 | ESE | ..... | ..... | 1 | ..... | 10 | ..... | S;W | 0.05 | 1.3 | Mod'ate | S | Drizzling..... | |
| Tuscarora, Acapulco, Mexico.....*. | 29.90‡ | 759.4‡ | ..... | ..... | 78 | 25.6 | 78 | Calm | ..... | ..... | 0 | ..... | 9 | ..... | Calm | 0 | 0 | Smooth | ..... | Overcast..... | |
| Vandalia Norfolk, Va... ..... .....†. | 29.66‡ | 753.4‡ | ..... | ..... | 61 | 16.1 | 94 | WSW | ..... | ..... | 4 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Wabash, Boston, Mass..... | 29.87‡ | 758.7‡ | ..... | ..... | 50 | 10.0 | 86 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Wyoming, Beirut, Syria.....*. | 30.12‡ | 765.0‡ | ..... | ..... | 67 | 19.4 | 95 | NW | ..... | ..... | 1 | ..... | 2 | ..... | NW | ..... | ..... | Smooth | NW | Clear..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | | |
| | | Inches. | Millimeters | Fahrenheit. | Centigrade. | Per cent. | From | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | CHARACTER. | DIRECTION FROM— | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Tokio, Capt. Maury N. 34° 32′, W. 160° 51′ | | 30.64‡ | 778.2‡ | 60 | 15.6 | | NNE | | | 5 | | 0 | | | 0 | Smooth | | Blue sky | L. B. Walls. |
| S. S. Colima. N. 14° 28′, W. 93° 24′ †. | | 30.00‡ | 762.0‡ | 82 | 27.8 | | W | | | 3 | | 8 | | ESE | 0 | Small | WNW | D. clouds | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebur. |
| S. S. Dakota, Capt. H. G. Morse, San Francisco, Cal. † | | 30.22‡ | 767.6‡ | | | | Calm | | | 0 | | 0 | | | 0 | None | | Clear | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, Sydney, N. S. W. | | 30.44‡ | 773.2‡ | | | | S | | | 1 | | 0 | | | | | | Fine | R. C. Ghest, 1st Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroi *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer. | | | | | | | | | | | | | | | | | | | J. A. Thompson, 2d Off. |
| S. S Gaelic, N. 43° 44′, E. 166° 00′ *. | | 29.88‡ | 758.9‡ | 44 | 6.7 | | Var. | | | 3 | | Haze | | | 0 | Swell | Var. | Foggy | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, N. 34° 34′, E. 138° 55′ | | 29.56‡ | 750.8‡ | 57 | 13.9 | 94 | NNW | | | 6 | | 10 | | W | | 1 | Confused | Overcast | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the co-operation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 48° 22′, W. 20° 42′ | | 30.08‡ | 764.0‡ | 51.0 | 10.6 | 79 | N | | | 4 | | 5 | | N | 0 | Mod'ate | NE | Clear | Capt. C. Undütsch. |
| S. S. Leipzig, N. 42° 02′, W. 60° 26′ | | 29.90‡ | 759.4‡ | 48.0 | 8.9 | 78 | Calm? | | | 1? | | 10 | | | 8 hours | Mod'ate | WSW | Drizzling | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, Capt. G. Meyer, Baltimore, Md. | | 29.70‡ | 756.7‡ | | | | SW | | | 3 | | 5 | | SW | | | | Fair | G. Risius, 3rd Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

| NAMES OF VESSELS. | True course toward. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | L'w'r | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 40° 42′, W. 61° 19′ | | 29.86‡ | 758.4‡ | 50 | 10.0 | | ENE | | | 2 | | 9 | | SW | Heavy | Mod'ate | SW | Cloudy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud-direction as toward instead of from; sea-swell in general terms, as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Austrian | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Peruvian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| Baltimore, Md | | 29.75† | 755.6‡ | 52 | 11.1 | 86 | E | | | 1 | | 10 | | SE | | | | Foggy | J. Powell, 4th Officer. |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |
| **MARINE SERIES. (Miscellaneous.)** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
| Brigantine "George," of Halifax, N. 19° 06′, W. 64° 20′ | † | 30.09‡ | 764.3‡ | 88 | 31.1 | | E | | | | | | | | | Smooth | | D. clouds | Willard N. Pratt. |
| | | | | | | | | | | | | | | | | | | | |
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| NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively by the letters c, k, s, n, d, f, p, hz., fg. and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST BOSTON

# BULLETIN

OF

# INTERNATIOAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 16, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 30.09 | 764.3 | 61.3 | 16.3 | 81 | WNW | | | 5 | | 8 | | | 0.118 | 3.0 | Very cloudy | Kesxuche. |
| Algiers | | | 29.86 | 758.5 | 58.6 | 14.8 | 50 | W | | | 4 | | 0 | | | 0.098 | 2.5 | Clear | Tourilliere. |
| La Calle | | | 29.84 | 758.0 | 56.5 | 13.6 | 86 | NW | | | 5 | | 10 | | | 0.465 | 11.8 | Covered | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 29.86 | 758.5 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 29.95 | 760.8 | 50.5 | 10.3 | 74 | NW | | | 6 | | 10 | | | 0.386 | 9.8 | Raining | Herbin. |
| Tebessa | | | 29.87 | 758.8 | 61.3 | 16.3 | 31 | NW | | | 3 | | 10 | | | 0.374 | 9.5 | Covered | Watrin. |
| Geriville | | | 30.01 | 762.3 | 54.1 | 12.3 | 93 | N | | | 8 | | 10 | | | 0.236 | 6.0 | Covered | Brugnlaux. |
| Laghouat | | | 29.92 | 760.0 | 56.5 | 13.6 | 28 | NNW | | | 5 | | 2 | | | 0 | 0 | Fair | Bertrand. |
| Biskra | | | 29.84 | 758.0 | 61.7 | 16.5 | 37 | WNW | | | 6 | | 5 | | | 0 | 0 | Cloudy | Chauvaux. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

## AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.08 | 738.6 | 29.60 | 751.9 | 70.3 | 21.3 | 38 | SW | | | 2 | | 9 | | | 0.047 | 1.2 | Raining | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 28.77 | 730.8 | 29.54 | 750.4 | 67.3 | 19.6 | 42 | WSW | | | 3 | | 8 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 28.71 | 729.1 | 29.55 | 750.6 | 66.9 | 19.4 | 53 | S | | | 4 | | 10c | | N | 0 | 0 | | Julius Mikolik. |
| Gratz | 28.36 | 720.3 | 29.56 | 750.8 | 65.5 | 18.6 | 43 | WSW | | | 4 | | 7 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.28 | 718.3 | 29.62 | 752.4 | 76.5 | 24.7 | 41 | S | | | 4 | | 1 | | | 0 | 0 | | Prof. A. Gottschling. |
| Kremsmünster | 28.23 | 717.0 | 29.55 | 750.5 | 68.1 | 11.7 | 60 | NE | | | 2 | | 8 | | | 0 | 0 | | Prof. C. Wagner. |
| Lemberg | 28.60 | 726.4 | 29.54 | 750.4 | 66.7 | 19.3 | 50 | SW | | | 1 | | 7 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 29.56 | 750.9 | 29.67 | 753.7 | 68.3 | 14.6 | 89 | SE | | | 4 | | 10 | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.24 | 742.6 | 29.72 | 754.9 | 71.8 | 22.1 | 36 | S | | | 4 | | 8 | | | 0 | 0 | | Julius Csics, S. J. |
| Szegedin | 29.36 | 745.7 | 29.63 | 752.5 | 70.5 | 21.4 | 62 | S | | | 1 | | 7 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 29.58 | 751.4 | 29.69 | 754.0 | 68.5 | 14.7 | 83 | N | | | 1 | | 10 | | | 2.063 | 52.8 | Rainy | P. Busin. |
| Vienna | 28.87 | 733.3 | 29.57 | 751.0 | 61.2 | 16.2 | 49 | NW | | | 1 | | 9 | | | 0 | 0 | | I. R. Central Met. Obs'y |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

## BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | |
| Brussels | 29.31 | 744.4 | 29.59 | 749.4 | 51.3 | 10.7 | 56 | SSW | | | 2 | 1 | 8 | SSW | SW | 0.081 | 2.05 | | Prof. M. Passau. |
| Furnes | 29.47 | 748.6 | 29.59 | 749.2 | 47.3 | 8.5 | 92 | NW | | | 2 | | 8 | | | 0.122 | 3.1 | Thunder-storm. | Royal Observatory. |
| Maeseyck | 29.40 | 746.8 | 29.53 | 750.0 | 54.9 | 12.7 | 68 | SSW | | | 4 | | 9 | | | 0.055 | 1.4 | | M. E. de Cae. |
| | | | | | | | | | | | | | | | | | | | M. Pierrot. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

**Entered at the Post Office at Washington, D. C., as Second-Class Matter.**

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.48 | 748.8 | 29.58 | 751.3 | 39.9 | 4.4 | ..... | SE | 11 | 4.9 | ..... | ..... | 2 | ..... | ..... | 0.005 | 0.13 | Blue sky | W. Boswell. |
| Ardrossan | 29.52 | 749.8 | 29.54 | 750.3 | 44 | 6.7 | ..... | SSW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | Light rain | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.60 | 751.8 | 47.9 | 8.8 | ..... | WNW | 11 | 4.9 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.58 | 751.8 | 44 | 6.7 | ..... | WNW | 16 | 7.2 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.55 | 750.6 | 41.6 | 5.3 | ..... | NW | 12 | 5.4 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy | Thomas Mackereth. |
| Bradford, Yorkshire | 29.16 | 740.7 | 29.55 | 750.6 | 43.1 | 6.2 | ..... | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.18 | 4.6 | Overcast | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.96 | 761.0 | 29.99 | 761.7 | 84 | 28.9 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.52 | 749.8 | 42.0 | 5.6 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | H. Todd. [C. |
| Cardington | ..... | ..... | 29.52 | 749.8 | 44.4 | 6.9 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast | John McLaren. |
| Chatham, School M. E. | 29.40 | 746.7 | 29.53 | 750.0 | 39.7 | 4.3 | ..... | Calm | ..... | ..... | 0 | ..... | 9 | ..... | ..... | ..... | ..... | Drizzling | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.12 | 714.2 | 29.60 | 751.8 | 42.0 | 5.6 | ..... | NW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | Fine | Alexander Watt. |
| Donaghadee | 29.55 | 750.6 | 29.60 | 751.8 | 46 | 7.8 | ..... | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | J. Mac Gowan. |
| Dover | 29.46 | 748.3 | 29.49 | 749.0 | 45 | 7.2 | ..... | NW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | ½ clouded | J. Costello. |
| Falmouth, Observatory | 29.43 | 747.5 | 29.66 | 753.4 | 47.7 | 8.7 | ..... | WNW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.77 | 705.4 | 30.08 | 764.0 | 76.4 | 24.7 | ..... | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.66 | 753.4 | 29.89 | 759.2 | 87 | 30.6 | ..... | E | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's college | ..... | ..... | ..... | ..... | 51 | 10 6 | ..... | NNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 30.07 | 763.8 | 30.12 | 765.0 | 58.4 | 14.7 | ..... | W | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.33 | 745.0 | 29.54 | 750.3 | 43.9 | 6.6 | ..... | SW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy | D. G. Maclean. [C. |
| Great Yarmouth | 29.50 | 749.3 | 29.51 | 749.5 | 37 | 2.8 | ..... | NNE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Raining | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.37 | 746.0 | 29.54 | 750.3 | 40.2 | 4.6 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | The staff, for G.B. Airy |
| Guernsey | 29.38 | 746.2 | 29.60 | 751.8 | 43 | 6.1 | ..... | NNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Dr. S.E.Hoskins, F.R.S |
| Helston | 29.71 | 754.6 | 29.83 | 757.7 | 49 | 9.4 | ..... | NW | ..... | ..... | 2 | ..... | 4ok | ..... | ..... | 0.3 | 8. | Fine | M. P. Moyle. |
| Holyhead | 29.56 | 750.8 | 29.61 | 752.1 | 45 | 7.2 | ..... | NNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | John Tilston. |
| Jersey | 29.32 | 744.7 | 29.62 | 752.3 | 43.8 | 6.6 | ..... | NNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | J. Fisher. |
| Kew, Observatory | 29.51 | 749.5 | 29.55 | 750.6 | 41.9 | 5.5 | ..... | N | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | The Meteorological Of. |
| Leicester, Museum | 29.28 | 743.7 | 29.54 | 750.3 | 43.9 | 6.6 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.53 | 750.0 | 29.61 | 752.1 | 70 | 21.1 | ..... | E | ..... | ..... | 2 | ..... | 2k | ..... | ..... | ..... | ..... | Blue sky | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.44 | 747.8 | 29.54 | 750.3 | 43 | 6.1 | ..... | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.02 | 762.5 | 79.2 | 26.2 | ..... | SE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.37 | 746.0 | 29.57 | 751.1 | 42.6 | 5.9 | ..... | N | ..... | ..... | 2 | ..... | 10k | ..... | N | 0 | 0 | Overcast | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.04 | 737.6 | 29.57 | 751.1 | 39.9 | 4.4 | ..... | NNW | ..... | ..... | 0–1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.55 | 750.6 | 42 | 5.6 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | H. E. Bellamy. |
| Plymouth | 29.53 | 750.0 | 29.61 | 752.1 | 53.0 | 11.7 | ..... | NNW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | John Merrifield. |
| Roche's Point | 29.62 | 752.3 | 29.69 | 754.1 | 49 | 9.4 | ..... | N | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded | Wm. Kennedy. |
| Saint Ann's Head | 29.44 | 747.8 | 29.61 | 752.1 | 44 | 6.7 | ..... | NW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 41.1 | 5.1 | ..... | NW | 7 | 3.1 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Rev C.Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.87 | 758.7 | 29.94 | 760.5 | 71.0 | 21.7 | ..... | SW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | W. H. Lyne. |
| Sheffield | 29.30 | 744.2 | 29.59 | 751.6 | 41.0 | 5.0 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.01 | 0.3 | Overcast | W. F. Cooper. |
| Silloth Rectory | 29.67 | 761.1 | 29.60 | 751.8 | 47.5 | 8.6 | 59 | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.060 | 1.52 | D. clouds | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.16 | 740.7 | 29.56 | 750.8 | 42.5 | 5.8 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.42 | 747.2 | 29.64 | 752.8 | 44.0 | 6.7 | ..... | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | C. H. Griffith, F. M. S. |
| Thurso | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John Trotter. |
| Truro, Royal Institution | 29.62 | 752.3 | 29.66 | 753.9 | 52 | 11.1 | ..... | NW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | W. Newcombe. |
| Valencia, Observatory | 29.68 | 753.9 | 29.70 | 754.4 | 49.0 | 9.4 | ..... | NW | 9 | 4.0 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | The Meteorological Of. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.85 | 758.2 | 29.89 | 759.2 | 85 | 29.4 | 34 | NW | 8 | 3.6 | ..... | 6 | 8 | ..... | ..... | 0 | 0 | Dull | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.22 | 767.6 | 63 | 17.2 | 75 | SE | ..... | ..... | 2 | ..... | 4ks | ..... | ..... | 0.01 | 0.3 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.59 | 751.6 | 45.9 | 7.7 | ..... | E | ..... | ..... | 1 | 8ck | ..... | ..... | ..... | 0 | 0 | Fine | Andrew Gibb. |
| Mauritius, Observatory | 29.88 | 758.9 | 30.07 | 763.8 | 76.4 | 24.7 | 75 | ENE | 12.5 | 5.6 | ..... | ..... | 10 | ..... | ENE | ..... | ..... | Showery | C. Meldrum. |
| Melbourne, Observatory | 30.25 | 768.3 | 30.34 | 770.6 | 55.0 | 12.8 | 70 | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | R. L. J. Ellery. |
| MonachLt-house, (Hebrides) | ..... | ..... | 29.56 | 750.8 | 42 | 5.6 | ..... | N | ..... | ..... | 6 | 5 | 3 | NE | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.58 | 751.3 | 38 | 3.3 | ..... | NE | ..... | ..... | 2 | 2 | 6 | NE | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| BRITISH MARINE SERIES. VESSELS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 42′, E. 29° 25′ | ..... | ..... | 29.99‡ | 761.7‡ | 69 | 20.6 | ..... | NW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle-Isle, N. 49° 16′, W. 7° 07′ | ..... | ..... | 29.70‡ | 754.4‡ | 53 | 11.7 | ..... | NW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | Showery | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole, N. 38° 10′, W. 10° 03′ | ..... | ..... | 30.14‡ | 765.5‡ | 56 | 13.3 | ..... | NW | ..... | ..... | 5 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.22 | 666.0 | 29.94 | 760.5 | 68.0 | 20.0 | 93 | SE | ..... | ..... | 1 | 7cs;ck | ..... | ..... | ..... | 0.008 | 0.2 | ..... | Federico Maison |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—For St. Jose the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches for an altitude of 1,145 meters, or 3,756.6 feet; the distinction between the upper and lower clouds is not always made; the rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.42 | 747.3 | 29.47 | 748.5 | 35.2 | 1.8 | 95 | ESE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | ..... |
| Fanöe | 29.50 | 749.2 | 29.51 | 749.7 | 39.4 | 4.1 | 87 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.54 | 750.3 | 29.58 | 751.4 | 33.1 | 0.6 | 82 | ENE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 29.69 | 754.1 | 29.72 | 755.0 | 32.2 | 0.1 | 56 | N | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.35 | 745.4 | 29.52 | 749.7 | 37.0 | 2.8 | 93 | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.00 | 736.5 | 29.55 | 750.5 | 43.9 | 6.6 | 91 | E | ..... | ..... | 1 | ..... | 10 | ..... | E | 0.283 | 7.2 | Covered | Collignon, Director. |
| Amiens, Normal School | 29.50 | 749.2 | 29.61 | 752.0 | 46.0 | 7.8 | 77 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bonvallet, Director. |
| Avignon, Normal School | 29.60 | 751.8 | 29.67 | 753.8 | 47.7 | 8.7 | 86 | SSW | ..... | ..... | 1 | ..... | 10 | ..... | W | 0.283 | 7.2 | Raining | M. Giraud, Director. |
| Bar-sur-Seine | 29.01 | 736.8 | 29.56 | 750.8 | 52.9 | 11.6 | 65 | SW | ..... | ..... | 1 | ..... | 8kn | ..... | W | 0 | 0 | Very cloudy | J. Saillard, Director. |
| Beauvais, Normal School | 29.26 | 743.2 | 29.52 | 749.9 | 49.1 | 9.5 | 69 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | S | 0.083 | 2.10 | Covered | Frere Eugene Marie, Dr |
| Besançon, Normal School | 28.80 | 731.5 | 29.69 | 754.2 | 47.5 | 8.6 | 72 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.350 | 8.9 | Covered | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.70 | 728.9 | 29.60 | 751.7 | 44.4 | 6.9 | 88 | S | ..... | ..... | 1 | ..... | 10n | S | S | 0.39 | 10. | Covered | M. Marlot, Director. |
| Bourges, Normal School | 29.18 | 741.1 | 29.72 | 754.8 | 55.4 | 13 | 90 | SW | ..... | ..... | *6 | ..... | 10k | S | SW | 0.059 | 1.5 | Raining | A. Waquet, Director |
| Brest, Naval Observatory | 29.42 | 747.3 | 29.67 | 753.5 | 49.3 | 9.6 | 56 | NNE | ..... | ..... | 2 | ..... | 6 | ..... | NNE | 0.197 | 5.00 | Squally | M. de Rermaree, Director |
| Carcassonne, Normal School | 29.29 | 744.0 | 29.71 | 754.6 | 53.2 | 11.8 | 56 | W | ..... | ..... | 3 | ..... | 5 | W | W | 0.181 | 4.6 | ½ covered | September, Director. |
| Caen, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Lair, Director. |
| Chartres, Normal School | 28.98 | 736.0 | 29.56 | 750.7 | 39.6 | 4.2 | 95 | W | ..... | ..... | 1 | ..... | 10 | ..... | NW | 0.20 | 5. | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.24 | 742.7 | 29.56 | 750.7 | 53.6 | 12.0 | 54 | SW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.21 | 716.6 | 29.55 | 750.6 | 52.5 | 11.4 | 45 | SW | ..... | ..... | 2 | ..... | 8 | ..... | SW | 0.071 | 1.8 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.74 | 730.0 | 29.60 | 751.7 | 48.6 | 9.2 | 61 | W | ..... | ..... | 1 | ..... | 5kn | ..... | W | 0 | 0 | Cloudy | Dr. Coulet, Director |
| Commune de Grèasque* | 28.50 | 724.0 | 29.65? | 753.0? | 48.0 | 8.9 | 73 | NW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.732 | 18.6 | ¾ covered | M. Kina, Director. |
| Grenoble, Normal School | 28.90 | 734.1 | 29.69 | 754.0 | 41.7 | 5.4 | 94 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.984 | 25. | Raining | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.39 | 746.6 | 29.61 | 752.0 | 51.8 | 11.0 | 68 | WSW | ..... | ..... | 1 | ..... | 8 | ..... | W | 0.134 | 3.4 | Very cloudy | Mouillot, Director |
| Le Mans, Normal School | 29.15 | 740.5 | 29.46 | 748.3 | 45.0 | 7.2 | 83 | E | ..... | ..... | 1 | ..... | 8 | ..... | SE | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.74 | 730.0 | 29.66 | 753.4 | 48.4 | 9.1 | 66 | SW | ..... | ..... | 2 | ..... | 10n | ..... | SW | 0.378 | 9.60 | Covered | Baudry, Director. |
| Lorient, Naval Observatory | 29.58 | 751.3 | 29.68 | 753.8 | 48.2 | 9.0 | 84 | NNW | ..... | ..... | 3 | ..... | ..... | N | NW | 0.067 | 1.7 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff |
| Mirecourt, Normal School | 28.52 | 724.3 | 29.54 | 750.3 | 49.6 | 9.8 | 69 | S | ..... | ..... | 1 | ..... | 10 | ..... | S | 0.358 | 9.1 | Covered | M. Barbier, Director. |
| Nîmes, Normal School | 29.43 | 747.6 | 29.63 | 752.7 | 58.6 | 14.8 | 60 | W | ..... | ..... | 4 | ..... | 5 | ..... | W | 0.207 | 5.25 | Cloudy | Boyer, Director. |
| Privas, Normal School | 28.56 | 725.4 | 29.64 | 752.9 | 44.2 | 6.8 | 88 | N | ..... | ..... | 1 | ..... | 10 | S | N | ..... | ..... | Light rain | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.67 | 626.7 | ..... | ..... | 28.2 | — 2.1 | 100 | SW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0.071 | 1.8 | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.57 | 751.0 | 29.60 | 751.8 | 54.9 | 12.7 | 72 | W | ..... | ..... | 2 | ..... | 8 | WNW | WNW | 0.08 | 2. | ¾ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.43 | 747.6 | 29.52 | 749.8 | 48.2 | 9.0 | 70 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | SSW | 0.035 | 0.9 | Covered | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.56 | 750.9 | 29.59 | 751.6 | 46.4 | 8.0 | 72 | NNW | ..... | ..... | 4 | ..... | 8 | NNW | NNW | 0 | 0 | Very cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.35 | 745.5 | 29.52 | 749.7 | 52.3 | 11.3 | 69 | S | ..... | ..... | 1 | ..... | ..... | ..... | SSW | 0.201 | 5.1 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.61 | 726.7 | 29.71 | 754.4 | 44.6 | 7 | 85 | SW | ..... | ..... | 4 | ..... | 10 | W | WSW | 0.75 | 19. | Raining | T. Huguet, Director. |
| Toulouse, Observatory | 29.02 | 737.0 | 29.74 | 755.3 | 50.0 | 10.6 | 69 | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.031 | 0.8 | ..... | M. Mercadier Julier. |
| Versailles Observatory | 29.03 | 737.3 | 29.52 | 749.8 | 45.0 | 7.2 | 88 | S | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.049 | 1.25 | ..... | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.740 | 18.8 | ..... | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.86 | 758.3 | 29.88 | 759.0 | 79.5 | 26.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.08 | 2. | ..... | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 29.02 | 737.1 | 29.63 | 752.7 | 48.4 | 9.1 | 56 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.150 | 3.8 | Covered | Mr. Jays. |
| Mont-Louis | 24.47 | 621.6 | 29.79 | 756.6 | 38.3 | 3.5 | 48 | W | 15.0 | 6.7 | ..... | ..... | 3 | ..... | NW | 0.110 | 2.8 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.65 | 753.2 | 51.1 | 10.6 | 84 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.276 | 7.0 | Rainy | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.23 | 742.4 | ..... | ..... | 50.5 | 10.3 | 63 | SSW | ..... | ..... | 3 | ..... | 8 | ..... | SSW | 0.098 | 2.5 | ..... | Marié Davy, Director. |
| Perpignan | 29.56 | 750.9 | 29.67 | 753.6 | 54.9 | 12.7 | 37 | NE | 18.6 | 8.3 | ..... | ..... | 2 | ..... | W | 0.362 | 9.2 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.09 | 561.0 | ..... | ..... | 23.0 | — 5.0 | ..... | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.077 | 1.96 | Snowy | Gen'l de Nansouty. |
| Tours | 29.34 | 745.2 | 29.54 | 750.2 | 47.5 | 8.6 | 70 | W | ..... | ..... | 3 | ..... | 10 | ..... | W | 0.039 | 1.0 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.18 | 766.5 | 30.20 | 767.1 | 44.6 | 7.0 | 79 | ENE | 6.3 | 2.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand, Nice and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a.m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p.m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–1 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.74 | 729.9 | 29.56 | 750.9 | 52.7 | 11.5 | 63 | W | ..... | ..... | 4 | ..... | 4 | W | ..... | 0 | 0 | ..... | Prof. Dr. Hoh. |
| Berlin | 29.26 | 743.3 | 29.44 | 747.7 | 48.2 | 9.0 | 54 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Arndt. |
| Breslau | 29.00 | 736.5 | 29.52 | 749.8 | 60.6 | 15.9 | 51 | WSW | ..... | ..... | 4 | ..... | 3 | WSW | ..... | 0 | 0 | ..... | Royal University Obs'y |
| Carlsruhe | 29.17 | 740.8 | 29.58 | 751.4 | 52.5 | 11.4 | 66 | SW | ..... | ..... | 2 | ..... | 10 | SW | ..... | 1.315 | 33.4 | Raining | Albert Senz. |
| Cassel | 28.91 | 734.3 | 29.51 | 749.5 | 51.4 | 10.8 | 65 | W | ..... | ..... | 3 | ..... | 7 | SW | ..... | 0.518 | 13.14 | Raining | Dr. H. Möhl. |
| Crefeld | 29.34 | 745.1 | 29.49 | 749.1 | 57.2 | 14.0 | 58 | SW | ..... | ..... | 1 | ..... | 6k | ..... | ..... | 0.20 | 5. | ..... | Director Lose. |
| Emden | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. Prestel. |
| Frankfort on the Main | 29.21 | 742.0 | 29.58 | 751.3 | 59.0 | 15.0 | ..... | SSW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.370 | 9.4 | ..... | Physical Society. |
| Freienwalde on the Oder | 29.35 | 745.4 | 29.39 | 746.4 | 47.8 | 8.8 | 89 | SSW | ..... | ..... | 6 | ..... | 10ks | SSW | ..... | 0.358 | 9.1 | ..... | Assmann., M. D. |
| Friedrichshafen | 28.15 | 715.1 | 29.59 | 751.5 | 52.5 | 11.4 | 67 | WSW | ..... | ..... | 3 | ..... | 8 | SE | ..... | 0.413 | 10.5 | ..... | M. Wilhelm. |
| Hamburg | 29.45 | 748.0 | 29.52 | 749.8 | 41.5 | 5.3 | 92 | NNE | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0.366 | 9.3 | Raining | Captain F. Hegeman. |
| Kiel | 29.51 | 749.5 | 29.52 | 749.9 | 36.0 | 2.2 | 93 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.260 | 6.60 | ..... | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.38 | 746.3 | 29.47 | 748.4 | 45.1 | 7.3 | 89 | E | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0.220 | 5.6 | ..... | Prof. E. Luther. |
| Köslin | ..... | ..... | 29.31 | 744.5 | 50.0 | 10.0 | ..... | S | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | H. Müller. |
| Leipsic, Observatory | 29.10 | 739.1 | 29.52 | 749.7 | 49.6 | 9.8 | 69 | WSW | ..... | ..... | 5 | ..... | 10 | SW | ..... | 0.004 | 0.1 | ..... | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.51 | 749.6 | 29.56 | 750.8 | 38.5 | 3.6 | 88 | E | ..... | ..... | 6–7 | ..... | 10n | ..... | ..... | ..... | ..... | Raining | Skalweit. |
| Neufahrwasser | 29.42 | 747.2 | 29.43 | 747.6 | 46.6 | 8.1 | 92 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.299 | 7.6 | ..... | A. Lothes. |
| Posen | 29.17 | 741.0 | 29.45 | 748.1 | 59.9 | 15.5 | 50 | SW | ..... | ..... | 5 | ..... | 1 | ..... | ..... | 0.012 | 0.3 | ..... | Dr. Magener. |
| Strassburg (in Alsace) | 29.07 | 738.3 | 29.61 | 752.1 | 55.0 | 12.8 | 67 | S | ..... | ..... | 1 | ..... | 10 | W | ..... | 0.149 | 3.77 | ..... | Imp. University Observatory. |
| Stuttgart | 28.63 | 727.3 | 29.56 | 750.9 | 52.2 | 11.2 | 63 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.072 | 1.82 | Raining | Prof. Schoder. |
| Treves (Trier) | 29.02 | 737.1 | 29.54 | 750.2 | 54.1 | 12.3 | 50 | W | ..... | ..... | 5 | ..... | 10 | ..... | SW | 0.016 | 0.41 | ..... | Prof. Flesch. |
| Weissenburg (Bavaria) | 28.10 | 713.6 | 29.58 | 751.4 | 51.3 | 10.7 | 55 | Calm | 0 | 0 | .. | ..... | 7ck | ..... | ..... | 0 | 0 | Clearing | Dr. Van Bebber |
| Wustrow, Naval School | 29.35 | 745.5 | 29.37 | 746.1 | 35.8 | 2.1 | 100 | NE | ..... | ..... | 4 | ..... | 10n | ..... | ..... | 0.354 | 9.0 | ..... | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.63 | 752.6 | 30.02 | 762.5 | 65.5 | 18.6 | ..... | SW | ..... | ..... | 1.0 | ..... | ..... | ..... | ..... | ..... | ..... | Misty | Dr. J. F. J. Schmidt. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.76 | 756.0 | 29.81 | 757.2 | 86.7 | 30.9 | 40 | SW | 8 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Deesa | 29.28 | 743.6 | 29.73 | 755.2 | 99.3 | 37.4 | 5 | NW | 8.7 | 3.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Bombay | 29.75 | 755.5 | 29.78 | 756.5 | 82.5 | 28.1 | 82 | W | 11 | 4.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Poona | 27.81 | 706.3 | 29.75 | 755.6 | 93.7 | 34.3 | 20 | WNW | ..... | ..... | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Lahore | 28.96 | 735.6 | 29.68 | 753.9 | 94.1 | 34.5 | 14 | NW | 3.1 | 1.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Belgaum | 27.26 | 692.5 | 29.75 | 755.7 | 82.9 | 28.3 | 65 | W | 14 | 6.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0. | Blue sky | |
| Roorkee | 28.78 | 731.0 | 29.66 | 753.2 | 90.8 | 32.7 | 10 | NW | ..... | ..... | ..... | ..... | 1 | ..... | ..... | 0 | 0 | D. clouds | |
| Agra | 29.15 | 740.4 | 29.70 | 754.3 | 94.6 | 34.8 | 14 | W | ..... | ..... | ..... | ..... | 2 | ..... | ..... | 0 | 0 | D clouds | |
| Nagpur | 28.63 | 727.1 | 29.63 | 752.6 | 98.2 | 36.8 | 11 | Calm | 4.3 | 1.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Lucknow | 29.29 | 744.0 | 29.66 | 753.4 | 90.2 | 32.3 | 33 | WNW | 3.3 | 1.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Allahabad | 29.36 | 745.6 | 29.66 | 753.4 | 93.4 | 34.1 | 26 | NW | 4.3 | 1.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Patna | 29.42 | 747.3 | 29.60 | 751.8 | 96.8 | 36.0 | 13 | W | 1.6 | 0.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Hazaribagh | 27.66 | 702.5 | 29.61 | 752.0 | 91.3 | 32.9 | 26 | W | 7.1 | 3.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Cuttack | 29.56 | 750.7 | 29.64 | 752.7 | 88.9 | 31.6 | 62 | S | 4 | 1.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.57 | 751.2 | 29.60 | 751.7 | 92.7 | 33.7 | 33 | SSW | 7.0 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Goalpara | 29.16 | 740.6 | 29.53 | 750.1 | 92.8 | 33.8 | 20 | Calm | 6.2 | 2.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Chittagong | 29.57 | 751.0 | 29.66 | 753.4 | 86.9 | 30.5 | 83 | SSE | 5.6 | 2.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Misty | |
| Sibsagar | 29.28 | 743.7 | 29.61 | 752.2 | 81.3 | 27.4 | 61 | ENE | 1.2 | 0.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Jubbulpore | 28.34 | 720.0 | 29.67 | 753.5 | 95.2 | 24.6 | 9 | N | 3.8 | 1.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.29 | 744.0 | 29.70 | 754.4 | 55.0 | 12.8 | 88 | SW | 3.1 | 1.4 | ..... | ..... | 10 | ..... | ..... | 0.394 | 10.0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.08 | 738.5 | 29.59 | 751.6 | 59.7 | 15.4 | 42 | E | ..... | ..... | 4 | ..... | 8 | SSE | ..... | 0.827 | 21.0 | ..... | Prof. Schiaparelli. |
| Padua | 29.56 | 750.7 | 29.67 | 753.5 | 57.9 | 14.4 | 80 | N | 3.1 | 1.4 | ..... | ..... | 10 | S | ..... | 0.016 | 0.4 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.66 | 728.0 | 29.56 | 750.9 | 52.7 | 11.5 | 64 | ENE | 3.1 | 1.4 | ..... | ..... | 8 | E | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.44 | 747.9 | 29.63 | 752.7 | 59.0 | 15.0 | 70 | SW | 7.4 | 3.3 | ..... | ..... | 10 | S | ..... | 0.236 | 6.0 | ..... | Prof. G. M. Garibaldi |
| Mondovi | 27.66 | 702.5 | 29.57 | 751.1 | 50.9 | 10.5 | 70 | SW | ..... | ..... | 2 | ..... | 10 | NE | ..... | 0.224 | 5.7 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.61 | 752.1 | 29.66 | 753.3 | 60.1 | 15.6 | 76 | N | 3.1 | 1.4 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.40 | 746.8 | 29.66 | 753.3 | 59.9 | 15.5 | 83 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.157 | 4.0 | ..... | Cav. F. Meucci |
| Leghorn | 29.55 | 750.5 | 29.63 | 752.6 | 63.1 | 17.3 | 59 | S | ..... | ..... | 4 | ..... | 9 | S | ..... | 0.047 | 1.2 | ..... | Prof. P. Monte. |
| Rome | 29.46 | 748.3 | 29.63 | 752.7 | 67.3 | 19.6 | 57 | W | 6.3 | 2.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari |
| Lecce | 29.55 | 750.6 | 29.80 | 757.0 | 67.5 | 19.7 | 49 | SSW | 26.2 | 11.7 | ..... | ..... | 7 | SW | ..... | 0 | 0 | ..... | Prof. C. De Giorgi |
| Cosenza | 28.75 | 730.2 | 29.63 | 752.6 | 72.1 | 22.3 | 80 | SSE | 6.3 | 2.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.46 | 748.3 | 29.65 | 753.2 | 56.5 | 13.6 | 64 | W | ..... | ..... | 4 | ..... | 10 | NW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.35 | 745.5 | 29.60 | 751.9 | 64.8 | 18.2 | 57 | ENE | 3.1 | 1.4 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore |
| Syracuse | 29.60 | 751.9 | 29.67 | 753.7 | 65.3 | 18.5 | 80 | ENE | 7.4 | 1.3 | ..... | ..... | 7 | WSW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.08 | 738.5 | 29.63 | 752.6 | 69.1 | 20.6 | 64 | NE | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0.157 | 4.0 | ..... | Prof. F. Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.17 | 766.3 | 30.19 | 766.8 | 44.5 | 6.9 | 75 | NNW | 3.3 | 1.5 | ..... | ..... | 0 | ..... | ..... | 0.05 | 0.13 | Clear | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.96 | 761.0 | 30.17 | 766.3 | 45.9 | 7.7 | 72 | NE | 4.1 | 1.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | S. Takehayashi |
| Tokei (Yeddo) Observatory | 29.95 | 760.7 | 30.02 | 762.5 | 44.8 | 7.1 | 58 | N | 12.6 | 5.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.00 | 635.1 | 30.17 | 766.3 | 43.7 | 6.5 | 35 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | Prof. L. Perez. |
| Leon | 24.36 | 618.8 | 30.06 | 763.6 | 56.3 | 13.5 | 60 | NW | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. M. Leal. |
| Mexico, Central Obs'y | 22.99 | 584.0 | 30.00 | 762.1 | 51.8 | 11.0 | 41 | Calm | 0 | 0 | ..... | 10pc | 0 | SW | ..... | 0 | 0 | Hazy | The Staff. |
| Pabellon, (Aguascallientes) | ..... | ..... | ..... | ..... | 51.6 | 10.9 | 31 | NNW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | ..... | M. V. de Leon, M. E. |
| Tlacotalpam | 29.58 | 751.2 | 29.59 | 751.5 | 78.8 | 26.0 | 59 | S | ..... | ..... | 6 | 1 | 0 | SW | ..... | 0 | 0 | Clear | M. M. Chàzaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | 22.74 | 577.7 | 30.26 | 768.7 | 55.6 | 13.1 | ..... | SW | ..... | ..... | 1 | 0 | 1ks | ..... | ..... | 0 | 0 | Clear | J. Castrillon. |
| Puebla, (Catholic Institute) | 23.32 | 592.3 | 30.08 | 764.1 | 51.1 | 10.6 | 73 | NE | 0.4 | 0.2 | ..... | 7 | 0 | ..... | SW | 0 | 0 | Cloudy | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.31 | 719.0 | 29.97 | 761.2 | 72.3 | 22.4 | 38 | NE | ..... | ..... | 2 | 0 | 2 | ..... | SW | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guera |

NOTE.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201 m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.50 | 749.3 | 29.50 | 749.3 | 50.7 | 10.4 | ..... | NNW | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.043 | 1.1 | ..... | |
| Groningen | ..... | ..... | ..... | ..... | 50.5 | 10.3 | ..... | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.48 | 748.7 | 29.48 | 748.7 | 45.1 | 7.3 | ..... | S | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.063 | 1.6 | ..... | |
| Hellevoetsluis | 29.47 | 748.6 | 29.47 | 748.6 | 49.1 | 9.5 | 80 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.41 | 747.8 | 29.49 | 749.0 | 55.0 | 12.8 | 64 | WSW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.193 | 4.9 | Very cloudy | H. v. d. Brink |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instru-m'tal error and temperature. Inches. | Barometer. Corrected for instru-m'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.60 | 751.7 | 29.65 | 753.1 | 45.3 | 7.4 | 48 | SSW | 5.6 | 2.5 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.65 | 753.0 | 29.69 | 754.0 | 42.8 | 6.0 | 63 | SSE | 4 | 2 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.50 | 749.3 | 29.65 | 753.0 | 45.7 | 7.6 | 46 | E | 4 | 2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.63 | 752.7 | 29.68 | 753.8 | 35.6 | 2.0 | 69 | SW | 20 | 9 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.99 | 761.8 | 30.19 | 766.7 | 59.4 | 15.2 | 91 | WNW | 11.2 | 5.0 | ..... | ..... | 7 | ..... | ..... | 0.118 | 3.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.98 | 736.0 | 30.02 | 762.5 | 51.8 | 11.0 | 66 | WNW | 9.8 | 4.4 | ..... | ..... | 9 | WNW | ..... | 0 | 0 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.23 | 767.9 | 30.32 | 770.1 | 62.8 | 17.1 | 44 | SW | 3.8 | 1.7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.73 | 755.1 | 30.10 | 764.4 | 55.6 | 13.2 | 57 | WNW | 16.1 | 7.2 | ..... | ..... | 8 | ..... | ..... | 0.209 | 5.3 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.17 | 766.4 | 30.24 | 768.2 | 62.2 | 16.8 | 81 | WSW | 9.8 | 4.4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa. Com'd.t. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| Duque da Terceira, Geba River, Senegambia | ..... | ..... | 30.05 | 763.2 | 72.5 | 22.5 | ..... | Var. | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 2 | ..... | Blue sky | C.C.da Fonseca Ferreira, Comd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, St. Thomas, Gulf of Guinea | ..... | ..... | 29.86 | 758.5 | 83.8 | 28.8 | ..... | S | ..... | ..... | 1 | ..... | 3 | ..... | SE | 1 | SE | D. clouds | A. J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. San Jose de Bissao, Senegambia | ..... | ..... | 29.98 | 761.4 | 85.1 | 29.5 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 2 | ..... | Blue sky | A. Ferreira, 2d Lt |
| Sá da Bandeira | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo. Macao, China | ..... | ..... | 29.96 | 761.0 | 70.7 | 21.5 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 1 | ..... | Blue sky | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.03 | 737.3 | 29.43 | 747.6 | 67.3 | 19.6 | 49 | SSW | 18 | 8 | ..... | ..... | 9ks;ck | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.28 | 743.6 | 29.70 | 754.4 | 43.0 | 6.1 | 86 | E | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Astronomical Obs. |
| Dorpat | 29.58 | 751.4 | 29.83 | 757.7 | 40.6 | 4.8 | 64 | S | 4 | 2 | ..... | ..... | 2ck | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.76 | 756.0 | 29.78 | 756.4 | 36.3 | 2.4 | 79 | NNE | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.12 | 739.6 | 29.73 | 755.2 | 65.1 | 18.4 | 56 | SSE | 11 | 5 | ..... | ..... | 7c;ck | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.85 | 758.2 | 29.92 | 760.0 | 67.5 | 19.7 | 53 | SSW | 13 | 6 | ..... | ..... | 7cs | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.06 | 763 4 | 30.08 | 763.9 | 59.5 | 15.3 | 77 | S | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.19 | 741.5 | 29.75 | 755.7 | 37.0 | 2.8 | 93 | SW | 4 | 2 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.70 | 754.4 | 29.90 | 759.5 | 69.8 | 21.0 | 45 | WNW | 4 | 2 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.74 | 755.5 | 29.76 | 756.0 | 36.9 | 2.7 | 70 | WNW | 4 | 2 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.69 | 728.8 | 30.07 | 763.7 | 73.0 | 22.8 | 27 | SE | 4 | 2 | ..... | ..... | 4c | ..... | ..... | ..... | ..... | Light clouds | Physical Observatory. |
| Astrakhan | 30.10 | 764 6 | 30.02 | 762.5 | 68.9 | 20.5 | 31 | W | 9 | 4 | ..... | ..... | 7k | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.36 | 745.8 | 29.84 | 758.0 | 42.8 | 6.0 | 70 | SSW | 4 | 2 | ..... | ..... | 9kn | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.44 | 747.8 | 29.72 | 754.8 | 39.2 | 4.0 | 90 | S | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.06 | 738.0 | 30.04 | 762.9 | 41.9 | 5.5 | 56 | SSE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light rain | Meteorological Obs. |
| Nukuss | 29.67 | 753.5 | 29.90 | 759.4 | 59.7 | 15.4 | 75 | SW | 20 | 9 | ..... | ..... | 10ns | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.37 | 720.7 | 29.86 | 758.4 | 79.9 | 26.6 | 37 | Calm | 0 | 0 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.61 | 752.1 | 30.12 | 765.1 | 39.4 | 4.1 | 47 | N | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.89 | 759.1 | 30.19 | 766.8 | 30.0 | — 1.1 | 40 | N | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking, (China) | 29.71 | 754.6 | 29.85 | 758.2 | 57.7 | 14.3 | 59 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.97 | 761.3 | 30.07 | 763.8 | 33.6 | 0.9 | 84 | SE | 16 | 7 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.60 | 751 8 | 29.71 | 754.5 | 56.7 | 13.7 | 44 | WNW | 5.7 | 2.56 | ..... | ..... | 2k | ..... | ..... | 0.006 | 0.15 | ..... | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 29.81 | 757.1 | 29.87 | 758.6 | 54.7 | 12.6 | 82 | NW | 3.7 | 1.64 | ..... | 2 | 3 | SE | ..... | 0.185 | 4.7 | Almost cov'd | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.84 | 681.6 | ..... | ..... | 45.7 | 7.6 | 45 | W | 12.7 | 5.68 | ..... | ..... | 5 | ..... | ..... | 0.079 | 2.0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Oservatory | 27.64 | 702.0 | ..... | ..... | 48.0 | 8.9 | 75 | W | 17.9 | 8.00 | ..... | 1 | 8 | W | ..... | 0.008 | 0.2 | Raining | The Staff. |
| Murcia, Met. Obs'y | 29.73 | 755.2 | 29.88 | 759.0 | 62.6 | 17.0 | 39 | NW | 5.0 | 2.22 | ..... | 2 | 4 | W | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.04 | 737.6 | 29.94 | 760.5 | 52.0 | 11.1 | 61 | NW | 16.8 | 7.5 | ..... | ..... | 8 | ..... | ..... | 0.126 | 3.2 | Almost cov'd | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.83 | 757.7 | 29.90 | 759.4 | 81.0 | 27.2 | 76 | SSE | 16.0 | 7.0 | ..... | 1cs;ck | 1k | W | ..... | 0 | 0 | Fair | Benito Vines, S. J |
| Manilla, Philippine Islands. | 29.75 | 755.6 | 29.79 | 756.9 | 85.8 | 29.9 | 76 | NNE | 1.1 | 0.5 | ..... | 4 | 7 | W | E | 1.181 | 30.0 | Covered | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.03 | 762.8 | 30.13 | 765.3 | 57.0 | 13.9 | 58 | WNW | 14.0 | 6.3 | ..... | 0 | 6 | ..... | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W.I | 29.98 | 761.6 | 30.08 | 763.9 | 80.2 | 26.8 | 73 | SE | 2.2 | 1.00 | ..... | 3c | 3k | SE | SE | 0 | 0 | Clear | Leonardo deTejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.80 | 757.0 | 29.84 | 758.0 | 32.4 | 0.2 | ..... | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.79 | 756.7 | 29.84 | 758.0 | 35.6 | 2.0 | 78 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.75 | 755.6 | 29.80 | 756.9 | 37.8 | 3.2 | 66 | SE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.58 | 751.4 | 29.76 | 755.9 | 40.3 | 4.6 | 41 | SSE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.61 | 752.0 | 29.67 | 753.5 | 39.2 | 4.0 | 52 | E | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.66 | 753.3 | 29.73 | 755.2 | 42.4 | 5.8 | 33 | ESE | 8.1 | 3.6 | ..... | ..... | 6 | SW | ..... | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.21 | 716.5 | 29.67 | 753.7 | 41.7 | 5.4 | 81 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.287 | 7.3 | Covered | The Observatory. |
| Zurich | 27.99 | 711.0 | 29.65 | 753.2 | 47.1 | 8.4 | 81 | SE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.295 | 7.5 | Raining | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, −7.8 mm.; Thermometer,—6.6 Cent.; Relative Humidity, +24 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,338.6 feet, and that of Zurich 470 m., or 1,542.0 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.00 | 761.9 | 69.3 | 20.7 | 45 | SSE | 2. | 1.0 | ..... | 0 | ..... | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.24 | 768.0 | 68.0 | 20.0 | ..... | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | The Observatory. |
| Valona | ..... | ..... | 29.89 | 759.2 | 82.9 | 28.3 | ..... | S | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut. (Syria,) Lee Obs'y | 29.83 | 757.7 | 29.95 | 760.7 | 71.1 | 21.7 | 78 | NNE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.64 | 752.8 | 29.70 | 754.4 | 36.8 | 2.7 | 72 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Hon. J. Ferguson. |
| Brockville, Ontario | 29.56 | 750.8 | 29.88 | 758.9 | 38 | 3.3 | ..... | S | 1 | 0.4 | ..... | ..... | 8s | ..... | W | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N. B | 29.63 | 752.6 | 29.69 | 754.1 | 31 | — 0.6 | 74 | SW | 1 | 0.4 | ..... | 5k | 5ks | SW | SW | 0 | 0 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 29.65 | 753.1 | 29.69 | 754.1 | 36 | 2 2 | 79 | S | 4 | 1.8 | ..... | ..... | 8s | ..... | W | 0 | 0 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.59 | 751.6 | 29.78 | 756.4 | 36.5 | 2.5 | 74 | NW | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 30.25 | 768.3 | 30.30 | 769.6 | 40.1 | 4.5 | 100 | SW | 3 | 1.3 | ..... | 5cs | 0 | ..... | ..... | 0.35 | 8.9 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 29.67 | 753.6 | 29.70 | 754.4 | 35 | 1.7 | 90 | W | 4 | 1.8 | ..... | 8k | 2ks | W | W | 0.03 | 0.8 | Cloudy | J. McWilliams. |
| Fredericton, N. B | 29.64 | 752 8 | 29.72 | 754.9 | 38.1 | 3.4 | 65 | W | 2 | 0.9 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Overcast | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.37 | 746.0 | 30.23 | 767.8 | 34 | 1.1 | 84 | E | 7 | 3.1 | ..... | 0 | 2s | ..... | ..... | 0 | 0 | Fair | James Stewart. |
| Granton, Ontario | 28.83 | 732.3 | 29.97 | 761.2 | 32 | 0.0 | ..... | Calm | ..... | ..... | 0 | 2cs | 0 | ..... | ..... | 0 | 0 | Fine | James Grant. |
| *Halifax, N. S | 29.55 | 750.6 | 29.69 | 754.1 | 40 | 4.4 | 67 | W | 1 | 0.4 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Cloudy | F. Allison, M. A. |
| Hamilton, Ontario | 29.58 | 751.3 | 29.96 | 761.0 | 37.3 | 2.9 | 79 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.52 | 749.8 | 29.87 | 758.7 | 35 | 1.7 | 85 | NW | 3 | 1.3 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.66 | 753.4 | 29.70 | 754.4 | 43.5 | 6.4 | 79 | SW | 6 | 2.7 | ..... | 5k | 0 | SW | ..... | 0 | 0 | Fair | C. H. Rigby. |
| Moose Factory, Ontario | 30.01 | 762.2 | 30.05 | 763.3 | 30.5 | — 0.8 | 89 | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | J. R. Nason. |
| *Montreal, Quebec | 29.58 | 751.3 | 29.79 | 756.7 | 38 | 3.3 | 63 | W | 8 | 3.6 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.22 | 742.4 | 29.94 | 760.5 | 36 | 2.2 | 61 | N | 9 | 4.0 | ..... | 2ck | 0 | W | ..... | 0 | 0 | Fair | Rev. R. Mosly. |
| Peterboro, Ontario | 29.16 | 740.7 | 29.93 | 760.2 | 37.5 | 3.1 | 68 | N | ..... | ..... | 1 | 8k | 0 | ..... | ..... | 0 | 0 | Cloudy | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.25 | 742.9 | 29.97 | 761.2 | 35 | 1.7 | 80 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap | Clear | H. Morgan. |
| Port Hastings, N. S | 29.60 | 751.8 | 29.66 | 753.4 | 39.6 | 4.2 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.31 | 744.5 | 29.98 | 761.5 | 34 | 1.1 | 80 | NW | 5 | 2.2 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair | M. Payne. |
| *Quebec, Quebec | 29.41 | 747.0 | 29.74 | 755.4 | 32 | 0.0 | 90 | Calm | ..... | ..... | 0 | 0 | 2s | ..... | ..... | 0 | 0 | Fair | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.42 | 747.2 | 29.89 | 759.2 | 35 | 1.7 | 70 | NW | 6 | 2.7 | ..... | ..... | 8s | ..... | NW | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.64 | 752.8 | 29.69 | 754.1 | 38 | 3.3 | 84 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| St. John, N. B | 29.54 | 750.3 | 29.70 | 754.4 | 36 | 2.2 | 66 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Overcast | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.21 | 741.9 | 29.94 | 760.5 | 35 | 1.7 | 85 | N | 4 | 1.8 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Cloudy | K. Stewart. |
| Stayner, Ontario | 29.14 | 740.1 | 29.94 | 760.5 | 37 | 2.8 | 82 | Calm | 0 | 0 | ..... | 10k | 0 | NW | ..... | 0 | 0 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.61 | 726.7 | 29.94 | 760.5 | 32.8 | 0.4 | 90 | Calm | 0 | 0 | ..... | 1cs | 7s | ..... | ..... | 0 | 0 | Cloudy | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.68 | 753.9 | 29.72 | 754.9 | 45 | 7.2 | 53 | SW | 4 | 1.8 | ..... | 8ck | 0 | W | ..... | 0 | 0 | Fair | T. C. Hill. |
| *Toronto, Ontario | 29.54 | 750.3 | 29.93 | 760.2 | 39 | 3.9 | 67 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Magnetic Observatory. |
| Windsor, N. S | 29.59 | 751.6 | 29.69 | 754.1 | 37.0 | 2.8 | 85 | W | 1 | 0.4 | ..... | ..... | 10k;n | ..... | ..... | 0 | 0 | Overcast | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 38.0 | 3.3 | 72 | W | ..... | ..... | ..... | 2c | 2s | ..... | ..... | Inap. | Inap. | Fair | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Cloud. Amount. Up'er 0—10. | Cloud. Amount. Low'r 0—10. | Cloud. Direction. Upper. From— | Cloud. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.62 | 752.3 | 29.86 | 758.4 | 42 | 5.6 | 74 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.48 | 12.2 | Clear | |
| Alpena, Michigan | 29.32 | 744.7 | 29.98 | 761.5 | 36 | 2.2 | 61 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Atlanta, Georgia | 28.54 | 724.9 | 29.65 | 753.1 | 58 | 14.4 | 100 | E | 20 | 8.9 | ..... | ..... | 10n | ..... | Calm | 1.19 | 30.2 | Light rain | |
| Atlantic City, New Jersey | 29.88 | 758.9 | 29.89 | 759.2 | 46 | 7.8 | 77 | N | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0.11 | 2.8 | Clear | |
| Augusta, Georgia | 29.70 | 754.4 | 29.87 | 758.7 | 62 | 16.7 | 100 | N | 4 | 1.8 | ..... | ..... | 10n | ..... | N | 1.39 | 35.3 | Heavy rain | |
| Baltimore, Maryland | 29.89 | 759.2 | 29.94 | 760.5 | 47 | 8.3 | 62 | N | 11 | 4.9 | ..... | 2c | 2s | NW | NW | 0.32 | 8.1 | Fair | |
| Barnegat, New Jersey | 29.85 | 758.2 | 29.87 | 758.7 | 45 | 7.2 | 76 | N | 16 | 7.2 | ..... | 5k | 0 | N | ..... | 0.04 | 1.0 | Fair | |
| Bismarck, Dakota | 28.20 | 716.3 | 30.05 | 763.3 | 33 | 0.6 | 79 | E | 6 | 2.7 | ..... | 10k | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Boerne, Texas | 28.22 | 716.8 | 29.48 | 748.8 | 60 | 15.6 | 44 | NW | 6 | 2.7 | ..... | 2k | 0 | NW | ..... | 0.45 | 11.4 | Clear | |
| Boise City, Idaho | 27.39 | 695.7 | 30.35 | 770.9 | 43 | 6.1 | 75 | N | 3 | 1.3 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.64 | 752.8 | 29.80 | 756.9 | 38 | 3.3 | 91 | W | 10 | 4.5 | ..... | ..... | 10s | ..... | NW | 0.34 | 8.6 | Cloudy | |
| Bracketville, Texas | 28.59 | 726.2 | 29.60 | 751.8 | 57 | 13.9 | 58 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 29.02 | 737.1 | 30.06 | 763.5 | 30 | — 1.1 | 78 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Brownsville, Texas | 29.52 | 749.8 | 29.56 | 750.8 | 69 | 20.6 | 95 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Buffalo, New York | 29.22 | 742.2 | 29.94 | 760.5 | 34 | 1.1 | 95 | SW | 3 | 1.3 | ..... | 0 | 2s;fog | ..... | SW;Calm | 0.21 | 5.3 | Fair | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 32 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.52 | 749.8 | 29.81 | 757.2 | 39 | 3.9 | 64 | N | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Cairo, Illinois | 29.30 | 744.2 | 29.68 | 753.9 | 49 | 9.4 | 93 | N | 18 | 8.0 | ..... | ..... | 10n | ..... | N | 0.14 | 3.6 | Light rain | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.16 | 639.0 | 29.96 | 761.0 | 57 | 13.9 | Inap. | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 39 | 3.9 | 31 | S | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.47 | 697.7 | 30.04 | 763.0 | 55 | 12.8 | 68 | E | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 29.87 | 758.7 | 29.87 | 758.7 | 66 | 18.9 | 79 | NW | 7 | 3.1 | ..... | 8c | 0 | NW | ..... | 0.02 | 0.5 | Fair | |
| Cape Henry, Virginia | 29.87 | 758.7 | 29.89 | 759.2 | 55 | 12.8 | 87 | W | 10 | 4.5 | ..... | ..... | 10s | ..... | W | 0.05 | 1.3 | Cloudy | |
| Cape Lookout, N. Carolina | 29.87 | 758.7 | 29.89 | 759.2 | 63 | 17.2 | 89 | SW | 12 | 5.4 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| Cape May, New Jersey | 29.83 | 757.7 | 29.86 | 758.4 | 45 | 7.2 | 84 | N | 20 | 8.9 | ..... | 2cs | 2s | Calm | N | 0.72 | 18.3 | Fair | |
| Castroville, Texas | 28.89 | 733.8 | 29.56 | 750.8 | 63 | 17.2 | 38 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.20 | 5.1 | Clear | |
| Charleston, South Carolina | 29.82 | 757.4 | 29.87 | 758.7 | 67 | 19.4 | 79 | N | 1 | 0.4 | ..... | 0 | 8ks | ..... | W | 0.09 | 2.3 | Cloudy | |
| Cheyenne, Wyoming | 24.08 | 611.6 | 30.02 | 762.5 | 33 | 0.6 | 61 | NW | 16 | 7.2 | ..... | 0 | 8ks | ..... | NW | 0.02 | 0.5 | Cloudy | |
| Chicago, Illinois | 29.26 | 743.2 | 29.93 | 761.0 | 40 | 4.4 | 73 | N | 6 | 2.7 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Cincinnati, Ohio | 29.22 | 742.2 | 29.87 | 758.7 | 44 | 6.7 | 72 | E | 7 | 3.1 | ..... | 5c | 1s | W | Calm | 0.02 | 0.5 | Fair | |
| Cleveland, Ohio | 29.21 | 741.9 | 29.95 | 760.7 | 35 | 1.7 | 80 | E | 4 | 1.8 | ..... | 5ck | Fog | NW | Calm | 0.16 | 4.1 | Fair | |
| Coleman City, Texas | 27.86 | 707.6 | 29.49 | 749.0 | 50 | 10.0 | 65 | N | 6 | 2.7 | ..... | 1c | 5s | Calm | SW | 0 | 0 | Fair | |
| Columbus, Ohio | 29.03 | 737.3 | 29.88 | 758.9 | 40 | 4.4 | 73 | NE | 6 | 2.7 | ..... | 5cs | Fog | Calm | Calm | 0 | 0 | Fair | |
| Concho, Texas | 27.76 | 705.1 | 29.41 | 747.0 | 51 | 10.6 | 40 | NW | 32 | 14.3 | ..... | 5k | 0 | NW | ..... | 0.18 | 4.6 | Fair | |
| Corsicana, Texas | 29.14 | 740.1 | 29.60 | 751.8 | 58 | 14.4 | 88 | Calm | 0 | 0 | ..... | 2c | 2s | NW | W | 0.58 | 14.7 | Fair | |
| Davenport, Iowa | 29.33 | 745.0 | 29.98 | 761.5 | 37 | 2.8 | 71 | NE | 7 | 3.1 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.38 | 644.6 | ..... | ..... | 35 | 1.7 | 53 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0.24 | 6.1 | Cloudy | |
| Decatur, Texas | 28.50 | 723.9 | 29.63 | 752.6 | 60 | 15.6 | 77 | NE | 6 | 2.7 | ..... | 5ck | 0 | NE | ..... | 0 | 0 | Fair | |
| Denison, Texas | 28.86 | 733.0 | 29.64 | 752.8 | 56 | 13.3 | 87 | N | 3 | 1.3 | ..... | ..... | 10ks | ..... | NE | 0.15 | 3.8 | Cloudy | |
| Denver, Colorado | 24.74 | 628.4 | 29.96 | 761.0 | 38 | 3.3 | 91 | E | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.38 | 9.7 | Cloudy | |
| Des Moines, Iowa | 29.06 | 738.1 | 29.96 | 761.0 | 39 | 3.9 | 73 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 29.27 | 743.4 | 29.95 | 760.7 | 37 | 2.8 | 81 | NE | 4 | 1.8 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Dodge City, Kansas | 27.29 | 693.2 | 29.58 | 751.3 | 42 | 5.6 | 91 | N | 16 | 7.2 | ..... | ..... | 10s | ..... | N | 0.02 | 0.5 | Cloudy | |
| Dubuque, Iowa | 29.30 | 744.2 | 30.01 | 762.2 | 39 | 3.9 | 55 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Duluth, Minnesota | 29.43 | 747.5 | 30.13 | 765.3 | 37 | 2.8 | 81 | NE | 8 | 3.6 | ..... | 0 | 5s | ..... | NE | 0 | 0 | Fair | |
| Eagle Pass, Texas | 28.93 | 734.8 | 29.64 | 752.8 | 68 | 20.0 | 26 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.64 | 752.8 | 29.70 | 754.4 | 37 | 2.8 | 90 | SW | 2 | 0.9 | ..... | 5k | 5n | W | Calm | 0.01 | 0.3 | Light rain | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 76 | 24.4 | 86 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| El Paso, Texas | 26.19 | 665.2 | ..... | ..... | 48 | 8.9 | 10 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.22 | 742.2 | 29.94 | 760.5 | 39 | 3.9 | 82 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.48 | 12.2 | Clear | |
| Escanaba, Michigan | 29.37 | 746.0 | 30.04 | 763.0 | 33 | 0.6 | 70 | NE | 16 | 7.2 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Florence, Arizona | 28.55 | 725.2 | 30.15 | 765.8 | 50 | 10.0 | 32 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.94 | 709.7 | ..... | ..... | 41 | 5.0 | 57 | SE | 10 | 4.5 | ..... | 10ck | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Fort Craig, New Mexico | 25.49 | 647.4 | 29.55 | 750.6 | 40 | 4.4 | 48 | NW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Fort Davis, Texas | 25.06 | 636.5 | 30.02 | 762.5 | 48 | 8.9 | 16 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.12 | 739.6 | 29.64 | 752.8 | 55 | 12.8 | 93 | W | 2 | 0.9 | ..... | 5c | 0 | W | ..... | 0.10 | 2.5 | Fair | |
| Fort Griffin, Texas | 28.43 | 722.1 | 29.67 | 753.6 | 55 | 12.8 | 87 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.13 | 3.3 | Cloudy | |
| Fort Keogh, Montana | 27.46 | 697.5 | ..... | ..... | 36 | 2.2 | 90 | NW | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0.32 | 8.1 | Cloudy | |
| Fort McKavett, Texas | 27.44 | 697.0 | 29.30 | 744.2 | 56 | 13.3 | 57 | W | 24 | 10.7 | ..... | 2k | 5s | Calm | NW | 0 | 0 | Fair | |
| Fort St. Michael, Alaska | 30.22 | 767.6 | 30.26 | 768.6 | — 4 | —20.0 | 100 | SW | 10 | 4.5 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 28.50 | 723.9 | 29.59 | 751.6 | 51 | 10.2 | 86 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Fort Stevenson, Dakota | 28.22 | 716.8 | ..... | ..... | 31 | — 0.6 | 68 | E | 5 | 2.2 | ..... | 8cs | 0 | E | ..... | 0 | 0 | Cloudy | |
| Fredericksburg, Texas | 27.93 | 709.4 | 29.42 | 747.2 | 65 | 18.3 | 49 | SW | 20 | 8.9 | ..... | 0 | 5ks | ..... | SW | 0 | 0 | Fair | |
| Galveston, Texas | 29.59 | 751.6 | 29.64 | 752.8 | 68 | 20.0 | 90 | NE | 12 | 5.4 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Graham, Texas | 28.57 | 725.7 | 29.59 | 751.6 | 58 | 14.4 | 70 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.52 | 13.2 | Cloudy | |
| Grand Haven, Michigan | 29.30 | 744.2 | 29.96 | 761.0 | 39 | 3.9 | 64 | NE | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.07 | 738.4 | 29.85 | 758.2 | 43 | 6.1 | 67 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Indianola, Texas | 29.62 | 752.3 | 29.64 | 752.8 | 71 | 21.7 | 95 | Calm | 0 | 0 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.50 | 729.3 | 29.60 | 751.8 | 57 | 13.9 | 94 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Jacksonville, Florida | 29.83 | 757.7 | 29.85 | 758.2 | 71 | 21.7 | 80 | S | 7 | 3.1 | ..... | 2k | 0 | S | ..... | 0.01 | 0.3 | Fair | |
| Keokuk, Iowa | 29.24 | 742.7 | 29.87 | 758.7 | 38 | 3.3 | 76 | NE | 12 | 5.4 | ..... | 2k | 0 | W | ..... | 0 | 0 | Clear | |
| Key West, Florida | 29.88 | 758.9 | 29.91 | 759.7 | 78 | 25.6 | 86 | SE | 14 | 6.3 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 29.71 | 754.6 | 29.84 | 757.9 | 65 | 18.3 | 84 | NW | 15 | 6.7 | ..... | 5c | 0 | Calm | ..... | Inap. | Inap. | Fair | |
| Knoxville, Tennessee | 28.73 | 729.7 | 29.70 | 754.4 | 58 | 14.4 | 82 | NE | 4 | 1.8 | ..... | ..... | 10n | ..... | S | Inap. | Inap. | Light rain | |
| La Crosse, Wisconsin | 29.24 | 742.7 | 30.00 | 762.0 | 37 | 2.8 | 71 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.03 | 661.2 | 30.18 | 766.6 | 39 | 3.9 | 31 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.27 | 743.4 | 29.60 | 751.8 | 67 | 19.4 | 64 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.00 | 736.6 | 29.84 | 757.9 | 48 | 8.9 | 56 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Los Angeles, California | 29.66 | 753.4 | 30.00 | 762.0 | 51.5 | 10.8 | 79 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.24 | 742.7 | 29.79 | 756.7 | 47 | 8.3 | 77 | NE | 10 | 4.5 | ..... | ..... | 10s;sm' | ..... | Calm | Inap. | Inap. | Cloudy | |
| Lynchburg, Virginia | 29.16 | 740.7 | 29.82 | 757.4 | 60 | 15.6 | 76 | NE | 4 | 1.8 | ..... | 0 | 8ks | ..... | Calm | 0 | 0 | Cloudy | |
| Madison, Wisconsin | 29.00 | 736.6 | 30.00 | 762.0 | 37 | 2.8 | 71 | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.34 | 745.2 | 30.06 | 763.5 | 35 | 1.7 | 70 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Mason, Texas | 28.02 | 711.7 | 29.71 | 754.6 | 61 | 16.1 | 45 | W | 2 | 0.9 | ..... | ..... | 10s | ..... | W | 0.03 | 0.8 | Cloudy | |
| Memphis, Tennessee | 29.28 | 743.7 | 29.59 | 751.6 | 54 | 12.2 | 93 | N | 14 | 6.3 | ..... | ..... | 10n | ..... | N | 0.98 | 24.9 | Heavy rain | |
| Milwaukee, Wisconsin | 29.25 | 742.9 | 30.00 | 762.0 | 38 | 3.3 | 81 | N | 12 | 5.4 | ..... | 1c | 0 | N | ..... | 0 | 0 | Clear | |
| Mobile, Alabama | 29.60 | 751.8 | 29.65 | 753.1 | 74 | 23.3 | 92 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | SW | 1.68 | 42.7 | Cloudy | |
| Montgomery, Alabama | 29.42 | 747.2 | 29.65 | 753.1 | 62 | 16.7 | 88 | SE | 6 | 2.7 | ..... | ..... | 10ks | ..... | SW | 2.37 | 60.2 | Threatening | |
| Morgantown, West Virginia | 28.83 | 732.3 | 29.89 | 758.9 | 42 | 5.6 | 83 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | NE | 0.13 | 3.3 | Cloudy | |
| Mt. Washington, N. H. | 23.38 | 593.8 | 29.74 | 755.4 | 18 | — 7.8 | 100 | NW | 24 | 10.7 | ..... | ..... | 10n | ..... | NW | 0.22 | 5.6 | Light snow | |
| Nashville, Tennessee | 29.10 | 739.1 | 29.63 | 752.6 | 53 | 11.7 | 93 | NE | 5 | 2.2 | ..... | ..... | 10n | ..... | NE | 0.15 | 3.8 | Light rain | |
| New Haven, Connecticut | 29.72 | 754.9 | 29.83 | 757.7 | 46 | 7.8 | 73 | NW | 15 | 6.7 | ..... | 0 | 5ks | ..... | NW | 0.39 | 9.9 | Fair | |
| New London, Connecticut | 29.76 | 755.9 | 29.81 | 757.2 | 43 | 6.1 | 79 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | 0.21 | 5.3 | Cloudy | |
| New Orleans, Louisiana | 29.58 | 751.3 | 29.63 | 752.6 | 73 | 22.8 | 95 | S | 5 | 2.2 | ..... | 0 | 8ks | ..... | S | 0 | 0 | Fair | |
| Newport, Rhode Island | 29.75 | 755.6 | 29.80 | 756.9 | 42 | 5.6 | 83 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.16 | 4.1 | Cloudy | |
| New York, New York | 29.74 | 754.4 | 29.88 | 758.9 | 46 | 7.8 | 68 | NW | 7 | 3.1 | ..... | 2cs | Haze | Calm | Calm | 0.25 | 6.3 | Fair | |
| Norfolk, Virginia | 29.82 | 757.4 | 29.88 | 758.9 | 59 | 15.0 | 82 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.05 | 687.1 | 29.69 | 754.1 | 33 | 0.6 | 89 | SE | 1 | 0.4 | ..... | 5ck | 0 | SW | ..... | 0 | 0 | Fair | |
| Olympia, Washington Ter. | 30.31 | 769.9 | 30.35 | 770.9 | 37.0 | 2.8 | 90 | S | 5 | 2.2 | ..... | 0 | 4s | ..... | Calm | 0.14 | 3.6 | Fair | |
| Omaha, Nebraska | 28.78 | 731.0 | 29.90 | 759.4 | 41 | 5.0 | 65 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.57 | 751.1 | 29.89 | 759.2 | 40 | 4.4 | 82 | SW | 6 | 2.7 | ..... | 2c | 0 | NW | ..... | 0.07 | 1.8 | Fair | |
| Pembina, Dakota | 29.28 | 743.7 | 30.14 | 765.5 | 28 | — 2.2 | 88 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pa | 29.86 | 758.4 | 29.91 | 759.7 | 44 | 6.7 | 76 | N | 25 | 11.2 | ..... | 2cs | Haze | Calm | Calm | 0.04 | 1.0 | Fair | |
| Phœnix, Arizona | 28.88 | 733.5 | 30.72 | 780.3 | 51 | 10.6 | 34 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.54 | 445.5 | 29.75 | 755.6 | 4 | —15.6 | 74 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 1.63 | 41.4 | Cloudy | |
| Pioche, Nevada | 24.15 | 613.4 | 29.92 | 760.0 | 30 | — 1.1 | 47 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.14 | 740.1 | 29.97 | 761.2 | 34 | 1.1 | 90 | NW | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Port Huron, Michigan | 29.28 | 743.7 | 29.96 | 761.0 | 36 | 2.2 | 80 | NE | 8 | 3.6 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Portland, Maine | 29.70 | 754.4 | 29.74 | 755.4 | 40 | 4.4 | 82 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.32 | 8.1 | Cloudy | |
| Portland, Oregon | 30.37 | 771.4 | 30.48 | 774.2 | 38.0 | 3.3 | 96 | S | 5 | 2.2 | ..... | ..... | Fog | ..... | SE | 0.43 | 10.9 | Foggy | |
| Prescott, Arizona | 24.77 | 629.2 | 30.13 | 765.3 | 34 | 1.1 | 34 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | 28.92 | 734.6 | 29.72 | 754.9 | 60 | 15.6 | 82 | N | 13 | 5.8 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Punta Rassa, Florida | 29.89 | 759.2 | 29.91 | 759.7 | 77 | 25.0 | 82 | SE | 20 | 8.9 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Red Bluff, California | 29.86 | 758.4 | 30.23 | 767.8 | 48 | 8.9 | 70 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rio Grande City, Texas | 29.44 | 747.8 | 29.65 | 753.1 | 70 | 21.1 | 90 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rochester, New York | 29.29 | 744.0 | 29.92 | 760.0 | 37 | 2.8 | 81 | W | 9 | 4.0 | ..... | 0 | 1s | ..... | W | 0.20 | 5.1 | Clear | |
| Roseburg, Oregon | 29.87 | 758.7 | 30.47 | 773.9 | 35.5 | 1.9 | 100 | NW | 1 | 0.4 | ..... | 1c | 0 | Calm | ..... | 0.05 | 1.3 | Clear | |
| Sacramento, California | 30.13 | 765.3 | 30.21 | 767.3 | 53 | 11.7 | 86 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.24 | 742.7 | 29.82 | 757.4 | 43 | 6.1 | 75 | N | 12 | 5.4 | ..... | 10ck | cs | 0 | Calm | ..... | 0 | 0 | Cloudy |
| St. Marks, Florida | 29.78 | 756.4 | 29.80 | 756.9 | 69 | 20.6 | 100 | S | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 3.83 | 97.3 | Light rain | |
| St. Paul, Minnesota | 29.14 | 740.1 | 29.98 | 761.5 | 39 | 3.9 | 55 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.80 | 655.3 | 30.13 | 765.3 | 32 | 0.0 | 50 | Calm | 0 | 0 | ..... | 4k | 0 | W | ..... | 0.06 | 1.5 | Fair | |
| San Antonio, Texas | 28.96 | 735.6 | 29.52 | 749.8 | 65 | 18.3 | 44 | NW | 4 | 1.8 | ..... | 5cs | 0 | Calm | ..... | 0.30 | 7.6 | Fair | |
| San Diego, California | 29.94 | 760.5 | 30.01 | 762.2 | 51 | 10.6 | 93 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.27 | 743.4 | 29.95 | 760.7 | 38 | 3.3 | 91 | E | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0.17 | 4.3 | Foggy | |
| Sandy Hook, New Jersey | 29.83 | 757.7 | 29.86 | 758.4 | 50 | 10.0 | 72 | NW | 10 | 4.5 | ..... | 5c | 0 | NW | ..... | 0.07 | 1.8 | Clearing | |
| San Francisco, California | 30.18 | 766.6 | 30.25 | 768.3 | 50.7 | 10.4 | 86 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 23.16 | 588.2 | 29.70 | 754.4 | 31 | — 0.6 | 58 | NW | 12 | 5.4 | ..... | 5cs | 0 | SW | ..... | Inap. | Inap. | Cloudy | |
| Savannah, Georgia | 29.76 | 755.9 | 29.85 | 758.2 | 68 | 20.0 | 79 | S | 2 | 0.9 | ..... | 5k | 5s | SW | SW | 0.05 | 1.3 | Cloudy | |
| Shreveport, Louisiana | 29.40 | 746.7 | 29.61 | 752.1 | 59 | 15.0 | 94 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 4.64 | 117.9 | Cloudy | |
| Silver City, New Mexico | 24.22 | 615.2 | 30.54 | 775.7 | 36 | 2.2 | 28 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 29.90 | 759.4 | 29.93 | 760.2 | 66 | 18.9 | 84 | W | 8 | 3.6 | ..... | 10cs | 0 | W | ..... | Inap. | Inap. | Cloudy | |
| Springfield, Massachusetts | 29.68 | 753.9 | 29.81 | 757.2 | 45 | 7.2 | 76 | Calm | 0 | 0 | ..... | 5k | Sm'e | NW | ..... | 0.45 | 11.4 | Fair | |
| Stockton, Texas | 26.77 | 680.0 | 29.77 | 756.1 | 55 | 12.8 | 39 | NW | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.72 | 754.9 | 29.78 | 756.4 | 43 | 6.1 | 83 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 0.33 | 8.4 | Cloudy | |
| Toledo, Ohio | 29.22 | 742.2 | 29.90 | 759.4 | 45 | 7.2 | 76 | E | 8 | 3.6 | ..... | 0 | 2ks | ..... | Calm | 0.02 | 0.5 | Clear | |
| Tucson, Arizona | 27.54 | 699.5 | 30.09 | 764.3 | 51 | 10.6 | 33 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.99 | 761.7 | 30.50 | 774.5 | 39.0 | 3.9 | 73 | W | 22 | 9.8 | ..... | 0 | 0 | ..... | ..... | 0.20 | 5.1 | Clear | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 21 | — 6.1 | 85 | NW | ..... | ..... | 2 | ..... | 8s | ..... | NW | 0 | 0 | Cloudy | |
| Uvalde, Texas | 28.82 | 732.0 | 29.62 | 752.3 | 65 | 18.3 | 26 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.35 | 745.5 | 29.60 | 751.8 | 61 | 16.1 | 94 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | S | 0.90 | 22.9 | Fair | |
| Virginia City, Montana | 24.28 | 616.7 | 29.76 | 755.9 | 28 | — 2.2 | 66 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0.03 | 0.8 | Fair | |
| Visalia, California | 29.82 | 757.4 | 30.20 | 767.1 | 45.8 | 7.7 | 88 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 29.83 | 757.7 | 29.94 | 760.5 | 49 | 9.4 | 64 | N | 8 | 3.6 | ..... | 1c | 2s | W | W | 0.09 | 2.3 | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 52 | 11.1 | 47 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 29.82 | 757.4 | 29.90 | 759.4 | 66 | 18.9 | 79 | SW | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Winnemucca, Nevada | 25.81 | 655.6 | 30.17 | 766.3 | 32 | 0.0 | 79 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass | 29.73 | 755.1 | 29.77 | 756.1 | 41 | 5.0 | 91 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | NW | 0.10 | 2.5 | Cloudy | |
| Yankton, Dakota | 28.72 | 729.5 | 30.06 | 763.5 | 29 | — 1.7 | 66 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yuma, Arizona | 29.82 | 757.4 | 29.99 | 761.7 | 60 | 15.6 | 39 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 29.85 | 758.2 | 29.90 | 759.4 | 81 | 27.2 | 74 | SE | 4.8 | 2.1 | ..... | 4c | 0 | Calm | ..... | 0 | 0 | Fair | Chas. Hasselbrink |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.24 | 641.1 | ..... | ..... | 68.0 | 20.0 | 83 | Calm | ..... | ..... | 0 | ..... | 10ks | ..... | ..... | 0.75 | 19.1 | ..... | Thomas Herran. |
| Navassa, W. I | 29.90 | 759.4 | 29.98 | 761.5 | 81 | 27.2 | ..... | E | 17.2 | 7.7 | ..... | ..... | ..... | ..... | ..... | Inap | Inap. | Sprinkling | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.01 | 762.2 | 30.01 | 762.2 | 82 | 27.8 | 87 | E | ..... | ..... | 2 | ..... | 8ks | ..... | ..... | 0.350 | 8.89 | ½ clouded | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | 30.44 | 773.2 | 30.49 | 774.4 | 16.5 | — 8.6 | 92 | NE | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m., Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m., Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.489 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.39 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.17 | 766.3 | 51 | 10.6 | 50 | 10.0 | 93 | WSW | 6 | 2.7 | .... | ..... | 0 | ..... | ..... | 0.008 | 0.20 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 29.80 | 756.9 | 72 | 22.2 | 72 | 22.2 | 100 | SW | 15 | 6.7 | .... | ..... | 2 | ..... | ..... | 1.97 | 50.0 | ..... | ..... | Threatening | |
| Navy Yard, Portsmouth, N.H | 29.80 | 756.9 | 43 | 6.1 | 38 | 3.3 | 82 | SW | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.9 | 23. | ..... | ..... | Misty..... | |
| Naval Hospital, Yokohama, Japan.....* | 29.88‡ | 758.9‡ | ..... | ..... | 48 | 8.9 | 63 | NNE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0.40 | 10.2 | ..... | ..... | Clear..... | |
| Adams, Panama .....*.. | 29.95 | 760.7 | 80 | 26.7 | 79 | 26.1 | 95 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Alaska, N. 51° 04,′ W. 127° 53′ .... | 30.20‡ | 767.1‡ | ..... | ..... | 42 | 5.6 | 75 | SW | ..... | ..... | 4 | ..... | 2 | ..... | NE | 0.33 | 8.4 | Smooth | ..... | Raining..... | |
| Alliance, Naples, Italy..... | 29.61‡ | 752.1‡ | ..... | ..... | 67 | 19.4 | 69 | SSW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant..... | |
| Ashuelot, Hong-Kong, China. ...*. | 29.98‡ | 761.5‡ | ..... | ..... | 66 | 18.9 | 79 | ENE | ..... | .... | 4 | ..... | 10 | ..... | W | ..... | ..... | Smooth | ..... | Clear ..... | |
| Canonicus, New Orleans, La.....*. | 29.70 | 754.4 | 53 | 11.7 | 74 | 23.3 | 90 | S | ..... | ..... | 3 | ..... | 5 | ..... | S | ..... | ..... | ..... | ..... | Fair..... | |
| Colorado, New York, N. Y..... | 29.88 | 758.9 | 50 | 10.0 | 45 | 7.2 | 84 | WNW | 10 | 4.5 | ..... | ..... | 2 | ..... | NW | 0.09 | 2.3 | ..... | ..... | Hazy..... | |
| Constitution N. 32° 32′, W. 16° 14′..... | 30.34‡ | 770.6‡ | ..... | ..... | 62 | 16.7 | 72 | NNW | ..... | ..... | 2 | ..... | 5 | ..... | Calm | ..... | ..... | Smooth | ..... | Pleasant..... | |
| Despatch, Genoa, Italy..... | 29.66‡ | 753.4‡ | ..... | ..... | 63 | 17.2 | 78 | S | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Smooth | ..... | Fair ..... | |
| Essex, Maldonado, Uruguay.. | 29.87 | 758 7 | 69 | 20.6 | 67 | 19.4 | ..... | WNW | ..... | ..... | 4 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy ..... | |
| Franklin, Norfolk, Va.....*. | 30.00 | 762.0 | 69 | 20.6 | 62 | 16.7 | 83 | N&E | 7 | 3.1 | ..... | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy..... | |
| Gettysburg, Genoa, Italy .....*. | 30.32‡ | 770.1‡ | ..... | ..... | 64 | 17.8 | 78 | SSE | ..... | ..... | 2–3 | ..... | 5 | ..... | ..... | 0.13 | 3.3 | Smooth | S | Fair..... ..... | |
| Hartford, Buenos Ayres, S A.....*. | 29.90 | 759.4 | 70 | 21.1 | 68 | 20.0 | 100 | WNW | ..... | ..... | 4 | ..... | 10 | ..... | NW | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Michigan, Erie, Pa.....†. | 29.95‡ | 760.7‡ | ..... | ..... .. | 37 | 2.8 | 90 | SSW | ..... | ..... | 2 | ..... | 5 | ..... | W | ..... | ..... | ..... | ..... | Fair..... | |
| Monocacy, Shanghai, China.....*. | 30.24‡ | 768.1‡ | ..... | ..... | 48 | 8.9 | 63 | ESE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monongahela N. 32° 00′, E. 141° 45′.....*. | 29.92‡ | 760.0‡ | ..... | ..... .. | 58 | 14.4 | 76 | WNW | ..... | ..... | 3–4 | ..... | k | ..... | N | Very light | Very light | Mod'ate | W | D. clouds..... | |
| New Hampshire, Port Royal, S. C.....*. | 29.90 | 759.4 | 68 | 20.0 | 67 | 19.4 | 84 | SE | 1 | 0.4 | ..... | ..... | 8 | ..... | SE | 0.02 | 0.5 | ..... | ..... | Cloudy..... | |
| Onward, Callao, Peru.....†*. | 30.04 | 763.0 | ..... | ..... | 64 | 17.8 | 94 | Calm | ..... | ..... | 0 | ..... | 10 | ..... .. | ..... | ..... | ..... | Long | W | Foggy ..... | |
| Palos, Tientsin, China.....*. | 30.02 | 762.5 | 80 | 26.7 | 62 | 16.7 | 51 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 50 | 10.0 | 86 | N | ..... | ..... | 3 | ..... | 2 | ..... | S | ..... | ..... | ..... | ..... | Clear..... | |
| Pensacola. Iquique, Peru..... | 30.03‡ | 762.8‡ | ..... | ..... | 64 | 17.8 | 83 | SW | 3 | 1.3 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Plymouth. Portsmouth, N. H ..... | 29.86‡ | 758.4‡ | ..... | ..... | 40 | 4.4 | 91 | W | ..... | .... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rainy ..... | |
| Powhatan, Norfolk, Va..... | 29.87‡ | 758.7‡ | ..... | ..... | 61 | 16.1 | 71 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.3 | 8. | ..... | ..... | Cloudy..... | |
| Quinnebaug, Algier, Algeria..... | 29.86‡ | 758.4‡ | ..... | ..... | 61 | 16.1 | 55 | NW | ..... | ..... | 5 | ..... | 2 | ..... | NW | ..... | ..... | ..... | ..... | Fair ..... | |
| Ranger. Amoy, China.....*. | 30.07‡ | 763.8‡ | ..... | ..... | 67 | 19.4 | 74 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Richmond. Pt. de Galle, Ceylon .... | 29.81‡ | 757.2‡ | ..... | ..... | 85 | 29.4 | 87 | W | ..... | ..... | 1 | ..... | 2 | ..... | W | 0 | 0 | Ground | W | Clear ..... | |
| Rio Bravo, Brownsville, Texas..... | 29.59 | 751.6 | 72 | 22.2 | 70 | 21.1 | 100 | N | ..... | ..... | 1 | ..... | Fog | ..... | N | ..... | ..... | ..... | ..... | Foggy ..... | |
| Santee, Annapolis, Md... ..... | 29.92‡ | 760.0‡ | ..... | ..... | 48 | 8.9 | 70 | N | ..... | ..... | 4 | ..... | 2 | ..... | N | 0.04 | 1.0 | ..... | ..... | Clear..... | |
| Saratoga, N. 38° 11′, W. 32° 44′..... | 30.19‡ | 66.8‡ | ..... | ..... | 64 | 17.8 | 94 | W | ..... | ..... | 5 | ..... | 2 | ..... | SE | Blank | Blank | Mod'ate | S | D. clouds..... | |
| St. Louis, League Island, Pa ..... | 29.84 | 757.9 | 55 | 12.8 | 47 | 8.3 | 85 | NNW | 13 | 5.8 | ..... | ..... | 2 | ..... | W | 0.02 | 0.5 | ..... | ..... | Clear..... | |
| Supply, New York, N. Y..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Trenton Villefranche, France..*. | 29.62‡ | 752.3‡ | ..... | ..... | 52 | 11.1 | 86 | WNW | ..... | ..... | 1 | ..... | 10 | ..... | WSW | 0.03 | 0.8 | Mod'ate | S | Rainy..... | |
| Tuscarora. Acapulco, Mexico.....*. | 29.86‡ | 758.4‡ | ..... | ..... | 76 | 24.4 | 82 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | Calm | 0 | 0 | Smooth | ..... | Clear..... | |
| Vandalia Norfolk, Va... ..... .....†. | 29.89‡? | 759.2‡? | ..... | ..... | 64 | 17.8 | 78 | W | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Wabash, Boston, Mass..... ..... | 29.78‡ | 756.4‡ | ..... | ..... | 38 | 3.3 | 81 | NW | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | 0.05 | 1.3 | ..... | ..... | Hazy..... | |
| Wyoming, Beirut, Syria... .....*. | 29.95‡ | 760.7‡ | ..... | ..... | 70 | 21.1 | 100 | N | ..... | ..... | 1–2 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | SEA-SWELL. | | WEATHER. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | CHARACTER. | DIRECTION FROM— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | |
| S. S. City of Tokio, Capt. Maury N. 34° 37′, W. 176° 50′ | | 30.56‡ | 776.2‡ | 61 | 16.1 | | ESE | | | 5 | | 10? | | | 0 | Smooth | | Blue sky ?... | L. B. Walls. |
| S. S. Colima, N. 18° 35′, W. 97° 13′....† | | 29.99‡ | 761.7‡ | 78 | 25.6 | | W | | | 4 | | 8 | | WSW | 0 | Small | WSW | D. clouds.... | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota, Capt. H. G. Morse | | | | | | | | | | | | | | | | | | | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, Sydney, N. S. W. | | 30.46‡ | 773.4‡ | | | | S | | | 1 | | 0 | | | | | | Fine | R. C. Ghest, 1st Officer |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. The date of the S. S. City of Tokio is uncertain, and may be in error one day. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

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| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroi *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer | | | | | | | | | | | | | | | | | | | J. A. Thompson, 2d O |
| S. S. Gaelic, N. 44°15′, E. 171° 46′....* | | 29.93‡ | 760.2‡ | 45 | 7.2 | | S | | | 5 | | Fog | | | 0 | Swell | S | Foggy | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, N. 32° 44′, E. 134° 24′ | | 30.05‡ | 763.3‡ | 57 | 13 9 | 100 | NW | | | 3–4 | | 2 | | NW | | 1 | WNW | D. clouds.... | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 49° 00′, W. 14° 44′ | | 29.84‡ | 757.9‡ | 52.0 | 11.1 | 86 | SSW | | | 3 | | 8 | | | 2hrs | Mod'ate | NE | Cloudy | Capt. C. Undütsch. |
| S. S. Leipzig, N. 40° 33′, W. 66° 58′ | | 29.70‡ | 754.4‡ | 56.0 | 13.3 | ?? | Calm? | | | 1? | | 10 | | | 2 hours | Mod'ate | WSW | Misty | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, Capt. G. Meyer, Baltimore, Md | | 29.89‡ | 759.2‡ | | | | SW | | | 2 | | 5 | | SW | | | | Fair | G. Risius, 3rd Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

| NAMES OF VESSELS. | True course toward. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | L'w'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N 41° 26′, W 55° 07′ | | 29.83‡ | 757.7‡ | 54 | 12.2 | | ESE | | | 3 | | 9 | | E | Mod'ate | Mod'ate | | Cloudy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud-direction as toward instead of from; sea-swell in general terms, as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

## RED STAR LINE MARINE SERIES.

Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents.

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| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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## ALLAN LINE MARINE SERIES.

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| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | J. Powell, 4th Officer. |
| S. S. Peruvian | | | | | | | | | | | | | | | | | | | |
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Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## MARINE SERIES. (Miscellaneous.)

Furnished by the co-operation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
| Brigantine "George, of Halifax" | | | | | | | | | | | | | | | | | | | Willard N. Pratt. |
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Note.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively by the letters c, k, s, n, d, f, p, hz., fg. and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$.) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 17, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 30.17 | 766.3 | 64.2 | 17.9 | 76 | WNW | | | 2 | | 8 | | | 0 | 0 | Very cloudy | Kesxuche. |
| Algiers | | | 29.98 | 761.5 | 61.5 | 16.4 | 52 | WNW | | | 5 | | 0 | | | 0.098 | 2.5 | Clear | Tourillere. |
| La Calle | | | 29.96 | 761.0 | 59.7 | 15.4 | 73 | NW | | | 7 | | 5 | | | 0.051 | 1.3 | Cloudy | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Stax | | | 30.06 | 763.5 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 30.06 | 763.5 | 48.9 | 9.4 | 60 | NW | | | 6 | | 10 | | | 0 | 0 | Covered | Herbin. |
| Tebessa | | | 30.02 | 762.5 | 54.7 | 12.6 | 40 | W | | | 7 | | 5 | | | 0.106 | 2.7 | Cloudy | Watrin. |
| Geriville | | | 30.13 | 765.3 | 55.8 | 13.2 | 77 | N | | | 6 | | 8 | | | 0 | 0 | Very cloudy | Brugulaux. |
| Laghouat | | | 30.09 | 764.2 | 65.8 | 18.8 | 15 | NW | | | 3 | | 5 | | | 0 | 0 | Cloudy | Bertrand. |
| Biskra | | | 30.06 | 763.5 | 70.9 | 21.6 | 24 | WNW | | | 2 | | 2 | | | 0 | 0 | Fair | Chanvaux. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 28.74 | 730.0 | 29.28 | 743.6 | 55.2 | 12.9 | 91 | SE | | | 1 | | 10 | | | 0.669 | 17.0 | Raining | Prof. Ivan Stosir. |
| Cracow, I. R. Observatory | 28.61 | 726.7 | 29.34 | 745.1 | 70 9 | 21.6 | 41 | SSW | | | 3 | | 10 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 28.53 | 724.6 | 29.37 | 745.9 | 65.8 | 18.8 | 59 | S | | | 3 | | 10s | | | 0.089 | 2.25 | | Julius Mikolik. |
| Gratz | 28.04 | 712.1 | 29.25 | 743.0 | 54.0 | 12.2 | 90 | NW | | | 2 | | 10 | | | 0.146 | 3.7 | | Andreas Rospini. |
| Hermannstadt | 28.07 | 713.0 | 29.39 | 746.4 | 80.8 | 27 1 | 21 | SSE | | | 4 | | 5 | | | 0.061 | 1.55 | | Prof. A. Gottschling. |
| Kremsmünster | 28.03 | 712.0 | 29.37 | 746.1 | 45.3 | 7.4 | 69 | WNW | | | 3 | | 10 | | | 0 | 0 | | Prof. C. Wagner. |
| Lemberg | 28.26 | 717.8 | 29.19 | 741.4 | 70.7 | 21.5 | 59 | S | | | 1 | | 6 | | | 0 | 0 | | Dr. T. Stanecki. |
| Polo | 29.26 | 743.1 | 29.37 | 745.9 | 54.7 | 12.6 | 68 | W | | | 3 | | 10 | | | 0.675 | 14.6 | | I.R.Hydrographic Office |
| Szathmar | 28 94 | 735.1 | 29.38 | 746.2 | 73.9 | 23.3 | 51 | E | | | 2 | | 10 | | | 0 | 0 | | Julius Csics, S. J. |
| Szegedin | 28.98 | 736.P | 29.24 | 742.8 | 67.6 | 19.8 | 67 | S | | | 1 | | 10 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 29.27 | 743.4 | 29.37 | 746.0 | 55.4 | 13.0 | 95 | S | | | 1 | | 10 | | | 1.063 | 27.0 | Rainy | P. Busin. |
| Vienna | 28.60 | 726.3 | 29.30 | 744.3 | 46 6 | 8.1 | 81 | W | | | 5 | | 10 | | | 0.028 | 0.7 | | I. R. Central Met. Obs'y |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.40 | 746.9 | 29.61 | 752.0 | 45.5 | 7.5 | 78 | WNW | | | 1 | 6 | 4 | W? | NW | 0.008 | 0.20 | Light rain | Royal Observatory. |
| Furnes | 29.62 | 752.4 | 29.65 | 753.0 | 48.9 | 9.4 | 67 | NW | | | 2 | | 5 | | | 0.134 | 3.4 | | M. E. de Cae. |
| Maeseyck | 29.48 | 748.7 | 29.60 | 751.9 | 45.7 | 7.6 | 79 | N | | | 2 | | 10 | | | 0.016 | 0.4 | | M. Pierrot. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

**Entered at the Post Office at Washington, D. C., as Second-Class Matter.**

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected or instrumental error and temperature. Inches. | Barometer. Corrected or instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.64 | 752.8 | 29.74 | 755.4 | 39.6 | 4.2 | ..... | NE | 12 | 5.4 | ..... | ..... | 7 | ..... | ..... | 0.070 | 1.78 | D. clouds..... | W. Boswell. |
| Ardrossan | 29.71 | 754.6 | 29.73 | 755.1 | 46 | 7.8 | ..... | WSW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.77 | 756.1 | 43.5 | 6.4 | ..... | N | 9 | 4.0 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.68 | 753.9 | 46.4 | 8.0 | ..... | NW | 15 | 6.7 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.68 | 753.9 | 46.9 | 8.3 | ..... | NE | 6 | 2.7 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Thomas Mackereth. |
| Bradford, Yorkshire | 29.29 | 744.0 | 29.68 | 753.9 | 42.1 | 5.6 | ..... | NE | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0.01 | 0.3 | D. clouds..... | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.97 | 761.2 | 30.00 | 762.0 | 82.5 | 28.1 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.64 | 752.8 | 45.5 | 7.6 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | H. Todd. [O. |
| Cardington | ..... | ..... | 29.63 | 752.6 | 48.4 | 9.1 | ..... | NW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E | 29.52 | 749.8 | 29.65 | 753.1 | 45.5 | 7.5 | ..... | Calm | ..... | ..... | 0 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.22 | 716.8 | 29.70 | 754.4 | 44.0 | 6.7 | ..... | N | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 29.72 | 754.9 | 29.76 | 755.9 | 46 | 7.8 | ..... | N | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.62 | 752.3 | 29.64 | 752.8 | 43 | 6.1 | ..... | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded... | J. Costello. |
| Falmouth, Observatory | 29.53 | 750.0 | 29.76 | 755.9 | 48.0 | 8.9 | ..... | NNW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| Fort Napier, (Natal) | 27.60 | 701.0 | 29.91 | 759.7 | 76.0 | 24.4 | ..... | SE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.68 | 753.9 | 29.91 | 759.7 | 87 | 30.6 | ..... | E | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's college | ..... | ..... | ..... | ..... | 46 | 7.8 | ..... | NNW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Snowing..... | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 30.10 | 764.5 | 30.15 | 765.8 | 64.6 | 18.1 | ..... | W | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.63 | 750.9 | 29.73 | 755.1 | 43.9 | 6.6 | ..... | NNW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. [O. |
| Great Yarmouth | 29.59 | 751.6 | 29.60 | 751.8 | 45 | 7.2 | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Misty..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.48 | 748.8 | 29.66 | 753.4 | 46.3 | 7.9 | ..... | NNE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | The staff, for G.B. Airy |
| Guernsey | 29.50 | 749.3 | 29.72 | 754.9 | 50 | 10.0 | ..... | WNW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S.E.Hoskins, F.R.S |
| Helston | 29.81 | 757.2 | 29.94 | 760.5 | 51 | 10.6 | ..... | NW | ..... | ..... | 2 | ..... | 4k | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 29.70 | 754.4 | 29.74 | 755.4 | 45 | 7.2 | ..... | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 29.46 | 748.3 | 29.76 | 755.9 | 48.0 | 8.9 | ..... | WNW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | J. Fisher. |
| Kew, Observatory | 29.62 | 752.3 | 29.66 | 753.4 | 47.3 | 8.5 | ..... | W | 8 | 3.6 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | The Meteorological Of. |
| Leicester, Museum | 29.38 | 746.2 | 29.64 | 752.8 | 45.2 | 7.3 | ..... | N | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.67 | 753.6 | 29.74 | 755.4 | 63 | 17.2 | ..... | NW | ..... | ..... | 3 | ..... | 3k | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.68 | 753.9 | 29.77 | 756.1 | 43 | 6.1 | ..... | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 29.96 | 761.0 | 81.2 | 27.8 | ..... | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.46 | 748.3 | 29.66 | 753.4 | 48.0 | 8.9 | ..... | NNW | ..... | ..... | 2 | ..... | 7k;ck | ..... | NW | 0 | 0 | D. clouds..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.13 | 739.9 | 29.65 | 753.1 | 44.7 | 7.1 | ..... | NW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Misty..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.67 | 753.6 | 44 | 6.7 | ..... | WNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | H. E. Bellamy. |
| Plymouth | 29.65 | 753.1 | 29.73 | 755.1 | 52.8 | 11.6 | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | John Merrifield. |
| Roche's Point | 29.73 | 755.1 | 29.81 | 757.2 | 48 | 8.9 | ..... | SSE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded... | Wm. Kennedy. |
| Saint Ann's Head | 29.68 | 753.3 | 29.74 | 755.4 | 45 | 7.2 | ..... | NW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 35.1 | 1.7 | ..... | NNE | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Rev C.Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.66 | 753.4 | 29.72 | 754.9 | 76.0 | 24.4 | ..... | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | Blank | Blank | D. clouds.... | W. H.Lyne. |
| Sheffield | 29.41 | 747.0 | 29.69 | 754.1 | 44.0 | 6.7 | ..... | N | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.01 | 0.3 | Overcast..... | W. F. Cooper. |
| Silloth Rectory | 29.68 | 753.9 | 29.70 | 754.4 | 50.2 | 10.1 | 53 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.28 | 743.7 | 29.69 | 754.1 | 45.1 | 7.3 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.44 | 747.8 | 29.66 | 753.4 | 49.5 | 9.7 | ..... | NW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Showery..... | C. H. Griffith, F. M. S. |
| Thurso | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John Trotter. |
| Truro, Royal Institution | 29.72 | 754.9 | 29.77 | 756.1 | 52 | 11.1 | ..... | N | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | 29.76 | 755.9 | 29.79 | 756.7 | 49.9 | 9.9 | ..... | SW | 11 | 4.9 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | The Meteorological Of. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.78 | 756.4 | 29.81 | 757.2 | 62.2 | 16.8 | 72 | NW | 10 | 4.5 | ..... | 10 | 10 | ..... | ..... | 0.556 | 14.12 | Raining..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania). | ..... | ..... | 30.08 | 764.0 | 72. | 22.2 | 84 | NW | .. | ..... | 1 | ..... | 1k | ..... | ..... | 0 | 0 | Fine..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.77 | 756.1 | 42.2 | 5.7 | ..... | E | ..... | ..... | 1 | ..... | 7k | ..... | ..... | 0.04 | 1.0 | Showery..... | Andrew Gibb. |
| Mauritius, Observatory | 29.88 | 757.9 | 30.07 | 763.8 | 78.0 | 25.6 | 65 | E | 23.5 | 10.5 | ..... | 1 | 4 | ..... | ESE | 0.35 | 8.9 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 30.19 | 766.8 | 30.28 | 769.1 | 62.0 | 16.7 | 64 | NE | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very fine..... | R. L. J. Ellery. |
| MonachLt-house, (Hebrides) | ..... | ..... | 29.84 | 757.9 | 42 | 5.6 | ..... | N | ..... | ..... | 4 | 3 | 0 | ..... | ..... | 0.1 | 2.5 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.76 | 755.9 | 38 | 3.3 | ..... | N | ..... | ..... | 2 | 0 | 4 | NE | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

## British Marine Series.

| Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 42', E. 29° 25' | ..... | ..... | D. clouds..... | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | |
| S. S. Amanda. | ..... | ..... | ..... | Capt. W. Scott. |
| Barque Belle-Isle, N. 49° 42', W. 5° 52' | ..... | ..... | D. clouds..... | Capt. B. Boyes. |
| Ship British Commodore | ..... | ..... | ..... | Capt. A. J. Brown. |
| ——— City of Agra, | ..... | ..... | ..... | Capt. J. W. Thorne. |
| Barque Commewyne | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Fedalina | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Mertole, N. 36° 56', W. 9° 08' | ..... | ..... | D. clouds..... | Capt. H. L. Fox. |
| S. S. Nizam | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Strathleven | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Wyberton | ..... | ..... | ..... | Capt. C. W. Pearson. |
| ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
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| Barometer. Corrected or instrumental error and temperature. Inches. | Barometer. Corrected or instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 42', E. 29° 25' ..... | ..... | 29.66‡ | 753.4‡ | 68.8 | 20.4 | ..... | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| S. S. Amanda. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| Barque Belle-Isle, N. 49° 42', W. 5° 52' | ..... | ..... | 29.76‡ | 756.4‡ | 53 | 11.7 | ..... | Calm | ..... | ..... | 0 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. B. Boyes. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | | Capt. A. J. Brown. |
| ——— City of Agra, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | | Capt. J. W. Thorne. |
| Barque Commewyne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | | Capt. Thos. Young. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | | Capt. A. Buchan. |
| Barque Mertole, N. 36° 56', W. 9° 08' | ..... | ..... | 29.22‡ | 767.6‡ | 59 | 15.0 | ..... | WSW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. H. L. Fox. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | | Capt. E. W. Turner. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | | Capt. Barlow. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | | Capt. C. W. Pearson. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | | |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instru-m'tal error and temperature. Inches. | BAROMETER. Corrected for instru-m'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity Miles per hour. | WIND. Velocity Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.24 | 666.5 | 29.96 | 761.0 | 68.4 | 20.2 | 91 | SE | ..... | ..... | 1 | 4cs;p | ..... | ..... | ..... | Inap. | Inap. | ..... | Federico Maison |

NOTE.—For St. Jose the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches for an altitude of 1,145 meters, or 3,756.6 feet; the distinction between the upper and lower clouds is not always made; the rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.54 | 750.4 | 29.59 | 751.6 | 39.9 | 4.4 | 80 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 29.59 | 751.6 | 29.61 | 752.1 | 41.2 | 5.1 | 86 | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.20 | 741.8 | 29.25 | 742.9 | 31.5 | — 0.3 | 85 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 29.82 | 757.5 | 29.86 | 758.4 | 37.0 | 2.8 | 52 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.46 | 748.0 | 29.62 | 752.3 | 37.0 | 2.8 | 89 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.15 | 740.5 | 29.71 | 754.5 | 49.6 | 9.8 | 71 | W | ..... | ..... | 1 | ..... | 10 | ..... | N | 0.20 | 5. | Covered | Collignon, Director. |
| Amiens, Normal School | 29.60 | 751.8 | 29.71 | 754.6 | 50.0 | 10.0 | 74 | WNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bonvallet, Director |
| Avignon, Normal School | 29.07 | 753.5 | 29.74 | 755.5 | 57.2 | 14 | 48 | N | ..... | ..... | 2 | ..... | ..... | ..... | N | 0 | 0 | ..... | M. Giraud, Director |
| Bar-sur-Seine | 29.10 | 739.2 | 29.66 | 753.3 | 47.7 | 8.7 | 47 | NNW | ..... | ..... | 1 | ..... | 8kn | ..... | NW | 0.063 | 1.6 | Very cloudy | G. Saillard, Director. |
| Beauvais, Normal School | 29.43 | 747.5 | 29.70 | 754.4 | 42.8 | 6.0 | 75 | NNE | ..... | ..... | 1 | ..... | 8 | ..... | NW | 0.20 | 5. | Very cloudy | Frere Eugene Marie, Dr |
| Besançon, Normal School | 28.78 | 731.0 | 29.08 | 753.9 | 43.2 | 6.2 | 84 | W | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.31 | 8. | Covered | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.84 | 732.4 | 29.74 | 755.4 | 45.5 | 7.5 | 69 | N | ..... | ..... | 1 | ..... | 10n | W | W | 0 | 0 | Covered | M. Marlot, Director. |
| Bourges, Normal School | 29.02 | 737.2 | 29.57 | 751.0 | 54.5 | 12.5 | 85 | NW | ..... | ..... | 1 | ..... | 10ck | SE | NW | 0.059 | 1.5 | Raining | A. Waquet, Director |
| Brest, Naval Observatory | 29.46 | 748.2 | 29.72 | 755.0 | 55.8 | 13.2 | 68 | W | ..... | ..... | 3 | ..... | 7 | ..... | W | 0 | 0 | ..... | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.38 | 746.3 | 29.80 | 756.8 | 55.4 | 13 | 58 | W | ..... | ..... | 3 | ..... | 8 | W | W | 0 | 0 | ¾ covered | September, Director. |
| Caen, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Lair, Director. |
| Chartres, Normal School | 29.18 | 741.1 | 29.76 | 755.8 | 43.2 | 6.2 | 95 | W | ..... | ..... | 1 | ..... | 10 | ..... | N | 0.28 | 7. | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.33 | 745.0 | 29.65 | 753.2 | 47.8 | 8.8 | 57 | NW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.33 | 719.5 | 29.07 | 753.7 | 51.8 | 11.0 | 63 | NW | ..... | ..... | 1 | ..... | 10 | ..... | W | 0.012 | 0.3 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.77 | 730.8 | 29.71 | 754.7 | 45.5 | 7.5 | 66 | W | ..... | ..... | 1 | ..... | 5kn | ..... | W | 0.08 | 2. | Cloudy | Dr. Coulet, Director |
| Commune de Gréasque* | 28.52 | 724.5 | 29.67 | 753.5 | 45.1 | 7.3 | 72 | NW | ..... | ..... | 0 | ..... | 8 | ..... | NW | 0.31 | 8. | ¾ covered | M. Kina, Director. |
| Grenoble, Normal School | 28.91 | 734.2 | 29.69 | 754.2 | 39.2 | 4.0 | 87 | ENE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.43 | 11. | Raining | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.55 | 750.6 | 29.76 | 756.0 | 64.2 | 17.9 | 63 | NW | ..... | ..... | 1 | ..... | 8 | ..... | NW | 0 | 0 | Very cloudy | Mouillot, Director |
| Le Mans, Normal School | 29.34 | 745.3 | 29.65 | 753.2 | 48.7 | 9.3 | 58 | SW | ..... | ..... | 1 | ..... | 5 | ..... | SSW | 0.207 | 5.25 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.78 | 731.0 | 29.71 | 754.5 | 44.8 | 7.1 | 64 | SW | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.150 | 3.80 | Covered | Baudry, Director. |
| Lorient, Naval Observatory | 29.67 | 753.7 | 29.78 | 756.3 | 50.7 | 10.4 | 80 | S | ..... | ..... | 2 | ..... | ..... | ..... | NE | 0.008 | 0.2 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mirecourt, Normal School | 28.62 | 724.4 | 29.54 | 750.4 | 47.7 | 8.7 | 65 | W | ..... | ..... | 3 | ..... | 5 | ..... | NW | 0 | 0 | Cloudy | M. Barbier, Director. |
| Nismes, Normal School | 29.50 | 749.2 | 29.70 | 754.3 | 58.3 | 14.6 | 44 | W | ..... | ..... | 2 | ..... | 2 | ..... | W | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 28.62 | 726.9 | 29.09 | 754.0 | 60.4 | 10.2 | 48 | N | ..... | ..... | 3 | ..... | 10 | S | N | 0.004 | 0.1 | Light rain | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.77 | 629.2 | ..... | ..... | 28.2 | —2.1 | 100 | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.173 | 4.4 | Snow & fog. | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.73 | 755.1 | 29.76 | 755.9 | 54.0 | 12.2 | 78 | W | ..... | ..... | 1 | ..... | 10 | W | W | 0.08 | 2. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.60 | 751.7 | 29.68 | 753.9 | 48.7 | 9.3 | 62 | W | ..... | ..... | 1 | ..... | 5 | ..... | W | 0.157 | 4.0 | Cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.70 | 754.6 | 29.74 | 755.3 | 52.0 | 11.1 | 60 | NW | ..... | ..... | 2 | ..... | 1 | ..... | NNW | 0 | 0 | Clear. | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.50 | 749.4 | 29.67 | 753.6 | 47.1 | 8.4 | 67 | WNW | ..... | ..... | 1 | ..... | ..... | ..... | WNW | 0.157 | 4.0 | Rain & hail. | E. Renou, Director. |
| Tarbes, Normal School | 28.76 | 730.5 | 29.84 | 758.0 | 48.2 | 9 | 61 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.28 | 7. | Raining | T. Huguet, Director. |
| Toulouse, Observatory | 29.10 | 739.1 | 29.82 | 757.5 | 47.5 | 8.6 | 83 | WSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.535 | 13.6 | Raining | M. Mercadier Julier. |
| Versailles Observatory | 29.18 | 741.1 | 29.67 | 753.6 | 44.6 | 7.0 | 69 | NW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.105 | 2.66 | ..... | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.87 | 758.8 | 29.90 | 759.5 | 79.2 | 26.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.08 | 2. | ..... | L'Abbé Marchal. |
| Lyons Obs'y, (Park Station) | 29.09 | 738.8 | 29.70 | 754.4 | 47.5 | 8.6 | 55 | NE | ..... | ..... | 1 | ..... | 0 | ..... | NNW | 0.043 | 1.1 | Covered | Mr. Jays. |
| Mont-Louis | 24.55 | 623.6 | 29.87 | 758.6 | 34.7 | 1.5 | 70 | WSW | 18.6 | 8.3 | ..... | ..... | 10 | ..... | ..... | 0.031 | 0.8 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.42 | 747.2 | 60.4 | 15.8 | 53 | SE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0.382 | 9.7 | Rainy | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.39 | 746.5 | ..... | ..... | 44.6 | 7.0 | 65 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.024 | 0.6 | ..... | Marié Davy, Director. |
| Perpignan | 29.65 | 753.0 | 29.75 | 755.7 | 54.7 | 12.6 | 45 | NE | 18.6 | 8.3 | ..... | ..... | 6 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.13 | 562.2 | ..... | ..... | 22.6 | — 5.2 | ..... | NW | ..... | ..... | 8-10 | ..... | 10 | ..... | ..... | 0.193 | 4.89 | Snowy | Gen'l de Nansouty. |
| Tours | ..... | ..... | ..... | ..... | 50.7 | 10.4 | ..... | NW | ..... | ..... | 3 | ..... | 5 | ..... | SW | 0.047 | 1.2 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.01 | 762.3 | 30.04 | 763.0 | 51.8 | 11.0 | 87 | ESE | 20.8 | 9.3 | ..... | ck | 7k | ..... | ..... | 0 | 0 | Cloudy | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand, Nice and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a.m. of the following day; the weather in general terms as published: at Saint Maur, the observations have been taken at 1:00 instead of 6:53 p.m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Gréasque, 322 m, or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit, 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer, corrected for instrum'tal error and temperature. Inches. | Barometer, corrected for instrum'tal error and temperature. Millimeters. | Barometer, reduced to sea-level. Inches. | Barometer, reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–1 | Clouds. Amount. Upper. 0–10 | Clouds. Amount. Lower. 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.61 | 726.2 | 29.42 | 747.2 | 45.5 | 7.5 | 88 | NW | ..... | ..... | 4 | ..... | 10 | W | ..... | 0.098 | 2.5 | Raining | Prof. Dr. Hoh. |
| Berlin | 29.33 | 744.9 | 29.50 | 749.3 | 39.0 | 3.9 | 90 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.228 | 5.8 | Raining | Prof. Arndt. |
| Breslau | 28.78 | 731.0 | 29.30 | 744.2 | 57.9 | 14.4 | 81 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | SSW | 0.197 | 4.99 | ..... | Royal University Obs'y |
| Carlsruhe | 29.11 | 739.3 | 29.53 | 750.1 | 45.3 | 7.4 | 90 | N | ..... | ..... | 1 | ..... | 10 | NE | ..... | 1.220 | 31.0 | Raining | Albert Senz. |
| Cassel | 28.91 | 734.3 | 29.51 | 749.5 | 45.7 | 7.6 | 88 | NNE | ..... | ..... | 2 | ..... | 10 | SW | ..... | 0.160 | 4.08 | Raining | Dr. H. Möhl. |
| Crefeld | 29.40 | 746.7 | 29.56 | 750.7 | 46.2 | 7.9 | 74 | N | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.08 | 2. | ..... | Director Lose. |
| Emden | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. Prestel. |
| Frankfort on the Main | 29.17 | 741.0 | 29.54 | 750.3 | 46.0 | 7.8 | ..... | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.354 | 9.0 | ..... | Physical Society. |
| Freienwalde on the Oder | 29.43 | 747.5 | 29.47 | 748.5 | 39.0 | 3.9 | 98 | N | ..... | ..... | 5 | ..... | 10ks | ..... | ..... | 0.047 | 1.2 | ..... | Assmann., M. D. |
| Friedrichshafen | 28.10 | 713.8 | 29.54 | 750.4 | 43.2 | 6.2 | 85 | SW | ..... | ..... | 6 | ..... | 10 | SW | ..... | 0.657 | 16.7 | Raining | M. Wilhelm. |
| Hamburg | 29.50 | 749.3 | 29.57 | 751.1 | 42.3 | 5.7 | 86 | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Foggy | Captain F. Hegeman. |
| Kiel | 29.59 | 751.5 | 29.60 | 751.9 | 40.6 | 4.8 | 80 | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.057 | 1.44 | ..... | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.41 | 747.1 | 29.50 | 749.2 | 42.8 | 6.0 | 91 | NE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.154 | 3.9 | ..... | Prof. E Luther |
| Köslin | ..... | ..... | 29.49 | 749.0 | 38.1 | 3.4 | ..... | N | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | H. Müller. |
| Leipsic, Observatory | 29.05 | 737.9 | 29.48 | 748.8 | 37.4 | 3.0 | 93 | N | ..... | ..... | 2 | ..... | 10 | NNW | ..... | ..... | ..... | Raining | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.60 | 751.9 | 29.65 | 753.1 | 42.1 | 5.6 | 77 | SW | ..... | ..... | 1 | ..... | 10cs;8 | ..... | ..... | ..... | ..... | ..... | Skalweit. |
| Neufahrwasser | 29.54 | 750.4 | 29.56 | 750.8 | 36.7 | 2.6 | 85 | NNE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.165 | 4.2 | Raining | A. Lothes. |
| Posen | 29.10 | 739.1 | 29.39 | 746.4 | 46.2 | 7.9 | 90 | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Dr. Magener. |
| Strassburg (in Alsace) | 29.02 | 737.1 | 29.57 | 751.1 | 48.0 | 8.9 | 86 | WNW | ..... | ..... | 4 | ..... | 10 | W | ..... | 0.576 | 14.62 | Raining | Imp. University Observatory. |
| Stuttgart | 28.56 | 725.5 | 29.51 | 749.6 | 41.7 | 5.4 | 86 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 1.406 | 35.7 | Raining | Prof. Schoder. |
| Treves (Trier) | 29.02 | 737.0 | 29.53 | 750.1 | 49.3 | 9.6 | 64 | W | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.018 | 0.45 | ..... | Prof. Flesch. |
| Weissenburg (Bavaria) | 27.91 | 708.9 | 29.43 | 747.4 | 40.3 | 4.6 | 92 | NNE | 9 | 4 | ..... | ..... | 10 | ..... | NW | 0.232 | 5.9 | Foggy | Fr. Van Bebber |
| Wustrow, Naval School | 29.55 | 750.5 | 29.57 | 751.1 | 37.8 | 3.2 | 85 | NE | ..... | ..... | 2 | ..... | 10s | ..... | ..... | 0 | 0 | ..... | L. Schütz, Dir. |
| GERMAN NAVAL SERIES. | | | | | | | | | | | | | | | | | | | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,276.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.33 | 745.0 | 29.71 | 754.6 | 75.9 | 24.4 | ..... | SW | ..... | ..... | 5.0 | ..... | ..... | ..... | ..... | ..... | ..... | ⅛ Clear | Dr. J. F. J. Schmidt. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.73 | 755.0 | 29.78 | 756.3 | 85.9 | 29.9 | 46 | W | 17 | 7.6 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | D. clouds | |
| Peesa | 29.26 | 743.1 | 29.71 | 754.7 | 99.3 | 37.4 | 7 | WSW | 7 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Bombay | 29.73 | 755.2 | 29.77 | 756.2 | 84.1 | 28.9 | 79 | W | 11 | 4.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Poona | 27.80 | 706.2 | 29.74 | 755.5 | 94.1 | 34.5 | 16 | NW | ..... | ..... | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Lahore | 28.88 | 733.6 | 29.60 | 751.8 | 97.2 | 36.2 | 14 | W | 2.4 | 1.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Belgaum | 27.26 | 692.3 | 29.75 | 755.7 | 83.8 | 28.8 | 69 | W | 25 | 11.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Roorkee | 28.72 | 729.4 | 29.58 | 751.4 | 94.6 | 34.8 | 8 | Calm | ..... | ..... | ..... | ..... | 1 | E | ..... | 0 | 0 | D. clouds | |
| Agra | 29.10 | 739.2 | 29.64 | 752.9 | 99.6 | 37.6 | 13 | W | ..... | ..... | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Nagpur | 28.68 | 728.4 | 29.69 | 754.1 | 92.7 | 33.7 | 12 | N | 5.6 | 2.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Lucknow | 29.25 | 743.0 | 29.62 | 752.3 | 90.2 | 32.3 | 33 | WNW | 3.8 | 1.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Allahabad | 29.35 | 745.4 | 29.65 | 753.0 | 95.7 | 35.4 | 21 | NW | 4.4 | 2.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Patna | 29.46 | 748.2 | 29.63 | 752.7 | 95.6 | 35.3 | 14 | WNW | 1.6 | 0.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Hazaribagh | 27.70 | 703.6 | 29.66 | 753.4 | 88.8 | 31.6 | 26 | W | 10.0 | 4.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Cuttack | 29.60 | 751.7 | 29.68 | 753.8 | 90.1 | 32.3 | 57 | S | 4 | 1.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.64 | 753.0 | 29.67 | 753.5 | 90.0 | 32.2 | 60 | S | 8.0 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Goalpara | 29.25 | 743.0 | 29.63 | 752.6 | 92.9 | 33.8 | 13 | W | 1.6 | 0.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Chittagong | 29.66 | 753.4 | 29.75 | 755.7 | 85.1 | 29.5 | 79 | Calm | 8.5 | 3.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| Sibsagar | 29.35 | 745.4 | 29.68 | 753.9 | 80.1 | 26.7 | 59 | NE | 1.6 | 0.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Misty | |
| Jubbulpore | 28.36 | 720.3 | 29.68 | 753.9 | 94.7 | 34.8 | 13 | Calm | 2.7 | 1.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,387 ft., or 411.8 m.. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 28.93 | 734.9 | 29.34 | 745.3 | 50.9 | 10.5 | 94 | SW | 3.1 | 1.4 | ..... | ..... | 10 | ..... | ..... | 1.276 | 32.4 | ..... | Prof. Giovanni Clodig. |
| Milan | 28.84 | 732.6 | 29.36 | 745.6 | 51.6 | 10.9 | 48 | NNW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.22 | 742.2 | 29.33 | 745.0 | 55.4 | 13.0 | 79 | W | 12.5 | 5.6 | ..... | ..... | 10 | W | ..... | 0.224 | 5.7 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.48 | 723.3 | 29.38 | 746.3 | 54.3 | 12.4 | 63 | S | 3.8 | 1.7 | ..... | ..... | 8 | ..... | ..... | 0.169 | 4.3 | ..... | Prof. P. F. Denza. |
| Genoa | 29.22 | 742.1 | 29.41 | 746.9 | 55.0 | 12.8 | 58 | NW | 3.1 | 1.4 | ..... | ..... | 10 | SW | ..... | 0.315 | 8.0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.50 | 698.4 | 29.41 | 746.9 | 52.3 | 11.3 | 29 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.34 | 745.1 | 29.39 | 746.4 | 59.7 | 15.4 | 47 | SW | 18.6 | 8.3 | ..... | ..... | 10 | W | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.18 | 741.2 | 29.44 | 747.7 | 54.9 | 12.7 | 58 | S | ..... | ..... | 8 | ..... | 10 | WSW | ..... | 0.248 | 6.3 | ..... | Cav. F. Meucci |
| Leghorn | 29.33 | 744.9 | 29.41 | 747.1 | 56.8 | 13.8 | 59 | W | ..... | ..... | 8 | ..... | 4 | W | ..... | 0.039 | 1.0 | ..... | Prof. P. Monte. |
| Rome | 29.35 | 745.5 | 29.52 | 749.9 | 59.4 | 15.2 | 58 | W | 18.6 | 8.3 | ..... | ..... | 8 | ..... | ..... | 0.591 | 15.0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.28 | 743.6 | 29.53 | 750.0 | 62.6 | 17.0 | 54 | NNW | 19.9 | 8.9 | ..... | ..... | 9 | W | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.84 | 732.5 | 29.72 | 754.9 | 58.6 | 14.8 | 74 | NW | 4.9 | 2.2 | ..... | ..... | 9 | ..... | ..... | 0.398 | 10.1 | ..... | Prof. D. Conti. |
| Cagliari | 29.55 | 750.6 | 29.74 | 755.5 | 54.1 | 12.3 | 60 | NW | ..... | ..... | 4 | ..... | 8 | NW | ..... | 0.232 | 5.9 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.52 | 749.7 | 29.77 | 756.1 | 60.1 | 15.6 | 44 | WSW | 10.5 | 4.7 | ..... | ..... | 9 | WSW | ..... | 0.016 | 0.4 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.73 | 755.1 | 29.80 | 756.9 | 63.9 | 17.7 | 32 | WSW | 19.9 | 8.9 | ..... | ..... | 3 | WSW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.10 | 739.0 | 29.65 | 753.1 | 55.4 | 13.0 | 70 | N | 13.7 | 6.1 | ..... | ..... | 9 | ..... | ..... | 0.291 | 7.4 | ..... | Prof. F. Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.20 | 767.1 | 30.22 | 767.6 | 46.8 | 8.2 | 79 | N | 5.1 | 2.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.99 | 761.7 | 30.20 | 767.1 | 48.5 | 9.2 | 82 | ..... | 0.4 | 0.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 30.17 | 766.3 | 30.23 | 767.8 | 51.9 | 11.1 | 79 | S | 6.8 | 3.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.07 | 636.9 | 30.26 | 768.5 | 43.7 | 6.5 | 32 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | Prof. L. Perez. |
| Leon | 24.42 | 620.4 | 30.11 | 764.9 | 58.5 | 14.7 | 65 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.11 | 587.0 | 30.19 | 766.9 | 49.6 | 9.8 | 40 | N | 5.6 | 2.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Light haze | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 58.8 | 14.9 | 24 | NNW | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. V. de Leon, M. E. |
| Tlacotalpam | 29.95 | 760.8 | 29.97 | 761.1 | 76.6 | 24.8 | 79 | N | ..... | ..... | 5 | 0 | 6 | ..... | N | 0 | 0 | Cloudy | M. M. Chazaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Light haze | J. Castrillon. |
| Puebla, (Catholic Institute) | 23.38 | 593.8 | 30.14 | 765.6 | 46.4 | 8.0 | 66 | N | 0.2 | 0.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.36 | 720.2 | 30.02 | 762.5 | 72.1 | 22.3 | 43 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Fine | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guera |

NOTE.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.62 | 752.4 | 29.62 | 752.4 | 48.6 | 9.2 | ..... | W | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.063 | 1.6 | ..... | |
| Groningen | 29.53 | 750.0 | 29.58 | 751.4 | 46.4 | 8.0 | ..... | NNW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.122 | 3.1 | ..... | |
| Helder | 29.58 | 751.4 | 29.58 | 751.4 | 45.0 | 7.2 | ..... | SW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.028 | 0.7 | ..... | |
| Hellevoetsluis | 29.59 | 751.6 | 29.59 | 751.6 | 48.4 | 9.1 | 61 | WNW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.56 | 750.8 | 29.61 | 752.0 | 52.7 | 11.5 | 53 | WNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | H. v. d. Brink |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.64 | 752.9 | 29.70 | 754.3 | 43.5 | 6.4 | 45 | W | 6.5 | 2.9 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.69 | 754.2 | 29 73 | 755.2 | 42.8 | 6.0 | 63 | E | 4 | 2 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.55 | 750.5 | 29.70 | 754.3 | 43.2 | 6.2 | 49 | ESE | 0 | 0 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.82 | 757.5 | 29.87 | 758.6 | 33.4 | 0.8 | 65 | E | 7 | 3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.92 | 760.0 | 30.11 | 764.9 | 62.1 | 16.7 | 86 | W | 8.1 | 3.6 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.12 | 739.6 | 30.15 | 765.9 | 54.5 | 12.5 | 59 | WNW | 9.4 | 4.2 | ..... | ..... | 10 | ..... | WNW | 0.067 | 1.7 | ..... | Dr. A.M. R. dos Santo |
| Funchal, (Madeira) | 30.21 | 767.4 | 30.30 | 769.6 | 62.6 | 17.0 | 43 | SW | 8.1 | 3.6 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha |
| Lisbon, Observatory | 29.81 | 757.2 | 30.17 | 766.4 | 55.2 | 12.9 | 77 | WSW | 18.6 | 8.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.09 | 764.2 | 30.16 | 766.0 | 66.6 | 19.2 | 72 | WSW | 16.1 | 7.2 | ..... | ..... | 4 | ..... | ..... | 0.035 | 0.9 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd' |
| Duque da Terceira, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| San Jose de Bissao, Senegambia | ..... | ..... | 30.08 | 764.0 | 73.4 | 23 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | ..... | Blue sky | C.C.da Fonseca Ferreira, Comd |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd' |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| St. Thomas, Gulf of Guinea | ..... | ..... | 29.87 | 758.6 | 82.4 | 28.0 | ..... | SSW | ..... | ..... | 1 | ..... | 10 | ..... | SE | 1 | SE | Overcast | A.J.de Mattos, Com'd' |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd' |
| Rio Lima, Capt. S. C. da Silva Costa. San Jose de Bissao, Senegambia | ..... | ..... | 29.87 | 758.8 | 84.9 | 29.4 | ..... | ESE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | ..... | Blue sky | A. Ferreira, 2d Lt |
| Sá da Bandeira | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Macao, China | ..... | ..... | 29.82 | 757.5 | 70.2 | 21.2 | ..... | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 2 | ..... | Overcast | J. M. T. Guimarães, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 28.98 | 736.1 | 29.39 | 746.4 | 66.0 | 18.9 | 55 | SE | 16 | 7 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.28 | 743.7 | 29.69 | 754.2 | 64.1 | 12.3 | 86 | SE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.48 | 748.7 | 29.72 | 754.9 | 46.9 | 8.3 | 75 | SSE | 4 | 2 | ..... | ..... | 10kn | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.75 | 755.6 | 29.76 | 756.0 | 39.2 | 4.0 | 75 | SE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.09 | 738.8 | 29.69 | 754.2 | 69.8 | 21.0 | 68 | SE | 9 | 4 | ..... | ..... | 3c | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Nikolaiev | 29.80 | 756.8 | 29.87 | 758.6 | 68.9 | 20.5 | 48 | S | 31 | 14 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.97 | 761.2 | 29.99 | 761.7 | 63.7 | 17.6 | 69 | S | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.46 | 748.3 | 30.02 | 762.6 | 39.6 | 4.2 | 82 | S | 9 | 4 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.72 | 754.9 | 29.92 | 759.9 | 78.1 | 25.6 | 24 | SSW | 22 | 10 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.94 | 760.6 | 29.96 | 761.1 | 32.9 | 0.5 | 64 | WNW | 4 | 2 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.76 | 730.4 | 30.12 | 765.1 | 74.7 | 23.7 | 37 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.17 | 766.2 | 30.08 | 764.1 | 76.8 | 24.9 | 29 | WNW | 11 | 5 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.56 | 750.7 | 30.04 | 763.0 | 40.5 | 4.7 | 68 | ENE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.67 | 753.5 | 29.94 | 760.5 | 39.2 | 4.0 | 84 | SW | 2 | 1 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 28 86 | 732.9 | 29.82 | 757.5 | 42.6 | 5.9 | 69 | SE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.87 | 758.8 | 30.10 | 764.6 | 64.8 | 18.2 | 62 | NW | 16 | 7 | ..... | ..... | 2ks | ..... | ..... | Blank | Blank | ..... | |
| Tashkend | 28.56 | 725.3 | 30.09 | 764.3 | 68.0 | 20.0 | 59 | SE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | Light clouds | Teich, A. M. |
| Barnaul | 29.70 | 754.3 | 30.21 | 767.4 | 40.1 | 4.5 | 41 | NE | 4 | 2 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.07 | 763.7 | 30.37 | 771.4 | 30.7 | — 0.7 | 46 | N | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking, (China) | 29.64 | 752.9 | 29.78 | 756.5 | 65.7 | 18.7 | 51 | S | 4 | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Vladivostock | 29.86 | 758.4 | 29.96 | 760.9 | 33.3 | 0.7 | 90 | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | Foggy | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.67 | 753.6 | 29.78 | 756.3 | 58.6 | 14.8 | 42 | W | 8.5 | 3.80 | ..... | ..... | 2k | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 29.86 | 758.5 | 29.92 | 760.0 | 52.2 | 11.2 | 84 | NW | 4.4 | 1.95 | ..... | ..... | 10 | ..... | ..... | 0.065 | 16.9 | Raining | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.98 | 685.2 | ..... | ..... | 46.9 | 7.7 | 62 | SW | 9.9 | 4.44 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Osservatory | 27.78 | 705.6 | ..... | ..... | 54.7 | 12.6 | 60 | W | 11.2 | 5.00 | ..... | 0 | 9 | ..... | ..... | 0.031 | 0.8 | Almost cov'd | The Staff. |
| Murcia, Met. Obs'y | 29.84 | 757.9 | 29.99 | 761.7 | 61.7 | 16.5 | 52 | W | 4.6 | 2.06 | ..... | 4 | 4 | WNW | ..... | 0 | 0. | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.08 | 738.6 | 29.98 | 761.5 | 51.6 | 10.9 | 88 | SW | 8.7 | 3.9 | ..... | ..... | 10 | ..... | ..... | 0.071 | 1.8 | Rainy | R. Gil Villanueva, Dir. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.81 | 757.1 | 29.87 | 758.8 | 82.1 | 27.8 | 74 | S | 24.5 | 11.0 | ..... | 4c | 2k | SSW | ..... | 0 | 0 | Fair | Benito Vines, S. J |
| Manilla, Philippine Islands | 29.79 | 756.7 | 29.84 | 758.1 | 85.1 | 29.5 | 75 | SSE | 9.4 | 4.2 | ..... | 3 | 6 | NW | E | 0 | 0 | Covered | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.14 | 765.5 | 30.24 | 768.0 | 57.0 | 13.9 | 58 | W | 8.5 | 3.8 | ..... | 0 | 2 | ..... | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W.I | 29.99 | 761.7 | 30.08 | 764.0 | 78.8 | 26.0 | 76 | S | 0 | 0 | ..... | 1s | 2k | SE | SE | 0.207 | 5.25 | Clear | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. | | Barometer. Reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. Direction. | Wind. Velocity. | | Wind. Force. | Clouds. Amount. | | Clouds. Direction. | | Rain-fall or melted snow in the past 24 hours. | | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | L'w'r 0—10. | Upper. From— | Lower From— | Inches. | Millimeters. | | |
| Haparanda | 29.88 | 758.9 | 29.92 | 759.9 | 39.2 | 4.0 | .... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.76 | 755.8 | 29.81 | 757.2 | 37.4 | 3.0 | 47 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.69 | 754.1 | 29.74 | 755.4 | 34.5 | 1.4 | 56 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.48 | 748.9 | 29.66 | 753.4 | 37.4 | 3.0 | 73 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.118 | 3.0 | ..... | |
| Wisby | 29.57 | 751.0 | 29.63 | 752.5 | 35.2 | 1.8 | 82 | NNE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.189 | 4.8 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.57 | 751.0 | 29.61 | 752.9 | 34.5 | 1.4 | 76 | N | 12.8 | 5.7 | ..... | ..... | 10 | ..... .... | NNE | 0.052 | 1.33 | ..... ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.25 | 717.6 | 29.71 | 754.7 | 43.0 | 6.1 | 63 | ESE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.370 | 9.4 | Covered..... | The Observatory. |
| Zurich | 27.94 | 709.8 | 29.62 | 752 4 | 42.8 | 6.0 | 87 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.291 | 7.4 | Raining..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, −6.7 mm.; Thermometer,—6.1 Cent.; Relative Humidity, +6 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,338.6 feet, and that of Zurich 470 m., or 1,542.0 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.78 | 756.3 | 79.9 | 26.6 | 36 | S | 2 | 1.0 | ..... | ..... | 9 | ..... | SW | 0.063 | 1.6 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.28 | 769.0 | 87.8 | 31.0 | ..... | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.67 | 753.5 | 57.4 | 14.1 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut. (Syria,) Lee Obs'y | 29.73 | 755.1 | 29.85 | 758.1 | 81.0 | 27.2 | 54 | NE | ..... | ..... | 1 | ..... | 1ck | ..... | ..... | 0 | 0 | D clouds..... | Prof. C.V. A.Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29 89 | 759.2 | 29.96 | 761.0 | 39.8 | 4.3 | 80 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.71 | 754.6 | 30.02 | 762.5 | 38 | 3.3 | ..... | NE | 5 | 2.2 | ..... | 0 | 5s | ..... | NE | 0 | 0 | Fair..... | W. R. Bigg. |
| *Chatham, N. B | 29.87 | 758.7 | 29.94 | 760.5 | 41 | 5.0 | 63 | Calm | 0 | 0 | ..... | 2k | 0 | W | ..... | 0 | 0 | Fair..... | G. A. Blair. |
| Charlottetown, P. E. Island | 29.88 | 758.9 | 29.92 | 760.0 | 37 | 2.8 | 81 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | H J. Cundall, C. E. |
| Cornwall, Ontario | 29.79 | 756.7 | 29 99 | 761.7 | 37.0 | 2.8 | 68 | E | ..... | ..... | 1 | 0 | 7s | ..... | ..... | 0 | 0 | Cloudy ..... | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 30.15 | 765.8 | 30.20 | 767.1 | 40.1 | 4.5 | 100 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | W. H. Bevis. |
| *Father Point, Quebec | 29.98 | 761.5 | 30.01 | 762.2 | 34 | 1.1 | 88 | SW | 8 | 3.6 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Clear..... | J. McWilliams. |
| Fredericton, N. B | 29.93 | 760.2 | 29.99 | 761.7 | 40.6 | 4.8 | 60 | W | 5 | 2.2 | ..... | c | 0 | ..... | ..... | 0 | 0 | Clear..... | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.40 | 746.7 | 30.26 | 768.6 | 35 | 1.7 | 67 | E | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | James Stewart. |
| Granton, Ontario | 28.78 | 731.0 | 29.92 | 760.0 | 36 | 2.2 | ..... | N | ..... | ..... | 2 | 1c | 0 | ..... | ..... | 0 | 0 | Fine..... | James Grant. |
| *Halifax, N. S | 29.78 | 756.4 | 29.91 | 759.7 | 41 | 5.0 | 86 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.59 | 751.6 | 29.97 | 761.2 | 38.7 | 3.7 | 95 | NE | ..... | ..... | 3 | 10cs | 0 | NE | ..... | 0 | 0 | Cloudy..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.63 | 752.6 | 29.98 | 761.5 | 35 | 1.7 | 81 | NW | 6 | 2.7 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.84 | 757.9 | 29.88 | 758.9 | 47.3 | 8.5 | 90 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | C. H. Rigby. |
| Moose Factory, Ontario | 30.25 | 768.3 | 30.28 | 769.1 | 27.0 | — 2.8 | 91 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy..... | J. R. Nason. |
| *Montreal, Quebec | 29.83 | 757.7 | 30.04 | 763.0 | 36 | 2.2 | 69 | NE | 8 | 3.6 | ..... | 2c | 2ks | W | ..... | 0 | 0 | Cloudy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.33 | 745.0 | 30.05 | 763.3 | 37 | 2.8 | 62 | N | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Rev. R. Mosly. |
| Peterboro, Ontario | 29.22 | 742.2 | 29.99 | 761.7 | 36.7 | 2.6 | 79 | N | ..... | ..... | 1 | c | 6ks | ..... | ..... | 0 | 0 | Fair..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.19 | 741.4 | 29.89 | 759.2 | 37 | 2.8 | 81 | NE | 14 | 6.3 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Cloudy..... | H. Morgan. |
| Port Hastings, N. S | 29.87 | 758.7 | 29.92 | 760.0 | 36.6 | 2.6 | ..... | NW | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine..... | Peter Grant. |
| Port Stanley, Ontario | 29.23 | 742.4 | 29.89 | 759.2 | 38 | 3.3 | 56 | E | 12 | 5.4 | ..... | ..... | 10ks | ..... | NE | 0 | 0 | Cloudy..... | M. Payne. |
| *Quebec, Quebec | 29.70 | 754.4 | 30.04 | 763.0 | 30 | — 1.1 | 84 | Calm | .... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.62 | 752.3 | 30.09 | 764.3 | 36 | 2.2 | 80 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | W. H. McIntyre. |
| St. Andrews, N. B | 29.92 | 760.0 | 29.97 | 761.2 | 42 | 5.6 | 62 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Dr. Gove. |
| St. John, N. B | 29.79 | 756.7 | 29.95 | 760.7 | 42 | 5.6 | 66 | NE | 4 | 1.8 | ..... | 3ck | 0 | ..... | ..... | 0 | 0 | Fine..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.28 | 743.7 | 30.02 | 762.5 | 36 | 2.2 | 71 | NE | 16 | 7.2 | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Clear..... | K. Stewart. |
| Stayner, Ontario | 29.19 | 741.4 | 29.99 | 761.7 | 37 | 2.8 | 82 | NE | 5 | 2.2 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair..... | R. J. Cole. |
| Stratford, Ontario | 29.68 | 751.3 | 29.89 | 759.2 | 35.0 | 1.7 | 70 | E | 12 | 5.4 | ..... | 2cs | 0 | NW | ..... | 0 | 0 | Fine..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.85 | 758.2 | 29.89 | 759.2 | 46 | 7.8 | 57 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | T. C. Hill. |
| *Toronto, Ontario | 29.58 | 751.3 | 29.97 | 761.2 | 38 | 3.3 | 55 | NE | 15 | 6.7 | ..... | 5ck | 5ks | W | Calm | 0 | 0 | Cloudy..... | Magnetic Observatory. |
| Windsor, N. S | 29.84 | 757.9 | 29.94 | 760.5 | 42.0 | 5.6 | 87 | NW | 2 | 0.9 | ..... | 8k;cs | 0 | ..... | ..... | 0 | 0 | Cloudy . .. | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 39.0 | 3.9 | 82 | SW | ..... | ..... | ..... | 10k | 10s | ..... | ..... | 0 | 0 | Fair ..... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Cloud. Amount. Up'er 0—10. | Cloud. Amount. Low'r 0—10. | Cloud. Direction. Upper. From— | Cloud. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.76 | 755.9 | 29.99 | 761.7 | 38 | 3.3 | 81 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Alpena, Michigan | 29.41 | 747.0 | 30.08 | 764.0 | 35 | 1.7 | 61 | NE | 15 | 6.7 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Atlanta, Georgia | 28.48 | 723.4 | 29.58 | 751.3 | 55 | 12.8 | 87 | NW | 12 | 5.4 | ..... | 8k | 0 | SW | ..... | 0.64 | 16.3 | Cloudy | |
| Atlantic City, New Jersey | 29.79 | 756.7 | 29.80 | 756.9 | 43 | 6.1 | 100 | NE | 28 | 12.5 | ..... | ..... | 10n | ..... | Calm | 0.22 | 5.6 | Light rain | |
| Augusta, Georgia | 29.37 | 746.0 | 29.54 | 750.3 | 63 | 17.2 | 94 | SE | 12 | 5.4 | ..... | ..... | 10n | ..... | SE | 1.73 | 43.9 | Light rain | |
| Baltimore, Maryland | 29.74 | 755.4 | 29.79 | 756.7 | 46 | 7.8 | 92 | E | 9 | 4.0 | ..... | ..... | 10n | ..... | NE | 0.22 | 5.6 | Light rain | |
| Barnegat, New Jersey | 29.78 | 756.4 | 29.80 | 756.9 | 41 | 5.0 | 100 | E | 30 | 13.4 | ..... | ..... | 10n | ..... | Calm | 0.16 | 4.1 | Light rain | |
| Bismarck, Dakota | 28.31 | 719.1 | 30.16 | 766.1 | 36 | 2.2 | 90 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Boerne, Texas | 28.63 | 727.2 | 29.95 | 760.7 | 54 | 12.2 | 21 | NW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boise City, Idaho | 27.24 | 691.9 | 30.20 | 767.1 | 43 | 6.1 | 67 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Boston, Massachusetts | 29.87 | 758.7 | 30.03 | 762.8 | 36 | 2.2 | 90 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | NE | 0.03 | 0.8 | Light rain | |
| Brackettville, Texas | 29.02 | 737.1 | 30.06 | 763.5 | 51 | 10.6 | 79 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 29.15 | 740.4 | 30.20 | 767.1 | 30 | — 1.1 | 89 | SE | 8 | 3.6 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Brownsville, Texas | 30.04 | 763.0 | 30.08 | 764.0 | 62 | 16.7 | 51 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.17 | 740.9 | 29.88 | 758.9 | 38 | 3.3 | 63 | NE | 14 | 6.3 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 26 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.72 | 754.9 | 30.01 | 762.2 | 36 | 2.2 | 71 | N | 3 | 1.3 | ..... | 5ck | 5s | W | Calm | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.54 | 750.3 | 29.94 | 760.5 | 43 | 6.1 | 75 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.68 | 17.3 | Clear | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.29 | 642.4 | 30.09 | 764.3 | 42 | 5.6 | 19 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 42 | 5.6 | 42 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.44 | 697.0 | 30.01 | 762.2 | 42 | 5.6 | 66 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 29.74 | 755.4 | 29.75 | 755.6 | 66 | 18.9 | 89 | S | 13 | 5.8 | ..... | ..... | 10s | ..... | Calm | 1.16 | 29.5 | Cloudy | |
| Cape Henry, Virginia | 29.69 | 754.1 | 29.71 | 754.6 | 58 | 14.4 | 88 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.06 | 1.5 | Cloudy | |
| Cape Lookout, N. Carolina | 29.75 | 755.6 | 29.77 | 756.1 | 65 | 18.3 | 89 | SW | 31 | 13.9 | ..... | ..... | 10n | ..... | SW | 2.12 | 51.1 | Light rain | |
| Cape May, New Jersey | 29.69 | 754.1 | 29.72 | 754.9 | 46 | 7.8 | 92 | NE | 25 | 11.2 | ..... | ..... | Fog | ..... | Calm | 0.19 | 4.8 | Foggy | |
| Castroville, Texas | 29.35 | 745.5 | 30.03 | 762.8 | 57 | 13.9 | 52 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 29.62 | 752.3 | 29.67 | 753.6 | 64 | 17.8 | 94 | SE | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 3 59 | 91.2 | Heavy rain | |
| Cheyenne, Wyoming | 24.20 | 615.2 | 30.14 | 765.5 | 27 | — 2.8 | 76 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Chicago, Illinois | 29.30 | 744.2 | 30.01 | 762.2 | 36 | 2.2 | 71 | NE | 12 | 5.4 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Cincinnati, Ohio | 29.20 | 741.7 | 29.86 | 758.4 | 41 | 5.0 | 65 | N | 12 | 5.4 | ..... | 5k | 4ks | W | NE | 0.72 | 18.3 | Cloudy | |
| Cleveland, Ohio | 29.08 | 738.6 | 29.82 | 757.4 | 36 | 2.2 | 80 | NE | 16 | 7.2 | ..... | ..... | 10ks | ..... | NE | 0.08 | 2.0 | Cloudy | |
| Coleman City, Texas | 28.36 | 720.3 | 30.07 | 763.8 | 47 | 8.3 | 77 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Columbus, Ohio | 28.94 | 735.1 | 29.79 | 756.7 | 39 | 3.9 | 73 | N | 12 | 5.4 | ..... | 2k | 5ks | NW | N | 0.57 | 14.5 | Fair | |
| Corpus Christi, Texas | 28.25 | 717.5 | 29.99 | 761.7 | 42 | 5.6 | 83 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Corsicana, Texas | 29.58 | 751.3 | 30.06 | 763.5 | 53 | 11.7 | 73 | NW | 12 | 5.4 | ..... | 0 | 5s | ..... | S | 0.16 | 4.1 | Fair | |
| Davenport, Iowa | 29.40 | 746.7 | 30.06 | 763.5 | 34 | 1.1 | 79 | N | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.55 | 649.0 | ..... | ..... | 28 | — 2.2 | 66 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| Decatur, Texas | 28.95 | 735.3 | 30.12 | 765.0 | 55 | 12.8 | 50 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.27 | 743.4 | 30.07 | 763.8 | 48 | 8.9 | 70 | N | 7 | 3.1 | ..... | 2c | 0 | N | ..... | 0.01 | 0.3 | Fair | |
| Denver, Colorado | 24.99 | 634.7 | 30.21 | 767.3 | 32 | 0.0 | 89 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Des Moines, Iowa | 29.18 | 741.2 | 30.09 | 764.3 | 36 | 2.2 | 71 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Detroit, Michigan | 29.22 | 742.2 | 29.90 | 759.4 | 36 | 2.2 | 71 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Dodge City, Kansas | 27.59 | 700.8 | 29.95 | 760.7 | 40 | 4.4 | 82 | N | 16 | 7.2 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.40 | 746.7 | 30.12 | 765.0 | 34 | 1.1 | 61 | NE | 8 | 3.6 | ..... | 2k | 5ks | NE | N | 0 | 0 | Fair | |
| Duluth, Minnesota | 29.53 | 750.0 | 30.24 | 768.1 | 30 | — 1.1 | 100 | W | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Eagle Pass, Texas | 29.40 | 746.7 | 30.15 | 765.8 | 57 | 13.9 | 52 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.90 | 759.4 | 29.97 | 761.2 | 42 | 5.6 | 58 | N | 8 | 3.6 | ..... | 8c | 0 | W | ..... | Inap. | Inap. | Fair | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 64 | 17.8 | 43 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| El Paso, Texas | 26.44 | 671.6 | ..... | ..... | 35 | 1.7 | 61 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.10 | 739.1 | 29.83 | 757.7 | 36 | 2.2 | 90 | NE | 20 | 8.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| Escanaba, Michigan | 29.47 | 748.5 | 30.16 | 766.1 | 28 | — 2.2 | 66 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.55 | 725.2 | 30.15 | 765.8 | 50 | 10.0 | 14 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 28.09 | 713.5 | ..... | ..... | 36 | 2.2 | 82 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.21 | 5.3 | Clear | |
| Fort Craig, New Mexico | 25.71 | 653.0 | 29.78 | 756 4 | 32 | 0.0 | 41 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.39 | 644.9 | 30.35 | 770.9 | 43 | 6.1 | 66 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian T'r | 29.52 | 749.8 | 30.07 | 763.8 | 45 | 7.2 | 76 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Fort Griffin, Texas | 28.92 | 734 6 | 30.22 | 767.6 | 47 | 8.3 | 77 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear | |
| Fort Keogh, Montana | 27.62 | 701.5 | ..... | ..... | 27 | — 2.8 | 77 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort McKavett, Texas | 27.88 | 708.1 | 29.84 | 757.9 | 45 | 7.2 | 76 | W | 8 | 3 6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 30.25 | 768.3 | 30.29 | 769.4 | —13 | —25.0 | 100 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Sill, Indian Territory | 28.92 | 734.6 | 30.05 | 763.3 | 46 | 7.8 | 69 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.52 | 13.2 | Clear | |
| Fort Stevenson, Dakota | 28.31 | 719.1 | ..... | ..... | 32 | 0.0 | 68 | Calm | 0 | 0 | ..... | 1c | 0 | Calm | ..... | Inap. | Inap. | Fair | |
| Fredericksburg, Texas | 28.38 | 720.8 | 29.74 | 755.4 | 59 | 15.0 | 48 | N | 12 | 5.4 | ..... | 0 | 5ks | ..... | Calm | 0 | 0 | Fair | |
| Galveston, Texas | 29.91 | 759.7 | 29.96 | 761.0 | 61 | 16.1 | 77 | NW | 25 | 11.2 | ..... | 0 | 8s | ..... | NW | 0 | 0 | Cloudy | |
| Graham, Texas | 29.13 | 739.9 | 30.21 | 767.3 | 49 | 9.4 | 78 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.36 | 745.7 | 30.03 | 762.8 | 34 | 1.1 | 70 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.09 | 738.9 | 29.88 | 758.9 | 39 | 3.9 | 64 | N | 9 | 4.0 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Clear | |
| Indianola, Texas | 30.02 | 762.5 | 30.05 | 763.3 | 60 | 15.6 | 65 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Jacksboro, Texas | 29.03 | 737.3 | 30.16 | 766.1 | 60 | 15.6 | 29 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.65 | 753.1 | 29.67 | 753.6 | 77 | 25.0 | 77 | S | 20 | 8.9 | ..... | ..... | 10s | ..... | S | Inap. | Inap. | Cloudy | |
| Keokuk, Iowa | 29.38 | 746.2 | 30.01 | 762.2 | 39 | 3.9 | 73 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Key West, Florida | 29.84 | 757.9 | 29.87 | 758.7 | 79 | 26.1 | 82 | S | 17 | 7.6 | ..... | 5k | 0 | S | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 29.70 | 754.4 | 29.72 | 754.9 | 65 | 18.3 | 89 | SW | 22 | 9.8 | ..... | 10cs | 0 | W | ..... | 0.64 | 16.3 | Cloudy | |
| Knoxville, Tennessee | 28.71 | 729.2 | 29.70 | 754.4 | 50 | 10.0 | 81 | N | 8 | 3.6 | ..... | ..... | 10ks | ..... | N | 0.57 | 14.5 | Threatening | |
| La Crosse, Wisconsin | 29.38 | 746.2 | 30.15 | 765.8 | 34 | 1.1 | 70 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.29 | 667.8 | 30.44 | 773.2 | 36 | 2.2 | 45 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.77 | 756.1 | 30.11 | 764.8 | 63 | 17.2 | 52 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.20 | 741.7 | 30.06 | 763.5 | 43 | 6.1 | 67 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.64 | 752.8 | 29.98 | 761.5 | 57.0 | 13.9 | 52 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.27 | 743.4 | 29.83 | 757.7 | 44 | 6.7 | 52 | N | 8 | 3.6 | ..... | 8ck;k | 0 | N | ..... | 1.66 | 42.2 | Fair | |
| Lynchburg, Virginia | 29.03 | 737.3 | 29.70 | 754.4 | 51 | 10.6 | 86 | NE | 3 | 1.3 | ..... | ..... | 10n | ..... | Calm | 0.29 | 7.4 | Light rain | |
| Madison, Wisconsin | 29.07 | 738.4 | 30.09 | 764.3 | 32 | 0.0 | 69 | NE | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.44 | 747.8 | 30.17 | 766.3 | 33 | 0.6 | 70 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.50 | 723.9 | 30.29 | 769.4 | 49 | 9.4 | 71 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.58 | 751.3 | 29.90 | 759.4 | 48 | 8.9 | 77 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.31 | 744.5 | 30.06 | 763.5 | 36 | 2.2 | 80 | NE | 17 | 7.6 | ..... | 1k | 8s | NE | NE | 0.68 | 17.3 | Clear | |
| Mobile, Alabama | 29.68 | 753.9 | 29.72 | 754.9 | 62 | 16.7 | 80 | N | 8 | 3.6 | ..... | 2k | 5s | W | W | 0 | 0 | Cloudy | |
| Montgomery, Alabama | 29.43 | 747.5 | 29.66 | 753.4 | 58 | 14.4 | 87 | N | 6 | 2.7 | ..... | 0 | 8ks | ..... | N | 0.09 | 2.3 | Fair | |
| Morgantown, West Virginia | 28.61 | 726.7 | 29.63 | 752.6 | 51 | 10.6 | 86 | SW | 12 | 5.4 | ..... | ..... | 10n | ..... | SW | 0.34 | 8.6 | Clearing | |
| Mt. Washington, N. H. | 23.63 | 600.2 | 29.99 | 761.7 | 17 | — 8.3 | 83 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.13 | 3.3 | Light rain | |
| Nashville, Tennessee | 29.28 | 743.7 | 29.81 | 757.2 | 49 | 9.4 | 78 | N | 4 | 1.8 | ..... | ..... | 10ks | ..... | Calm | 0.26 | 6.6 | Cloudy | |
| New Haven, Connecticut | 29.82 | 757.4 | 29.94 | 760.5 | 38 | 3.3 | 91 | NE | 15 | 6.7 | ..... | ..... | 10n | ..... | N | 0.01 | 0.3 | Cloudy | |
| New London, Connecticut | 29.92 | 760.0 | 29.97 | 761.2 | 41 | 5.0 | 91 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | NE | 0.08 | 2.0 | Light rain | |
| New Orleans, Louisiana | 29.70 | 754.4 | 29.76 | 755.9 | 64 | 17.8 | 73 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.12 | 3.0 | Cloudy | |
| Newport, Rhode Island | 29.91 | 759.7 | 29.96 | 761.0 | 43 | 6.1 | 83 | NE | 5 | 2.2 | ..... | 2k | 5s | NW | NW | 2.82 | 71.6 | Fair | |
| New York, New York | 29.71 | 754.6 | 29.88 | 758.9 | 43 | 6.1 | 91 | NE | 19 | 8.5 | ..... | ..... | 10n | ..... | SW | 0.02 | 0.5 | Light rain | |
| Norfolk, Virginia | 29.65 | 753.1 | 29.70 | 754.4 | 61 | 16.1 | 94 | S | 6 | 2.7 | ..... | ..... | 10n;fog | ..... | EN | 0.27 | 6.9 | Light rain | |
| | | | | | | | | | | | | | 10s | ..... | SW | 0.10 | 2.5 | Cloudy | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS | BAROMETER: Corrected for instrum'tal error and temperature, Inches. | BAROMETER: Corrected for instrum'tal error and temperature, Millimeters. | BAROMETER: Reduced to sea-level, Inches. | BAROMETER: Reduced to sea-level, Millimeters. | TEMPERATURE OF THE AIR, Fahrenheit. | TEMPERATURE OF THE AIR, Centigrade. | RELATIVE HUMIDITY, Per cent. | WIND: Direction, From— | WIND: Velocity, Miles per hour. | WIND: Velocity, Meters per second. | WIND: Force, 0—10 | CLOUDS: Amount, Upper, 0—10 | CLOUDS: Amount, Lower, 0—10 | CLOUDS: Direction, Upper, From— | CLOUDS: Direction, Lower, From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS, Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS, Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.30 | 693.4 | 29.98 | 761.5 | 33 | 0.6 | 89 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Olympia, Washington Ter. | 30.20 | 767.1 | 30.24 | 768.1 | 39.2 | 4.0 | 91 | S | 7 | 3.1 | ..... | ..... | 9s | ..... | S | 0.15 | 3.8 | Cloudy. | |
| Omaha, Nebraska | 28.95 | 735.3 | 30.07 | 763.8 | 43 | 6.1 | 75 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Oswego, New York | 29.63 | 752 6 | 29.96 | 761.0 | 40 | 4.4 | 73 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy. | |
| Pembina, Dakota | 29.34 | 745.2 | 30.21 | 767.3 | 29 | — 1.7 | 89 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Philadelphia, Pa | 29.77 | 756 1 | 29.82 | 757.4 | 43 | 6.1 | 100 | NE | 22 | 9.8 | ..... | ..... | 10n | ..... | NE | 0.20 | 5.1 | Light rain. | |
| Phœnix, Arizona | 28.86 | 733.0 | 30.69 | 779.5 | 52 | 11.1 | 29 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Pike's Peak, Colorado | 17.76 | 451.1 | 29.97 | 761.2 | 6 | —14.4 | 52 | NW | 24 | 10.7 | .... | 0 | 0 | ..... | ..... | 0.26 | 6.9 | Clear. | |
| Pioche, Nevada | 24.17 | 613.9 | 29.94 | 760.5 | 38 | 3.3 | 38 | S | 1 | 0.4 | .. ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Pittsburg, Pennsylvania | 28.86 | 733.0 | 29.66 | 753.4 | 44 | 6.7 | 92 | N | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.83 | 21.1 | Light rain. | |
| Port Huron, Michigan | 29.25 | 742.9 | 29.93 | 760.2 | 35 | 1.7 | 80 | N | 24 | 10.7 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Portland, Maine | 29.95 | 760.7 | 30.00 | 762.0 | 41 | 5.0 | 65 | N | 4 | 1.8 | ..... | 5k | 5s | Calm | Calm | 0 | 0 | Cloudy | |
| Portland, Oregon | 30.25 | 768.3 | 30.35 | 770.9 | 41.8 | 5.4 | 87 | S | 2 | 0.9 | ..... | 0 | 9ks | ..... | W | 0.01 | 0.3 | Cloudy | |
| Prescott, Arizona | 24.85 | 631.2 | 30.21 | 767.3 | 30 | — 1.1 | 57 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Pilot Point, Texas | 29.12 | 739.6 | 29.92 | 760.0 | 62 | 16.7 | 72 | N | 12 | 5.4 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy. | |
| Punta Rassa, Florida | 29 79 | 756.7 | 29.81 | 757.2 | 78 | 25.6 | 86 | S | 28 | 12.5 | ..... | 5k | 5s | S | S | 0 | 0 | Cloudy | |
| Red Bluff, California | 29.77 | 756.1 | 30.13 | 765.3 | 58 | 14.4 | 64 | N | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Rio Grande City, Texas | 30.00 | 762.0 | 30.22 | 767.6 | 64 | 17.8 | 49 | NW | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Rochester, New York | 29.31 | 744.5 | 29.94 | 760.5 | 37 | 2.8 | 81 | E | 10 | 4.5 | ..... | 5k | 5s | NE | Calm | 0 | 0 | Cloudy. | |
| Rossburg, Oregon | 29.76 | 755 9 | 30.35 | 770.9 | 43.6 | 6.4 | 84 | Calm | 0 | 0 | ..... | 0 | 8s | ..... | Calm | 0.02 | 0.5 | Cloudy. | |
| Sacramento, California | 30.02 | 762.5 | 30.11 | 764.8 | 52 | 11.1 | 86 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| St. Louis, Missouri | 29.42 | 747.2 | 30.01 | 762.2 | 39 | 3.9 | 64 | N | 10 | 4.5 | ..... | 1c | 0 | N | ..... | 0 | 0 | Clear. | |
| St. Marks, Florida | 29.63 | 752.6 | 29.65 | 753.1 | 68 | 20.0 | 95 | NW | 12 | 5.4 | ..... | ..... | 10n | ..... | NW | 1.39 | 45.3 | Light rain. | |
| St. Paul, Minnesota | 29.27 | 743.4 | 30.13 | 765.3 | 35 | 1.7 | 61 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.76 | 654.3 | 30.09 | 764.3 | 38 | 3.3 | 45 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| San Antonio, Texas | 29.40 | 746 7 | 29.99 | 761.7 | 58 | 14.4 | 48 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| San Diego, California | 29.91 | 759.7 | 29.98 | 761.5 | 55 | 12.8 | 56 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Sandusky, Ohio | 29.18 | 741.2 | 29.86 | 758.4 | 38 | 3.3 | 72 | N | 19 | 8.5 | ..... | 10k | 0 | N | ..... | 0 | 0 | Cloudy. | |
| Sandy Hook, New Jersey | 29.81 | 757.2 | 29.84 | 757.9 | 42 | 5.6 | 100 | NE | 27 | 12.1 | ..... | ..... | 10n | ..... | NE | 0.34 | 8.6 | Light rain. | |
| San Francisco, California | 30.09 | 764.3 | 30.15 | 765.8 | 51.8 | 11.0 | 73 | W | 3 | 1.3 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Hazy. | |
| Santa Fé, New Mexico | 23.44 | 595.4 | 29.98 | 761.5 | 29 | — 1.7 | 56 | Calm | 0 | 0 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Clear. | |
| Savannah, Georgia | 29.65 | 753.1 | 29.74 | 755.4 | 66 | 18.9 | 95 | SW | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 5.31 | 134.9 | Heavy rain. | |
| Shreveport, Louisiana | 29.74 | 755.4 | 29.96 | 761.0 | 54 | 12.2 | 87 | NW | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.50 | 12.7 | Cloudy | |
| Silver City, New Mexico | 24.36 | 618.7 | 30.64 | 778.2 | 40 | 4.4 | 27 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Smithville, North Carolina | 29.73 | 755.1 | 29.76 | 755.9 | 63 | 17.2 | 100 | S | 25 | 11.2 | ..... | ..... | 10n | ..... | S | 1.20 | 30.5 | Light rain. | |
| Springfield, Massachusetts | 29.89 | 759.2 | 30.02 | 762.5 | 36 | 2.2 | 100 | N | 6 | 2.7 | ..... | ..... | 10n | ..... | N | 0.25 | 6.3 | Light snow. | |
| Stockton, Texas | 27.20 | 690.9 | 30.20 | 767.1 | 42 | 5.6 | 66 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.97 | 761.2 | 30.02 | 762.5 | 43 | 6.1 | 51 | NE | 7 | 3.1 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Toledo, Ohio | 29.19 | 741.4 | 29.88 | 758.9 | 38 | 3.3 | 72 | N | 14 | 6.3 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy. | |
| Tucson, Arizona | 27.57 | 700.3 | 30.12 | 765.0 | 47 | 8.3 | 27 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Umatilla, Oregon | 29.83 | 757.7 | 30.33 | 770.4 | 47.0 | 8.3 | 70 | SW | 16 | 7.2 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 25 | — 3.9 | 75 | SE | ..... | ..... | 1 | ..... | 10s | ..... | SE | 0 | 0 | Cloudy. | |
| Uvalde, Texas | 29.28 | 743.7 | 30.11 | 764.8 | 56 | 13.3 | 51 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Vicksburg, Mississippi | 29.62 | 752 3 | 29.87 | 758.7 | 55 | 12 8 | 81 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 0.25 | 6.3 | Cloudy. | |
| Virginia City, Montana | 24.26 | 616.2 | 29.74 | 755.4 | 33 | 0.6 | 70 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy. | |
| Visalia, California | 29.73 | 755.1 | 30.11 | 764.8 | 49.3 | 9.6 | 85 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Washington, D. C. | 29.65 | 753.1 | 29.77 | 756.1 | 45 | 7.2 | 100 | E | 12 | 5.4 | ..... | ..... | 10n;fg | ..... | NE | 0.31 | 7.9 | Light rain. | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 46 | 7.8 | 47 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Wilmington, N. Carolina | 29.66 | 753.4 | 29.73 | 755.1 | 64 | 17.8 | 94 | S | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 1.89 | 48.0 | Light rain. | |
| Winnemucca, Nevada | 25.71 | 653.0 | 30.07 | 763.8 | 40 | 4.4 | 73 | SW | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Wood's Holl, Mass | 29.92 | 760.0 | 29.96 | 761.0 | 43 | 6.1 | 68 | E | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.07 | 1.8 | Rain & hail. | |
| Yankton, Dakota | 28.86 | 733.0 | 30.19 | 766.8 | 39 | 3.9 | 55 | N | 5 | 2.2 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Yuma, Arizona | 29.82 | 757.4 | 29.98 | 761.5 | 56 | 13.3 | 40 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.44 | 722.4 | 29.81 | 757.2 | 42 | 5.6 | 65 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 29.83 | 757.7 | 29.88 | 758.9 | 82 | 27.8 | 74 | S | 6.0 | 2.7 | ..... | 4k | 0 | S | ..... | 0 | 0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A. | 25.25 | 641.3 | ..... | ..... | 67.0 | 19.4 | 85 | Calm | ..... | ..... | 0 | 0 | 4ks | ..... | ..... | 0.33 | 8.4 | ..... | Thomas Herran. |
| Navassa, W. I. | 29.93 | 760.2 | 30.01 | 762.2 | 80.2 | 26.8 | ..... | SE | 12 | 5.4 | ..... | ..... | ..... | ..... | ..... | Inap | Inap. | Hazy. | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.01 | 762.2 | 30.01 | 762.2 | 77 | 25.0 | 91 | E | ..... | ..... | 3 | ..... | 8ks | ..... | ..... | 1.12 | 28.39 | ⅜ clouded. | C. J. Hering. |
| Santiago de Cuba, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A. | 30.39 | 771.9 | 30.44 | 773.2 | 18.0 | — 7.8 | 92 | N | 8 | 3.6 | ..... | 2c | 1s | N | N | 0 | 0 | Fair | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,049 (?) ft., or 317.0 (?) m.. Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,676 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.08 | 764.0 | 52 | 11.1 | 49 | 9.4 | 78 | NW | 4 | 1.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 29.78 | 756.4 | 64 | 17.8 | 64 | 17.8 | 94 | NNW | 1 | 0.4 | ..... | ..... | 2 | ..... | NNW | 1.59 | 40.4 | ..... | ..... | Fair ..... | |
| Navy Yard, Portsmouth, N.H | 30.10 | 764.5 | 60 | 15.6 | 41 | 5.0 | 60 | N | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Naval Hospital, Yokohama, Japan.....*. | 30.20‡ | 767.1‡ | ..... | ..... | 53.5 | 11.9 | 70 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Adams, Panama .....*. | 29.97 | 761.2 | 82 | 27.8 | 81 | 27.2 | 95 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Alaska, N. 49° 15′ W. 123° 46′ .... | 30.21‡ | 767.3‡ | ..... | ..... | 40 | 4.4 | 100 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.32 | 8.1 | Smooth | ..... | Raining..... | |
| Alliance, Naples, Italy..... | 29.61‡ | 752.1‡ | ..... | ..... | 59 | 15.0 | 59 | W | ..... | ..... | 3–6 | ..... | 5 | ..... | N;W | ..... | ..... | Light | W | Squally..... | |
| Ashuelot, Hong-Kong, China. ...*. | 29.94‡ | 760.5‡ | ..... | ..... | 67 | 19.4 | 79 | E | ..... | ..... | 4 | ..... | 8 | ..... | W | ..... | ..... | Smooth | ..... | Fair ..... | |
| Canonicus, New Orleans, La. ....*. | 29.79 | 756.7 | 48 | 8.9 | 63 | 17.2 | 94 | NW | ..... | ..... | 3 | ..... | 5 | ..... | NW | ..... | ..... | ..... | ..... | Fair..... | |
| Colorado, New York, N. Y..... | 29.55 | 758.2 | 44 | 6.7 | 42 | 5.6 | 100 | NE | 10 | 4.5 | ..... | ..... | 10 | ..... | NE | 0.025 | 0.64 | ..... | ..... | Raining..... | |
| Constitution N. 31° 60′, W. 16° 53′..... | 30.34‡ | 770.6‡ | ..... | ..... | 67 | 19.4 | 84 | N | ..... | ..... | 1 | ..... | 1 | ..... | Calm | ..... | ..... | Smooth | NNE | Pleasant..... | |
| Despatch, Genoa, Italy..... | 29.40‡ | 746.7‡ | ..... | ..... | 60 | 15.6 | 60 | N | ..... | ..... | 2 | ..... | 8 | ..... | NW | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Essex, Maldonado, Uruguay.. | 29.90 | 759.4 | 67 | 19.4 | 64 | 17.8 | 100 | SE | ..... | ..... | 6–8 | ..... | 10 | ..... | ..... | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Franklin, Norfolk, Va.....*. | 29.92 | 760.0 | 67 | 19.4 | 62 | 16.7 | 88 | SSE | 7 | 3.1 | ..... | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy ..... | |
| Gettysburg, Genoa, Italy .....*. | 30.33‡ | 770.4‡ | ..... | ..... | 62 | 16.7 | 72 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.7 | 18. | Smooth | S | Overcast..... | |
| Hartford, Buenos Ayres, S. A.....*. | 29.99 | 761.7 | 67 | 19.4 | 68 | 20.0 | 94 | SE | ..... | ..... | 6 | ..... | 10 | ..... | SE | 0.25 | 6.3 | Rough | SE | Cloudy..... | |
| Michigan, Erie, Pa.....†. | 29.89‡ | 759.2‡ | ..... | ..... | 36 | 2.2 | 90 | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Monocacy, Shanghai, China.....*. | 30.12‡ | 765.0‡ | ..... | ..... | 53 | 11.7 | 86 | SSE | ..... | ..... | 4 | ..... | 2 | ..... | SSE | ..... | ..... | ..... | ..... | Fair ..... | |
| Monongahela N. 30° 07′. E 143° 05′.....*. | 30.11‡ | 764.8‡ | ..... | ..... | 64 | 17.8 | 78 | ENE | .... | ..... | 5–6 | ..... | k | ..... | ENE | 0 | 0 | Light | E | Squally..... | |
| New Hampshire, Port Royal, S. C.....*. | 29.75 | 755.6 | 65 | 18.3 | 64 | 17.8 | 100 | NW | 47 | 21.0 | ..... | ..... | 10 | ..... | NW | 2. | 51. | ..... | ..... | Rain & hail. | |
| Onward, Callao, Peru.....†*. | 30.03 | 762.8 | ..... | ..... | 63 | 17.2 | 94 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Foggy ..... | |
| Palos, Tientsin, China.....*. | 29.89 | 759.2 | 69 | 20.6 | 60 | 15.6 | 50 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 46 | 7.8 | 92 | NE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Pensacola. Iquique, Peru..... | 29.99‡ | 761.7‡ | ..... | ..... | 64 | 17.8 | 83 | SSE | 3 | 1.3 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | SSW | Fair ..... | |
| Plymouth. Portsmouth, N. H ..... | 29.95‡ | 761.5‡ | ..... | ..... | 41 | 5.0 | 68 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Powhattan, Norfolk, Va..... | 29.71‡ | 754.6‡ | ..... | ..... | 61 | 16.1 | 88 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.075 | 1.91 | ..... | ..... | Cloudy . ..... | |
| Quinnebaug, Algiers, Algeria..... | 30.06‡ | 763.5‡ | ..... | ..... | 65 | 18.3 | 84 | W | ..... | ..... | 5 | ..... | 2 | ..... | W | ..... | ..... | ..... | ..... | Fair .... ..... | |
| Ranger. Amoy, China.....*. | 29.98‡ | 761.5‡ | ..... | ..... | 63 | 17.2 | 83 | ENE | ..... | ..... | 4 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy?..... | |
| Richmond. Pt. de Galle, Ceylon .... | 29.79‡ | 756.7‡ | ..... | ..... | 85 | 29.4 | 87 | W | ..... | ..... | 1–2 | ..... | 2 | ..... | W | 0 | 0 | Ground | W | Clear. ..... | |
| Rio Bravo, Brownsville, Texas..... | 30.07 | 763.8 | 63 | 17.2 | 62 | 16.7 | 66 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Sarpee, Annapolis, Md... ..... | 29.77‡ | 756.1‡ | ..... | ..... | 45 | 7.2 | 100 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.11 | 2.8 | ..... | ..... | Foggy ..... | |
| Saratoga, N. 38° 09′, W. 29° 50′..... | 30.15‡ | 765.8‡ | ..... | ..... | 64 | 17.8 | 94 | WSW | ..... | ..... | 5 | ..... | 2 | ..... | NE | 0 | 0 | Mod'ate | W | Misty..... | |
| St. Louis, League Island, Pa ..... | 29.78 | 756.4 | 65 | 18.3 | 52 | 11.1 | 79 | NE | 8 | 3.6 | ..... | ..... | 10 | ..... | NE | 0.25 | 6.3 | ..... | ..... | Misty..... | |
| Supply, New York, N. Y..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Trenton Villefranche, France..*. | 29.37‡ | 746.0‡ | ..... | ..... | 68 | 20.0 | 51 | SE | ..... | ..... | 1–2 | ..... | 0 | ..... | ..... | 0 | 0 | Mod'ate | S | Clear..... | |
| Tuscarora. Acapulco, Mexico.....*. | 29.85‡ | 758.2‡ | ..... | ..... | 75 | 23.9 | 77 | Calm | ..... | ..... | 0 | ..... | 9 | ..... | ..... | 0 | 0 | Smooth | ..... | Pleasant..... | |
| Vandalia Norfolk, Va... ..... ....†. | 29.71‡ | 754.6‡ | ..... | ..... | 62 | 16.7 | 94 | ESE | ..... | ..... | 1 | ..... | 10 | ..... | ESE | ..... | ..... | Smooth | ..... | Foggy ..... | |
| Wabash, Boston, Mass..... | 30.07‡ | 763.8‡ | ..... | ..... | 40 | 4.4 | 83 | NE | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rainy ..... | |
| Wyoming, Beirut, Syria... ..... ..*. | 29.85‡ | 758.2‡ | ..... | ..... | 78 | 25.6 | 73 | NW | ..... | ..... | 0–1 | ..... | 2 | ..... | NW | ..... | ..... | Smooth | NW | Clear..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Upper. | Low'r. | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | |
| §S. S. City of Tokio Capt. Maury N. 34° 37′, E. 178° 42′ | | 30.43‡ | 772.9‡ | 61 | 16.1 | | SW | | | 4 | | 10 | | | | Mod'ate | SW | Drizzling | L. B. Walls. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota, Capt. H. G. Morse, | | | | | | | | | | | | | | | | | | | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly |
| S. S. Granada, Capt. Austin. | | | | | | | | | | | | | | | | | | | F. W. Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, Sydney, N. S. W. | | 30.35‡ | 770.9‡ | | | | S | | | 1 | | 0 | | | | | | Fine | R. C. Ghest, 1st Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. §The date of the S. S. City of Tokio is uncertain, and may be in error one day. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. R. Glendell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer. | | | | | | | | | | | | | | | | | | | J. A. Thompson, 2d Offr |
| S. S. Gaelic, N. 44° 53′, E. 178° 50′ | * | 29.78‡ | 756.4‡ | 44 | 6.7 | | W | | | 6 | | k | | W | 0 | High | W | D. clouds | Capt. W. H. Kidley. |
| S. S. Oceanic, Capt. J. Metcalf, N. 30° 50′, E. 129° 50′ | | 30.09‡ | 764.3‡ | 67 | 19.4 | 95 | SSE | | | 3 | | 4 | | S | | Smooth | | D. clouds | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:36 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the co-operation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 49° 46′, W. 8° 20′ | | 29.82‡ | 757.4‡ | 56.0? | 13.3? | 87 | E | | | 1 | | 2 | | E | 14hours | Smooth | E | Clear | Capt. C. Undütsch. |
| S. S. Leipzig, N. 38° 29′, W. 71° 57′ | | 29.81‡ | 757.2‡ | 58.0 | 14.4 | ?? | Calm | | | 1? | | 8 | | | 1 hour | Mod'ate | WSW | Hazy | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, Capt. G. Meyer, Baltimore, Md. | | 29.76‡ | 755.9‡ | | | | E | | | 4 | | 10 | | E | | | | Light rain | G. Risius, 3rd Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

| NAMES OF VESSELS. | True course toward. | Barometer reduced to sea-level. Inches. | Barometer reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upper 0—10. | Clouds. Amount. Lower 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. | Sea-swell. Character. | Sea-swell. Direction From— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AMERICAN S. S. CO. MARINE SERIES.** Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N 42° 22′, W. 48° 25′ | ..... | 29.86‡ | 758.4‡ | 40 | 4.4 | ..... | N | ..... | ..... | 6 | ..... | 7 | ..... | N | Heavy | Mod'ate | ..... | Cloudy | Captain Sargent. Wm. Shackford, Chief Officer. |
| S. S. Ohio | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. H. Dodge. |
| S. S. Pennsylvania, Capt. Harris | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
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| S. S. Nederland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Randle. |
| S. S. Switzerland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jackson. |
| S. S. Vaderland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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| S. S. Austrian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Richardson. |
| S. S. Hibernian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Powell, 4th Officer. |
| S. S. Peruvian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
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| **MARINE SERIES. (Miscellaneous.)** Furnished by the co-operation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. James Jorgensen. |
| Brigantine "George, of Halifax" | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Willard N. Pratt. |
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Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud-direction as toward instead of from; sea-swell in general terms, as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Anéroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

Note.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively by the letters c, k, s, n, d, f, p, hz., fg. and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING Co 220 DEVONSHIRE ST BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 18, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer, corrected for instrum'tal error and temperature. Inches. | Barometer, corrected for instrum'tal error and temperature. Millimeters. | Barometer, reduced to sea-level. Inches. | Barometer, reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Morocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 30.18 | 766.6 | 65.8 | 18.8 | 78 | WNW | | | 1 | | 5 | | | 0 | 0 | Cloudy | Kesxuche. |
| Algiers | | | 30.04 | 762.9 | 64.4 | 18.0 | 56 | W | | | 5 | | 0 | | | 0 | 0 | Clear | Tourillere. |
| La Calle | | | 30.05 | 763.2 | 65.3 | 18.5 | 72 | NW | | | 3 | | 5 | | | 0 | 0 | Cloudy | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 30.16 | 766.0 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 30.09 | 764.2 | 58.6 | 14.8 | 45 | NW | | | 2 | | 8 | | | 0 | 0 | Very cloudy | Herbin. |
| Tebessa | | | 30.11 | 764.9 | 58.6 | 14.8 | 81 | W | | | 4 | | 5 | | | 0 | 0 | Cloudy | Watrin. |
| Geriville | | | 30.18 | 766.6 | 59.5 | 15.3 | 45 | N | | | 4 | | 5 | | | 0 | 0 | Cloudy | Brugnlaux. |
| Laghouat | | | 30.13 | 765.3 | 65.1 | 18.4 | 81 | NE | | | 2 | | 2 | | | 0 | 0 | Fair | Bertrand. |
| Biskra | | | 30.14 | 765.6 | 72.0 | 22.2 | 23 | WNW | | | 2 | | 2 | | | 0 | 0 | Fair | Chanvaux. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—In the originals the amount of cloudiness is given by the scale 0-4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.06 | 738.2 | 29.61 | 752.1 | 50.0 | 10.0 | 69 | NW | | | 5 | | 9 | | | 0.024 | 0.6 | | Prof. Ivan Stozir. |
| Cracow, I.R. Observatory | 28.67 | 728.1 | 29.42 | 747.2 | 53.6 | 12.0 | 43 | SW | | | 4 | | 5 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 28.58 | 726.0 | 29.41 | 747.8 | 56.8 | 13.8 | 51 | S | | | 5 | | 5cs | | N | | | | Julius Mikolik. |
| Gratz | 28.30 | 718.7 | 29.52 | 749.9 | 55.2 | 12.9 | 51 | SW | | | 3 | | 7 | | | 0.197 | 5.0 | | Andreas Rospini. |
| Hermannstadt | 28.23 | 717.0 | 29.61 | 752.1 | 62.6 | 17.0 | 38 | SSW | | | 3 | | 6 | | | 0 | 0 | | Prof. A. Gottschling. |
| Kremsmünster | 28.27 | 718.1 | 29.63 | 752.7 | 30.7 | 4.3 | 30 | WNW | | | 4 | | 10 | | | 0.701 | 17.8 | | Prof. C. Wagner. |
| Lemberg | 28.48 | 723.4 | 29.46 | 748.0 | 55.8 | 13.2 | 52 | SW | | | 5 | | 5 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 29.52 | 749.7 | 29.63 | 752.5 | 56.1 | 13.4 | 77 | S | | | 4 | | 10 | | | 0.150 | 3.8 | | I.R.Hydrographic Office |
| Szathmar | 29.21 | 741.9 | 29.67 | 753.6 | 56.5 | 13.6 | 57 | S | | | 4 | | 10 | | | 0.433 | 11.0 | | Julius Csics, S. J. |
| Szegedin | 29.31 | 744.5 | 29.58 | 751.4 | 65.7 | 18.7 | 75 | S | | | 4 | | 8 | | | 0.102 | 2.60 | | Karl Stancel. |
| Trieste | 29.52 | 749.7 | 29.62 | 752.3 | 57.2 | 14.0 | 86 | W | | | 1 | | 4 | | | 1.555 | 39.5 | | P. Busin. |
| Vienna | 28.84 | 732.6 | 29.57 | 751.0 | 43.0 | 6.6 | 70 | WSW | | | 5 | | 10 | | | 0.224 | 5 7 | | I. R. Central Met. Obs'y |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.02 | 752.3 | 29.83 | 757.6 | 40.8 | 4.9 | 85 | WNW | | | 1 | | 10 | | NW | 0.037 | 0.95 | | Royal Observatory. |
| Furnes | 29.85 | 758.3 | 29.88 | 758.9 | 42.1 | 5.6 | 83 | NW | | | 5 | | 8 | | | 0.047 | 1.2 | Raining | M. E. de Cae. |
| Maeseyck | 29.67 | 753.7 | 29.80 | 756.9 | 46.0 | 7.8 | 78 | NW | | | 2 | | 10 | | | 0.024 | 0.6 | | M. Pierrot. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

**Entered at the Post Office at Washington, D. C., as Second-Class Matter.**

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.88 | 758.9 | 29.98 | 761.5 | 41.6 | 5.3 | ..... | E | 13 | 5.8 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Blue sky..... | W. Boswell. |
| Ardrossan | 29.91 | 759.7 | 29.92 | 760.0 | 50 | 10.0 | ..... | SSE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.91 | 759.7 | 47.2 | 8.4 | ..... | SE | 16 | 7.2 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.92 | 760.0 | 47 | 8.3 | ..... | NNW | 9 | 4.0 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.93 | 760.2 | 43.9 | 6.6 | ..... | ENE | 6 | 2.7 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | Thomas Mackereth. |
| Bradford, Yorkshire | 29.54 | 750.3 | 29.94 | 760.5 | 42.7 | 5.9 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.96 | 761.0 | 29.99 | 761.7 | 84 | 28.9 | ..... | SE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.91 | 759.7 | 45.0 | 7.2 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. Todd. [C. |
| Cardington | ..... | ..... | 29.89 | 759.2 | 47.0 | 8.3 | ..... | N | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E. | 29.77 | 756.1 | 29.90 | 759.4 | 43.0 | 6.1 | ..... | NW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | Blank | Blank | Overcast..... | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.49 | 723.6 | 29.98 | 761.5 | 44.6 | 7.0 | ..... | SE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | Gloomy ..... | Alexander Watt. |
| Donaghadee | 29.89 | 759.2 | 29.93 | 760.2 | 46 | 7.8 | ..... | SSE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | J. Mac Gowan. |
| Dover | 29.85 | 758.2 | 29.88 | 758.9 | 41 | 5.0 | ..... | N | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | Showery..... | J. Costello. |
| Falmouth, Observatory | 29.69 | 754.1 | 29.92 | 760.0 | 47.0 | 8.3 | ..... | SSE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Fort Napier, (Natal) | 27.62 | 701.5 | 29.92 | 760.0 | 82.0 | 27.8 | ..... | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.70 | 754.4 | 29.92 | 760.0 | 87 | 30.6 | ..... | E | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | |
| Galway, Queen's college | ..... | ..... | ..... | ..... | 55.5 | 13.1 | ..... | SSE | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 30.12 | 765.0 | 30.17 | 766.3 | 62.8 | 17.1 | ..... | W | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.74 | 755.4 | 29.95 | 760.7 | 43.8 | 6.6 | ..... | E | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | D. G. Maclean. [C. |
| Great Yarmouth | 29.86 | 758.4 | 29.87 | 758.7 | 42 | 5.6 | ..... | N | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.73 | 755.1 | 29.91 | 759.7 | 45.7 | 7.6 | ..... | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The staff, for G.B. Airy |
| Guernsey | 29.71 | 754.6 | 29.94 | 760.5 | 46.5 | 8.1 | ..... | NW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | Dr. S.E. Hoskins, F.R.S |
| Helston | 30.00 | 762.0 | 30.12 | 765.0 | 50 | 10.0 | ..... | NW | ..... | ..... | 2 | ..... | 2c | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 29.87 | 758.7 | 29.92 | 760.0 | 48 | 8.9 | ..... | SSE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 29.66 | 753.4 | 29.96 | 761.0 | 48.0 | 8.9 | ..... | WSW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds.... | J. Fisher. |
| Kew, Observatory | 29.88 | 758.9 | 29.91 | 759.7 | 45.0 | 7.2 | ..... | N | 12 | 5.4 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy..... | The Meteorological Of. |
| Leicester, Museum | 29.67 | 753.6 | 29.93 | 760.2 | 44.8 | 7.1 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranean | 30.00 | 762.0 | 30.08 | 764.0 | 67 | 19.4 | ..... | SW | ..... | ..... | 1 | ..... | 3k | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.87 | 758.7 | 29.96 | 761.0 | 45 | 7.2 | ..... | ENE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded.... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 29.90 | 759.4 | 81.2 | 27.3 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.75 | 755.6 | 29.94 | 760.5 | 43.7 | 6.5 | ..... | NW | ..... | ..... | 1 | ..... | 10k;d | ..... | NNE | 0 | 0 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.39 | 746.5 | 29.92 | 760.0 | 46.1 | 7.8 | ..... | NNE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.91 | 759.7 | 47 | 8.3 | ..... | N | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | H. E. Bellamy. |
| Plymouth | 29.83 | 757.7 | 29.90 | 759.4 | 50.1 | 10.1 | ..... | S | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | John Merrifield. |
| Roche's Point | 29.80 | 756.9 | 29.88 | 758.9 | 50 | 10.0 | ..... | S | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | ⅗ clouded.. | Wm. Kennedy. |
| Saint Ann's Head | 29.73 | 755.1 | 29.89 | 759.2 | 47 | 8.3 | ..... | SE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Misty..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 41.9 | 5.5 | ..... | NW | 8 | 3.6 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds.... | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.55 | 768.2 | 29.92 | 760.0 | 68.0 | 20.0 | ..... | WSW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | W. H. Lyne. |
| Sheffield | 29.67 | 753.6 | 29.95 | 760.7 | 43.0 | 6.1 | ..... | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Inap. | Inap. | Overcast..... | W. F. Cooper. |
| Silloth Rectory | 29.92 | 760.0 | 29.95 | 760.7 | 50.0 | 10.0 | 69 | E | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | D. clouds.... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.54 | 750.3 | 29.94 | 760.5 | 46.3 | 7.9 | ..... | NE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.70 | 754.4 | 29.92 | 760.0 | 49.7 | 9.8 | ..... | NE | ..... | ..... | 2-3 | ..... | 4 | ..... | ..... | ..... | ..... | Squally..... | C. H. Griffith, F. M. S. |
| Thurso | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John Trotter. |
| Truro, Royal Institution | 29.88 | 758.9 | 29.93 | 760.2 | 55 | 12.8 | ..... | SE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | ..... | |
| Valencia, Observatory | 29.71 | 754.6 | 29.73 | 755.1 | 51.7 | 10.9 | ..... | SE | 36 | 16.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds.... | W. Newcombe. |
| Sub-Series. | | | | | | | | | | | | | | | | | | Squally..... | The Meteorological Of. |
| Cape of Good Hope Obs'y | 30.06 | 763.5 | 30.10 | 764.5 | 66.5 | 19.2 | 49 | SW | 9 | 4.0 | ..... | 6 | 6 | ..... | ..... | 0.122 | 3.10 | Raining ..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.90 | 759.4 | 65 | 18.3 | 55 | SW | ..... | ..... | 3 | ..... | 7k | ..... | ..... | 0 | 0 | Fine..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 30.01 | 762.2 | 45.0 | 7.2 | ..... | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Fine..... | Andrew Gibb. |
| Mauritius, Observatory | 29.94 | 760.5 | 30.13 | 765.3 | 77.2 | 25.1 | 71 | E | 19.5 | 8.7 | ..... | 6 | 3 | ..... | ..... | 0.01 | 0.2 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 30.26 | 768.6 | 30.35 | 770.9 | 57.0 | 13.9 | 80 | E | 0 | 0 | ..... | ..... | 4* | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| MonachLt-house, (Hebrides) | ..... | ..... | 29.89 | 759.2 | 44 | 6.7 | ..... | SE | ..... | ..... | 6 | 0 | 0 | ..... | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.91 | 759.7 | 41 | 5.0 | ..... | NW | ..... | ..... | 4 | 2 | 6 | NW | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

## British Marine Series.

| Vessels | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 42', E. 29° 25' | ..... | ..... | 29.94‡ | 760.5‡ | 68.1 | 20.1 | ..... | WNW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Misty..... | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| Barque Belle-Isle, Off Start Point, England | ..... | ..... | 29.91‡ | 759.7‡ | ..... | ..... | ..... | Calm | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. J. Brown. |
| —— City of Agra | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Thorne. |
| Barque Commewyne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturoance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have generally been carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.26 | 667.0 | 29.98 | 761.5 | 70.2 | 21.2 | 89 | NE | ..... | ..... | 1 | 1c | 7ks | ..... | E | Inap. | Inap. | ..... | Federico Maison |

NOTE.—For St. Jose the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches for an altitude of 1,145 meters, or 3,756.6 feet; the distinction between the upper and lower clouds is not always made; the rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.37 | 746.0 | 29.42 | 747.2 | 34.5 | 1.4 | 96 | N | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Rain & snow | |
| Fanöe | 29.63 | 752.5 | 29.65 | 753.0 | 46.2 | 7.9 | 45 | N | ..... | ..... | 6 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.35 | 745.4 | 29.39 | 746.5 | 31.1 | — 0.5 | 86 | NE | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Faröe) | 29.95 | 760.8 | 29.99 | 761.7 | 45.0 | 7.2 | 60 | SE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | |
| Vestervig | 29.53 | 750.0 | 29.70 | 754.3 | 40.6 | 4.8 | 84 | N | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.39 | 746.5 | 29.94 | 760.5 | 48.9 | 9.4 | 69 | NE | ..... | ..... | 1 | ..... | 5 | ..... | N | 0 | 0 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 29.72 | 754.8 | 29.83 | 757.6 | 55.4 | 13.0 | 82 | W | ..... | ..... | 1 | ..... | 2 | ..... | E | 0.055 | 1.4 | Slightly cl'dy | Bonvallet, Director |
| Avignon, Normal School | 29.79 | 756.6 | 29.87 | 758.6 | 55.4 | 13 | 48 | N | ..... | ..... | 2 | ..... | 2 | ..... | N | 0 | 0 | Partly cl'dy | M. Giraud, Director |
| Bar-sur-Seine | 29.31 | 744.5 | 29.87 | 758.8 | 47.7 | 8.7 | 51 | NNE | ..... | ..... | 1 | ..... | 8kn | ..... | N | 0 | 0 | Very cloudy | O. Saillard, Director. |
| Beauvais, Normal School | 29.61 | 752.0 | 29.87 | 758.8 | 48.2 | 9.0 | 46 | NW | ..... | ..... | ..... | ..... | 8 | ..... | NW | 0.098 | 0.25 | Very cloudy | Frere Eugene Marie, Dr |
| Besançon, Normal School | 29.01 | 736.8 | 29.93 | 760.1 | 41.4 | 5.2 | 81 | SW | ..... | ..... | 2 | ..... | 5 | ..... | W | 0.213 | 5.4 | Cloudy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.99 | 736.4 | 29.90 | 759.4 | 46.2 | 7.9 | 70 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0.441 | 11.2 | Clear. | M. Marlot, Director. |
| Bourges, Normal School | 29.26 | 743.2 | 29.82 | 757.3 | 49.3 | 9.6 | 79 | NW | ..... | ..... | 2 | ..... | ck | NE | NW | 0.04 | 1. | ..... | A. Waquet, Director |
| Brest, Naval Observatory | 29.22 | 742.1 | 29.85 | 758.3 | 56.5 | 13.6 | 68 | S | ..... | ..... | 2 | ..... | 9 | ..... | S | 0 | 0 | ..... | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.47 | 748.6 | 29.89 | 759.1 | 56.5 | 13.6 | 47 | W | ..... | ..... | 2 | ..... | 5 | W | W | 0.457 | 11.6 | Cloudy | September, Director. |
| Caen, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Lair, Director. |
| Chartres, Normal School | 29.32 | 744.7 | 29.90 | 759.4 | 42.8 | 6 | 94 | NW | ..... | ..... | 1 | ..... | 10 | ..... | NW | 0.12 | 3. | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.53 | 750.1 | 29.85 | 758.3 | 45.5 | 7.5 | 80 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.53 | 724.6 | 29.90 | 759.4 | 47.8 | 8.8 | 40 | NW | ..... | ..... | 2 | ..... | 8 | ..... | N | 0 | 0 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.99 | 736.3 | 29.86 | 758.4 | 42.1 | 5.6 | 66 | NW | ..... | ..... | 1 | ..... | 5ck | ..... | NW | 0.138 | 3.5 | Cloudy | Dr. Coulet, Director |
| Commune de Gréasque* | 28.69 | 728.8 | 29.84 | 757.8 | 50.0 | 10.0 | 35 | NW | ..... | ..... | 4 | ..... | 5 | ..... | NW | 0 | 0 | ½ covered | M. Kina, Director. |
| Grenoble, Normal School | 29.07 | 738.3 | 29.85 | 758.2 | 43.3 | 6.3 | 84 | NW | ..... | ..... | 2 | ..... | 8n | ..... | ..... | 0.138 | 3.50 | Very cloudy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.73 | 755.2 | 29.95 | 760.8 | 54.7 | 12.6 | 63 | WNW | ..... | ..... | 1 | ..... | 5 | ..... | WNW | 0 | 0 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.57 | 751.0 | 29.87 | 758.8 | 54.5 | 12.5 | 48 | SW | ..... | ..... | 1 | ..... | 8 | ..... | W | 0.04 | 1. | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.96 | 735.6 | 29.85 | 758.3 | 44.8 | 7.1 | 71 | SW | ..... | ..... | ..... | ..... | 10 | ..... | SW | 0.047 | 1.20 | Covered | Baudry, Director. |
| Lorient, Naval Observatory | 29.86 | 758.4 | 29.96 | 760.9 | 53.6 | 12.0 | 70 | S | ..... | ..... | 2 | ..... | ..... | ..... | S | 0 | 0 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff |
| Mirecourt, Normal School | 28.74 | 730.0 | 29.80 | 757.0 | 45.7 | 7.6 | 72 | WNW | ..... | ..... | 3 | ..... | 5 | ..... | NW | 0.047 | 1.2 | Cloudy | M. Barbier, Director. |
| Nîmes, Normal School | 29.65 | 753.2 | 29.86 | 758.4 | 54.7 | 12.6 | 35 | N | ..... | ..... | 4 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 28.80 | 731.5 | 29.88 | 759.0 | 46.4 | 8 | 46 | N | ..... | ..... | 3 | ..... | ..... | N | N | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.96 | 634.0 | ..... | ..... | 25.3 | — 3.7 | 100 | W | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.291 | 7.4 | Very cloudy | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.92 | 760.1 | 29.96 | 760 9 | 60.3 | 15.7 | 55 | W | ..... | ..... | 1 | ..... | 5 | W | W | 0 | 0 | ½ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.82 | 757.4 | 29.91 | 759.6 | 50.0 | 10.0 | 45 | NW | ..... | ..... | 1 | ..... | 2 | ..... | NW | 0.051 | 1.3 | Slightly cl'dy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.89 | 759.1 | 29.92 | 759.9 | 50.5 | 10.3 | 53 | NNW | ..... | ..... | 2 | ..... | 1 | ..... | NNW | 0 | 0 | Clear. | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.72 | 755.0 | 29.89 | 759.2 | 50.0 | 10.0 | 56 | NW | ..... | ..... | 1 | ..... | ..... | ..... | W | 0 | 0 | ..... | E. Reaou, Director. |
| Tarbes, Normal School | 29.00 | 736.5 | 30.08 | 763.9 | 50.0 | 10 | 50 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.31 | 8. | Raining | T. Huguet, Director. |
| Toulouse, Observatory | 29.27 | 743.4 | 29.99 | 761.7 | 52.5 | 11.4 | 63 | NW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | M. Mercadier Julier. |
| Versailles Observatory | 29.39 | 746.6 | 29.89 | 759.1 | 46.0 | 7.8 | 51 | N | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.88 | 759.0 | 29.91 | 759.7 | 78.8 | 26 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.12 | 3. | ..... | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 29.24 | 742.7 | 29.91 | 759.6 | 45.3 | 7.4 | 61 | NE | ..... | ..... | 4 | ..... | 7 | ..... | N | 0.071 | 1.8 | Showery | Mr. Jays. |
| Mont-Louis | 24.67 | 626.6 | 29.98 | 761.6 | 39.2 | 4.0 | 60 | NW | 15.0 | 6.7 | ..... | ..... | 8 | ..... | W | 0.532 | 13.5 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.61 | 752.2 | 60.1 | 15.6 | 47 | W | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | Covered | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.60 | 751.9 | ..... | ..... | 47.7 | 8.7 | 49 | NW | ..... | ..... | 3 | ..... | 8 | ..... | NW | 0.091 | 2.3 | ..... | Marié Davy, Director. |
| Perpignan | 29.82 | 757.3 | 29.92 | 760.0 | 56.1 | 13.4 | 37 | NE | 20.6 | 9.2 | ..... | ..... | 2 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.32 | 567.0 | ..... | ..... | 30.6 | — 0.8 | ..... | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.259 | 6.87 | Snowy | Gen'l de Nansouty. |
| Tours | 29.72 | 754.8 | 29.91 | 759.8 | 53.6 | 12.0 | 52 | NW | ..... | ..... | 2 | ..... | 5 | ..... | NNW | 0 | 0 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 29.76 | 755.8 | 29.78 | 756.5 | 60.4 | 15.8 | 97 | SE | 16.8 | 7.5 | ..... | ..... | 10n | ..... | ..... | 0.441 | 11.2 | Raining | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand, Nice and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:66 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Gréasque, 322 m, or 1,056.4 ft.; Puy de Dome—(Summit) 1.467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,438.2 ft.; Pic du Midi. (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135.0 millimeters or 5 315 inches has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.76 | 730.6 | 29.60 | 751.7 | 38.3 | 3.5 | 90 | W | | | 6 | | 10 | W | | 0.197 | 5.0 | Rain & Snow | Prof. Dr. Hoh. |
| Berlin | 29.22 | 742.2 | 29.39 | 746.6 | 38.1 | 3.4 | 83 | N | | | 2 | | 10 | | | 0.795 | 20.2 | Snowing | Prof. Arndt. |
| Breslau | 28.88 | 733.6 | 29.40 | 746.8 | 42.1 | 5.6 | 70 | WSW | | | 3 | | 10 | WSW | | 0.085 | 2.14 | | Royal University Obs'y |
| Carlsruhe | 29.35 | 745.5 | 29.78 | 756.4 | 46.4 | 8.0 | 59 | W | | | 2 | | 10 | W | | 0 | 0 | | Albert Senz. |
| Cassel | 29.06 | 738.1 | 29.66 | 753.4 | 42.4 | 5.8 | 76 | WNW | | | 6 | | 10 | W | | 0.536 | 13.63 | Raining | Dr. H. Möhl. |
| Crefeld | 29.58 | 751.4 | 29.74 | 755.5 | 46.6 | 8.1 | 63 | NW | | | 5 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.38 | 746.3 | 29.75 | 755.6 | 45.1 | 7.3 | | W | | | 2 | | 10 | | | 0.295 | 7.5 | | Physical Society. |
| Freienwalde on the Oder | 29.31 | 744.4 | 29.35 | 745.4 | 36.1 | 2.3 | 99 | NW | | | 5 | | 10ks | | | 0.874 | 22.2 | | Assmann., M. D. |
| Friedrichshafen | 28.35 | 720.0 | 29.80 | 756.8 | 44.6 | 7.0 | 78 | SW | | | 7 | | 10 | SW | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.52 | 749.7 | 29.59 | 751.5 | 41.7 | 5.4 | 59 | NNW | | | 4 | | 10 | | | 0 | 0 | | Captain F. Hegeman. |
| Kiel | 29.56 | 750.7 | 29.57 | 751.1 | 40.8 | 4.9 | 60 | NNW | | | 6 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.10 | 739.2 | 29.18 | 741.2 | 63.5 | 17.5 | 65 | SE | | | 6 | | 6 | | | 0.024 | 0.6 | | Prof. E. Luther. |
| Köslin | | | 29.17 | 740.9 | 35.8 | 2.1 | | NE | | | 2 | | 5 | | | 1.772 | 45.0 | | H. Müller. |
| Leipsic, Observatory | 29.09 | 738.9 | 29.52 | 749.9 | 34.5 | 1.4 | 93 | WNW | | | 4 | | 10 | WNW | | 0.720 | 18.3 | Snowing | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.17 | 740.8 | 29.21 | 741.9 | 63.1 | 17.3 | 66 | SE | | | 3 | | 10ks | | | | | Showery | Skalweit. |
| Neufahrwasser | 29.18 | 741.2 | 29.20 | 741.6 | 39.7 | 4.3 | 97 | NW | | | 1 | | 10 | | | 0.083 | 2.2 | Foggy | A. Lothes. |
| Posen | 29.01 | 736.9 | 29.30 | 744.3 | 41.5 | 5.3 | 85 | SW | | | 6 | | 10 | | | 0.098 | 2.5 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.28 | 743.8 | 29.84 | 758.0 | 45.1 | 7.3 | 59 | NW | | | 3 | | 10 | NW | | 0.186 | 4.73 | | Imp. University Observatory. |
| Stuttgart | 28.78 | 731.1 | 29.74 | 755.3 | 42.4 | 5.8 | 73 | W | | | 1 | | 10 | | | 0.094 | 2.4 | | Prof. Schoder. |
| Treves (Trier) | 29.26 | 743.1 | 29.78 | 756.3 | 45.1 | 7.3 | 58 | NW | | | 5 | | 10 | | | 0.002 | 0.05 | | Prof. Flesch. |
| Weissenburg (Bavaria) | 28.18 | 715.8 | 29.72 | 754.9 | 38.1 | 3.4 | 82 | WNW | 29 | 13 | | | 10 | | WNW | 0.610 | 15.5 | Foggy | Dr. Van Bebber. |
| Wustrow, Naval School | 29.38 | 746.3 | 29.41 | 746.9 | 32.9 | 0.5 | 100 | N | | | 6 | | 10n | | | 0.122 | 3.1 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.63 | 752.6 | 30.01 | 762.3 | 68.4 | 20.2 | | SW | | | 2.5 | | | | | | | Misty | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.68 | 753.8 | 29.73 | 755.0 | 85.5 | 29.7 | 58 | SSW | 11 | 4.9 | | | 1 | | | 0 | 0 | D. clouds | |
| Deesa | 29.23 | 742.5 | 29.69 | 754.1 | 99.8 | 37.7 | 6 | SW | 6.1 | 2.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.77 | 756.1 | 29.81 | 757.1 | 84.3 | 29.1 | 61 | W | 9 | 4.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.82 | 706.5 | 29.76 | 756.0 | 92.3 | 33.5 | 16 | WNW | | | | | 0 | | | 0 | 0 | Sultry | |
| Lahore | 28.86 | 733.1 | 29.57 | 751.1 | 100.2 | 37.9 | 17 | E | 1.4 | 0.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.26 | 692.5 | 29.76 | 755.9 | 83.4 | 28.6 | 81 | W | 27 | 12.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Roorkee | 28.73 | 729.7 | 29.59 | 751.6 | 96.5 | 35.8 | 10 | NW | | | | | | | | 0 | 0 | | |
| Agra | 29.09 | 739.0 | 29.64 | 752.7 | 99.6 | 37.6 | 17 | W | | | | | 7 | | W | 0 | 0 | | |
| Nagpur | 28.65 | 727.7 | 29.65 | 753.2 | 98.5 | 36.9 | 9 | Calm | 1.9 | 0.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.28 | 743.8 | 29.65 | 753.1 | 95.3 | 35.2 | 35 | NNW | 1.7 | 0.8 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.35 | 745.4 | 29.65 | 753.1 | 98.1 | 36.7 | 16 | Calm | 1.9 | 0.8 | | | 0 | | | 0 | 0 | | |
| Patna | 29.46 | 748.2 | 29.63 | 752.6 | 94.5 | 34.7 | 21 | Calm | 0.2 | 0.1 | | | 2 | W | W | 0 | 0 | | |
| Hazaribagh | 27.70 | 705.5 | 29.65 | 753.0 | 91.8 | 33.2 | 16 | NW | 6.6 | 3.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.62 | 752.3 | 29.70 | 754.3 | 89.4 | 31.9 | 61 | S | 7 | 3.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.66 | 753.5 | 29.69 | 754.0 | 87.2 | 30.7 | 65 | SSW | 7.0 | 3.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.27 | 743.3 | 29.64 | 752.9 | 90.8 | 32.7 | 39 | Calm | 4.0 | 1.8 | | | 0 | | | 0 | 0 | Misty | |
| Chittagong | 29.69 | 754.2 | 29.78 | 756.5 | 85.6 | 29.8 | 80 | SSW | 7.5 | 3.4 | | | 1 | | | 0 | 0 | D. clouds | |
| Sibsagar | 29.37 | 745.9 | 29.70 | 754.4 | 82.2 | 27.9 | 59 | NE | 3.2 | 1.4 | | | 8 | W | W | 0 | 0 | Blue sky | |
| Jubbulpore | 28.34 | 719.8 | 29.66 | 753.4 | 95.4 | 35.2 | 14 | Calm | 2.3 | 1.0 | | | 0 | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,060.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the cooperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.19 | 741.4 | 29.60 | 751.8 | 57.9 | 14.4 | 63 | S | 1.8 | 0.8 | ..... | ..... | 9 | ..... | ..... | 0.591 | 15.0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.04 | 737.5 | 29.55 | 750.6 | 58.6 | 14.8 | 33 | E | ..... | ..... | 4 | ..... | 8 | SE | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.48 | 748.8 | 29.59 | 751.6 | 56.5 | 13.6 | 64 | SE | 9.8 | 4.4 | ..... | ..... | 5 | ..... | ..... | 0.035 | 0.9 | ..... | Prof. Dott. Lorenzoni |
| Moncalieri | 28.68 | 728.4 | 29.58 | 751.3 | 56.3 | 13.5 | 43 | WNW | 4.3 | 1.9 | ..... | ..... | 8 | ESE | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Genoa | 29.42 | 747.2 | 29.61 | 752.0 | 55.4 | 13.0 | 47 | NE | 4.9 | 2.2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Mondovi | 27.71 | 703.9 | 29.62 | 752.4 | 52.3 | 11.3 | 20 | NW | ..... | ..... | 2 | ..... | 5 | ESE | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Pesaro | 29.59 | 751.5 | 29.63 | 752.7 | 53.6 | 12.0 | 88 | SW | 8.1 | 3.6 | ..... | ..... | 10 | ..... | ..... | 0.094 | 2.4 | ..... | Cav. F. Meucci |
| Florence | 29.40 | 746.7 | 29.65 | 753.2 | 50.5 | 10.3 | 73 | W | ..... | ..... | 2 | ..... | 6 | SSW | ..... | 0.559 | 14.2 | ..... | Prof. P. Monte. |
| Leghorn | 29.52 | 749.9 | 29.61 | 752.1 | 56.1 | 13.4 | 61 | SW | ..... | ..... | 8 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari |
| Rome | 29.60 | 751.7 | 29.77 | 756.1 | 59.9 | 15.5 | 58 | W | 28.6 | 12.8 | ..... | ..... | 10 | ..... | ..... | 0.043 | 1.1 | ..... | Prof. C. De Giorgi. |
| Lecce | 29.69 | 754.1 | 29.94 | 760.5 | 63.3 | 17.4 | 49 | W | 19.2 | 8.6 | ..... | ..... | 8 | W | ..... | 0.008 | 0.2 | ..... | Prof. D. Conti. |
| Cosenza | 29.11 | 739.3 | 29.98 | 761.6 | 56.7 | 13.7 | 72 | SW | 1.3 | 0.6 | ..... | ..... | 10 | ..... | ..... | 0.154 | 3.9 | ..... | Prof. A. Pacinotti. |
| Cagliari | 29.67 | 753.7 | 29.87 | 758.6 | 59.7 | 15.4 | 63 | W | ..... | ..... | 4 | ..... | 8 | W | ..... | 0.024 | 0.6 | ..... | Prof. G. Cacciatore. |
| Palermo | 29.72 | 755.0 | 29.98 | 761.4 | 65.1 | 18.4 | 36 | WSW | 18.6 | 8.3 | ..... | ..... | 9 | WSW | ..... | 0.043 | 1.1 | ..... | Prof. V. Giuliano. |
| Syracuse | 29.98 | 761.4 | 30.05 | 763.2 | 66.0 | 18.9 | 32 | WSW | 9.8 | 4.4 | ..... | ..... | 8 | SSE | ..... | 0 | 0 | ..... | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.30 | 744.3 | 29.86 | 758.4 | 55.4 | 13.0 | 89 | SW | 16.1 | 7.2 | ..... | ..... | 10 | ..... | ..... | 0.799 | 20.3 | ..... | Prof. [illegible] Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.13 | 765.3 | 30.15 | 765.8 | 55.2 | 12.9 | 83 | N | 2.5 | 1.1 | ..... | ..... | 2s;ck | ..... | ..... | 0 | 0 | Fair | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.89 | 759.2 | 30.10 | 764.5 | 58.3 | 14.6 | 82 | ..... | 0.4 | 0.2 | ..... | ..... | 4s | ..... | ..... | 0 | 0 | Clear | S. Takehayashi. |
| Tokei (Yeddo) Observatory | 30.19 | 766.8 | 30.25 | 768.3 | 54.6 | 12.6 | 90 | S | 3.5 | 1.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.17 | 639.3 | 30.25 | 768.4 | 53.2 | 11.8 | 41 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | Prof. L. Perez. |
| Leon | 24.56 | 623.8 | 30.27 | 769.0 | 56.1 | 13.4 | 75 | NW | ..... | ..... | 1 | 1c | 0 | NW | ..... | 0 | 0 | Very hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.23 | 590.1 | 30.38 | 771.6 | 48.2 | 9.0 | 78 | NW | 2.2 | 1.0 | ..... | ..... | 10k | ..... | ..... | 0 | 0 | Covered | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 52.3 | 11.3 | 65 | NNW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. V. de Leon, M. E. |
| Tlacotalpam | 30.24 | 768.0 | 30.25 | 768.3 | 73.4 | 23.0 | 67 | N | ..... | ..... | 3 | 1 | 8 | NW | NW | 0 | 0 | Cloudy | M. M. Chazaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | 22.67 | 575.8 | 30.36 | 771.4 | 46.9 | 8.3 | 69 | E | ..... | ..... | 1 | 0 | 2s | ..... | E | 0 | 0 | Light haze | J. Castrillon. |
| Puebla, (Catholic Institute) | 23.52 | 597.4 | 30.28 | 769.2 | 45.3 | 7.4 | 68 | NNE | 2.7 | 1.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.39 | 721.2 | 30.06 | 763.4 | 73.0 | 22.8 | 43 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Fine | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

NOTE.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,566.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; and the instrumental correction —0.88 mm., which has been applied to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.84 | 757.9 | 29.84 | 757.9 | 46.6 | 8.1 | ..... | WNW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.020 | 0.5 | ..... | ..... |
| Groningen | 29.71 | 754.4 | 29.76 | 755.8 | 43.9 | 6.6 | ..... | N | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Helder | 29.79 | 756.6 | 29.78 | 756.6 | 43.2 | 6.2 | ..... | N | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Hellevoetsluis | 29.78 | 756.5 | 29.78 | 756.5 | 46.9 | 8.3 | 72 | NW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Utrecht | 29.75 | 755.6 | 29.80 | 756.8 | 48.4 | 9.1 | 59 | NNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.008 | 0.2 | Very cloudy | H. v. d. Brink |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.79 | 756.7 | 29.85 | 758.1 | 44.2 | 6.8 | 44 | NNW | 15.2 | 6.8 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.80 | 757.0 | 29.84 | 758.0 | 43.5 | 6.4 | 51 | E | 4 | 2 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.56 | 750.8 | 29.70 | 754.5 | 45.7 | 7.6 | 42 | NE | 9 | 4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.88 | 759.0 | 29.93 | 760.1 | 34.9 | 1.6 | 59 | NE | 11 | 5 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.65 | 753.1 | 29.84 | 758.0 | 60.1 | 15.6 | 87 | W | 18.6 | 8.3 | ..... | ..... | 8 | ..... | ..... | 0.846 | 21.5 | ..... ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.07 | 738.4 | 30.10 | 764.6 | 58.8 | 14.9 | 74 | WNW | 7.4 | 3.3 | ..... | ..... | 9 | WSW | ..... | 0.161 | 4.1 | ..... ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.16 | 766.1 | 30.25 | 768.3 | 64.6 | 18.1 | 76 | SW | 10.5 | 4.7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.76 | 755 8 | 30.12 | 765.0 | 59.7 | 15.4 | 84 | SW | 12.5 | 5.6 | ..... | ..... | 8 | S | ..... | 0.154 | 3.9 | ..... ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.89 | 759.1 | 29.96 | 760.9 | 64.4 | 18.0 | 88 | WSW | 29.8 | 13.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from — | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa. Com'd.t. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| Duque da Terceira, San José de Bissao, Senegambia | ..... | ..... | 30.08 | 764.0 | 73.4 | 23 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | 0 | ..... | Blue sky | C.C.da Fonseca Ferreira, Comd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, N. 1° 34', E. 7° 10' | ..... | ..... | 29.90 | 759.4 | 82.0 | 27.8 | ..... | S | ..... | ..... | 2 | ..... | 4 | ..... | 1 | SE | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | S | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt S. C. da Silva Costa. San José de Bissao, Senegambia | ..... | ..... | 29.91 | 759.8 | 80 6 | 27.0 | ..... | SW | ..... | ..... | 2 | ..... | 0 | ..... | 2 | .... | Blue sky | A. Ferreira, 2d Lt. |
| Sá da Bandeira | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 29.81 | 757.2 | 70.0 | 21.1 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | 2 | ..... | Overcast | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeirá gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 28.95 | 735.2 | 29.36 | 745 8 | 49.8 | 9.9 | 76 | SW | 20 | 9 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 28.98 | 736.2 | 29.38 | 746.3 | 67.5 | 19.7 | 51 | SSE | 13 | 6 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.19 | 741.4 | 29.43 | 747.4 | 59.2 | 15.1 | 67 | ESE | 9 | 4 | ..... | ..... | 5cs | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.53 | 750.0 | 29.54 | 750.4 | 55.8 | 13.2 | 59 | SE | 26 | 9 | ..... | ..... | 8ck | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 28.89 | 733.9 | 29.50 | 749.3 | 66.4 | 19.1 | 55 | SSE | 11 | 5 | ..... | ..... | 10ks;n; cs | ..... | ..... | ..... | Raining | ..... | Physical Cabinet. |
| Nikolaiev | 29.71 | 754.6 | 29.78 | 756.4 | 66.0 | 18.9 | 61 | S | 18 | 8 | ..... | ..... | 8cs;n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.88 | 759.0 | 29.90 | 759.5 | 62.1 | 16.7 | 77 | S | 2 | 1 | ..... | ..... | 7 | ..... | ..... | ..... | Light clouds | Lagorio. | |
| Moscow | 29.45 | 747.9 | 30.00 | 762.0 | 46.8 | 8.2 | 79 | S | 7 | 3 | ..... | ..... | 2ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.66 | 753.4 | 29.86 | 758.4 | 81.1 | 27.3 | 21 | SSE | 31 | 14 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.97 | 761.1 | 29.99 | 761.6 | 43.3 | 6.3 | 69 | ESE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.04 | 727.5 | 30.00 | 761.9 | 78.6 | 25.9 | 32 | SE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.18 | 766.6 | 30.10 | 764.5 | 75.4 | 24.1 | 34 | S | 18 | 8 | ..... | ..... | 2s | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.76 | 755.8 | 30.23 | 767.9 | 48.0 | 8.9 | 57 | NNE | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.92 | 760.0 | 30.20 | 767.1 | 41.4 | 5.2 | 75 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.00 | 736.5 | 29.97 | 761.1 | 45.9 | 7.7 | 58 | NW | 9 | 4 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.86 | 758.5 | 30.09 | 764.3 | 64.9 | 18.3 | 52 | N | 11 | 5 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 29.63 | 727.2 | 30.19 | 766.8 | 62.1 | 16.7 | 62 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.31 | 744.4 | 29.80 | 757.0 | 48.7 | 9.3 | 70 | SW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.93 | 760.3 | 30.23 | 767.9 | 37.4 | 3.0 | 44 | E | 7 | 3 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking, (China) | 29.58 | 751.3 | 29.72 | 754.9 | 54.0 | 12.2 | 84 | SE | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | Raining | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.98 | 761.5 | 30.08 | 764.0 | 40.1 | 4.5 | 59 | N | 2 | 1 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.80 | 756.9 | 29.91 | 759.6 | 59.0 | 15 | 55 | SE | 4.2 | 1.89 | ..... | ..... | 2k;ck | ..... | ..... | 0 | 0 | ..... ..... | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 29.89 | 759.2 | 29.95 | 760.6 | 64.4 | 18.0 | 91 | NW | 4.3 | 1.94 | ..... | 2 | 6 | S | ..... | 0.024 | 0.6 | Almost cov'd | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.02 | 686.2 | ..... | ..... | 50 9 | 10.5 | 69 | W | 10.3 | 4.60 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Peres. |
| Madrid, Royal Observatory | 27.78 | 705.6 | ..... | ..... | 56.1 | 13.4 | 72 | SW | 20.1 | 9.00 | ..... | 0 | 9 | ..... | ..... | Inap. | Inap. | Almost cov'd | The Staff. |
| Murcia, Met. Obs'y | 29.86 | 758.3 | 30.00 | 762.1 | 63.0 | 17.2 | 62 | S | 3 5 | 1.56 | ..... | 3 | 4 | SW | ..... | 0 | 0 | Cloudy. | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.01 | 736.8 | 29.90 | 759.5 | 55.6 | 13.1 | 89 | SW | 6.9 | 3.1 | ..... | ..... | 10 | ..... | ..... | 0.288 | 7.2 | Covered | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.92 | 760.0 | 29.99 | 761.6 | 76.3 | 24.6 | 71 | NW | 2.9 | 1.3 | ..... | ..... | 9k | ..... | NW | 1.063 | 27.0 | Cloudy | Benito Vines, S. J |
| Manilla, Philippine Islands | 29.75 | 755.6 | 29.80 | 757.0 | 85.8 | 29.9 | 78 | S | 9.6 | 4.3 | ..... | 1 | 1 | NW | E | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.12 | 765.1 | 30.22 | 767.6 | 61.2 | 16.2 | 67 | WSW | 8.0 | 3.6 | ..... | 0 | 9 | ..... | SW | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I | 29.99 | 761.7 | 30.08 | 764.9 | 77.7 | 25.4 | 81 | S | 0 | 0 | ..... | 7kn | 6kn | SE | SE | 0.532 | 13.50 | Cloudy | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.86 | 758.5 | 29.90 | 759.5 | 35.2 | 1.8 | .... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.78 | 756.5 | 29.84 | 757.8 | 35.2 | 1.8 | 75 | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.70 | 754.3 | 29.75 | 755.6 | 37.8 | 3.2 | 56 | NNE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.32 | 744.8 | 29.50 | 749.3 | 35.2 | 1.8 | 85 | NNE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.008 | 0.2 | ..... | |
| Wisby | 29.31 | 744.4 | 29.37 | 745.9 | 35.6 | 2.0 | 96 | NE | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.181 | 4.6 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.51 | 749.5 | 29.58 | 751.4 | 33.4 | 0.8 | 86 | N | 21.7 | 9.7 | ..... | ..... | 3 | ..... | NNE | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.43 | 722.2 | 29.89 | 759.3 | 42.4 | 5.8 | 88 | N | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0.035 | 0.9 | Cloudy..... | The Observatory. |
| Zurich | 28.18 | 715.8 | 29.86 | 758.4 | 42.8 | 6.7 | 76 | W | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.026 | 0.6 | Cloudy..... | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —2.1 mm.; Thermometer,—6.5 Cent.; Relative Humidity, +1 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,338.6 feet, and that of Zurich 470 m., or 1,542.0 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.95 | 760.8 | 70.3 | 21.3 | 30 | WSW | 13.4 | 6.0 | ..... | 1 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.24 | 768.0 | 91.4 | 33.1 | ..... | NW | ..... | ..... | 2 | 0 | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 30.01 | 762.3 | 60.6 | 15.9 | ..... | SW | ..... | ..... | 3 | 10 | ..... | ..... | 0.945 | 24. | Covered..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut. (Syria,) Lee Obs'y | 29.84 | 757.9 | 29.96 | 760.9 | 80.2 | 26.8 | 48 | S | ..... | ..... | 2 | 10cs | ..... | ..... | 0 | 0 | Overcast..... | Prof. C.V.A.Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.86 | 758.4 | 29.93 | 760.2 | 38.8 | 3.8 | 75 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.67 | 751.1 | 29.68 | 758.9 | 37 | 2.8 | ..... | NE | 5 | 2.2 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy..... | W. R. Bigg. |
| *Chatham, N. B | 29.86 | 758.4 | 29.93 | 760.2 | 40 | 4.4 | 59 | N | 1 | 0.4 | ..... | 2ck | 0 | N | ..... | 0 | 0 | Fair | G. A. Blair. |
| Charlottetown, P. E. Island | 29.83 | 757.7 | 29.88 | 758.9 | 39 | 3.9 | 61 | NE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.62 | 752.3 | 29.82 | 757.4 | 39.9 | 3.9 | 57 | NE | ..... | ..... | 2 | ..... | 10s | ..... | ..... | 0 | 0 | Overcast..... | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 29.94 | 760.5 | 29.98 | 761.5 | 43.3 | 6.3 | 91 | N | 5 | 2.2 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Overcast..... | W. H. Bevis. |
| *Father Point, Quebec | 29.97 | 761.2 | 29.99 | 761.7 | 35 | 1.7 | 70 | N | 5 | 2.2 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Clear | J. McWilliams. |
| Fredericton, N. B | 29.85 | 758.2 | 29.92 | 760.0 | 38.1 | 3.4 | 61 | NE | 5 | 2.2 | ..... | c | 0 | ..... | ..... | Inap. | Inap. | Clear | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.28 | 743.7 | 30.13 | 765.3 | 36 | 2.2 | 80 | S | 5 | 2.2 | ..... | 2ck | 5ks | W | W | 0 | 0 | Fair | James Stewart. |
| Granton, Ontario | 28.86 | 733.0 | 29.98 | 761.5 | 38 | 3.3 | ..... | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 29.67 | 753.6 | 29.81 | 757.2 | 45 | 7.2 | 34 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | F. Allison, M. A. |
| Hamilton, Ontario | 29.67 | 753.1 | 29.96 | 761.0 | 42.3 | 5.7 | 95 | NE | ..... | ..... | 1 | 10cs | 0 | NE | ..... | 0 | 0 | Cloudy..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.52 | 749.8 | 29.86 | 758.4 | 38 | 3.3 | 67 | NW | 12 | 5.4 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.79 | 756.7 | 29.82 | 757.4 | 44.1 | 6.7 | 89 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | C. H. Rigby. |
| Moose Factory, Ontario | 30.24 | 768.1 | 30.28 | 769.1 | 24.2— | 4.3 | 100 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Inap. | Inap. | Misty | J. R. Nason. |
| *Montreal, Quebec | 29.68 | 753.9 | 29.88 | 758.9 | 36 | 2.2 | 65 | NE | 16 | 7.2 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.29 | 744.0 | 30.00 | 762.0 | 37 | 2.8 | 72 | N | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Rev. R. Mosly. |
| Peterboro, Ontario | 29.15 | 740.4 | 29.91 | 759.7 | 41.7 | 5.4 | 56 | NE | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.23 | 742.4 | 29.95 | 760.2 | 38 | 3.3 | 72 | N | 8 | 3.6 | ..... | 5k | 0 | N | ..... | 0 | 0 | Fair | H. Morgan. |
| Port Hastings, N. S | 29.79 | 756.7 | 29.84 | 757.9 | 39.4 | 4.1 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.30 | 744.2 | 29.97 | 761.2 | 36 | 2.2 | 71 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | M. Payne. |
| *Quebec, Quebec | 29.63 | 752.6 | 29.96 | 761.0 | 35 | 1.7 | 70 | NE | ..... | ..... | 3 | 0 | 2ks | ..... | NE | 0 | 0 | Fair | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.63 | 750.0 | 30.00 | 762.0 | 38 | 3.3 | 67 | NE | 5 | 2.2 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.81 | 757.2 | 29.87 | 758.7 | 41 | 5.0 | 50 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| St. John, N. B | 29.70 | 754.4 | 29.87 | 758.7 | 40 | 4.4 | 64 | NE | 10 | 4.5 | ..... | 1ck | 0 | ..... | ..... | 0.08 | 2.0 | Fine | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.27 | 743.4 | 30.00 | 762.0 | 35 | 1.7 | 80 | N | 5 | 2.2 | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Clear | K. Stewart. |
| Stayner, Ontario | 29.17 | 740.9 | 29.97 | 761.2 | 36 | 2.2 | 71 | NW | 3 | 1.3 | ..... | 2k | 0 | Calm | ..... | 0 | 0 | Fair | R. J. Cole. |
| Stratford, Ontario | 29.02 | 752.3 | 29.93 | 760.2 | 37.3 | 2.9 | 56 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.78 | 756.4 | 29.82 | 757.4 | 48 | 8.9 | 44 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | T. C. Hill. |
| *Toronto, Ontario | 29.54 | 750.3 | 29.93 | 760.2 | 39 | 3.9 | 61 | N | 14 | 6.3 | ..... | 10ck | 0 | NE | ..... | 0 | 0 | Cloudy..... | Magnetic Observatory. |
| Windsor, N. S | 29.76 | 755.9 | 29.86 | 758.4 | 38.0 | 3.3 | 86 | W | 1 | 0.4 | ..... | 1cs | 0 | ..... | ..... | 0 | 0 | Fine | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUD. Amount. Up'er 0—10. | CLOUD. Amount. Low'r 0—10. | CLOUD. Direction. Upper. From— | CLOUD. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.48 | 748.8 | 29.71 | 754.6 | 34 | 1.1 | 95 | N | 24 | 10.7 | ..... | ..... | 10n | ..... | Calm | 0.49 | 12.4 | Light snow.. | |
| Alpena, Michigan | 29.40 | 746.7 | 30.07 | 763.8 | 36 | 2.2 | 53 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Atlanta, Georgia | 28.74 | 730.0 | 29.89 | 759.2 | 45 | 7.2 | 60 | NW | 19 | 8.5 | ..... | 2cs | 0 | NW | ..... | 0 | 0 | Clear..... | |
| Atlantic City, New Jersey | 29.45 | 748.0 | 29.46 | 748.3 | 40 | 4.4 | 100 | N | 22 | 9.8 | ..... | ..... | 10n | ..... | Calm | 2.12 | 53.4 | Light rain... | |
| Augusta, Georgia | 29.68 | 753.9 | 29.86 | 758.4 | 54 | 12.2 | 74 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 0.12 | 3.0 | Cloudy..... | |
| Baltimore, Maryland | 29.62 | 752.3 | 29.67 | 753.6 | 42 | 5.6 | 74 | N | 15 | 6.7 | ..... | 2k | 5s | NW | NW | 1.56 | 39.6 | Clearing..... | |
| Barnegat, New Jersey | 29.39 | 746.5 | 29.41 | 747.0 | 40 | 4.4 | 100 | NE | 34 | 15.2 | ..... | ..... | 10n | ..... | Calm | 1.47 | 37.3 | Light rain... | |
| Bismarck, Dakota | 28.25 | 717.5 | 30.10 | 764.5 | 40 | 4.4 | 56 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Boerne, Texas | 28.85 | 732.8 | 30.24 | 768.1 | 41 | 5.0 | 74 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Boise City, Idaho | 27.15 | 689.6 | 30.11 | 764.8 | 44 | 6.7 | 68 | Calm | 0 | 0 | ..... | 10k | 0 | W | ..... | Inap. | Inap. | Cloudy..... | |
| Boston, Massachusetts | 29.57 | 751.1 | 29.72 | 754.9 | 37 | 2.8 | 95 | NE | 29 | 13.0 | ..... | ..... | 10n | ..... | Calm | 0.92 | 23.4 | Light rain... | |
| Brackettville, Texas | 29.22 | 742.2 | 30.29 | 769.4 | 50 | 10.0 | 65 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Breckenridge, Minnesota | 29.15 | 740.4 | 30.18 | 766.6 | 31 | — 0.6 | 89 | E | 2 | 0.9 | ..... | 2k | 0 | NE | ..... | 0 | 0 | Fair..... | |
| Brownsville, Texas | 30.26 | 768.6 | 30.31 | 769.9 | 56 | 13.3 | 75 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Buffalo, New York | 29.17 | 740.9 | 29.88 | 758.9 | 37 | 2.8 | 67 | N | 7 | 3.1 | ..... | ..... | 10s | ..... | N | 0.07 | *1.8 | Cloudy..... | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 52 | 11.1 | 23 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Burlington, Vermont | 29.52 | 749.8 | 29.81 | 757.2 | 34 | 1.1 | 79 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Cairo, Illinois | 29.83 | 757.7 | 30.24 | 768.1 | 46 | 7.8 | 62 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Camp Apache, Arizona | .... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.30 | 642.6 | 30.10 | 764.5 | 56 | 13.3 | 19 | E | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 46 | 7.8 | 33 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Campo, California | 27.40 | 696.0 | 29.97 | 761.2 | 35 | 1.7 | 80 | E | 2 | 0.9 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| Cape Hatteras, N. Carolina | 29.69 | 754.1 | 29.70 | 754.4 | 48 | 8.9 | 85 | NW | 15 | 6.7 | ..... | ..... | 10s | ..... | NW | 0.91 | 23.1 | Cloudy..... | |
| Cape Henry, Virginia | 29.65 | 753.1 | 29.67 | 753.6 | 43 | 6.1 | 75 | NW | 26 | 11.6 | ..... | ..... | 10c | ..... | W | 0.10 | 2.5 | Cloudy ..... | |
| Cape Lookout, N. Carolina | 29.67 | 753.6 | 29.68 | 753.9 | 48 | 8.9 | 78 | NW | 28 | 12.5 | ..... | 5k | 0 | NW | ..... | 0.49 | 12.4 | Fair..... | |
| Cape May, New Jersey | 29.45 | 748.0 | 29.48 | 748.8 | 42 | 5.6 | 74 | NW | 32 | 14.3 | ..... | ..... | 10ks | ..... | NW | 1.10 | 27.9 | Cloudy..... | |
| Castroville, Texas | 29.55 | 750.6 | 30.28 | 769.1 | 49 | 9.4 | 51 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Charleston, South Carolina | 29.74 | 755.4 | 29.80 | 756.9 | 55 | 12.8 | 74 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | NW | 1.48 | 37.6 | Cloudy..... | |
| Cheyenne, Wyoming | 24.21 | 614.9 | 30.15 | 765.8 | 35 | 1.7 | 61 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Chicago, Illinois | 29.42 | 747.2 | 30.14 | 765.5 | 38 | 3.3 | 72 | NW | 4 | 1.8 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair..... | |
| Cincinnati, Ohio | 29.41 | 747.0 | 30.08 | 764.0 | 41 | 5.0 | 65 | NW | 12 | 5.4 | ..... | 1k | 0 | NW | ..... | 0 | 0 | Clear ..... | |
| Cleveland, Ohio | 29.24 | 742.7 | 29.98 | 761.5 | 37 | 2.8 | 81 | NW | 10 | 4.5 | ..... | 2c | 0 | W | ..... | Inap. | Inap. | Clear..... | |
| Coleman City, Texas | 28.59 | 721.1 | 30.27 | 768.8 | 46 | 7.8 | 77 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Columbus, Ohio | 29.14 | 740.1 | 29.99 | 761.7 | 39 | 3.9 | 64 | N | 9 | 4.0 | ..... | 2cs | 0 | Calm | ..... | 0.01 | 0.3 | Clear..... | |
| Concho, Texas | 28.42 | 721.9 | 30.16 | 766.1 | 43 | 6.1 | 67 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Corsicana, Texas | 29.85 | 758.2 | 30.33 | 770.4 | 47 | 8.3 | 70 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Davenport, Iowa | 29.54 | 750.3 | 30.20 | 767.1 | 39 | 3.9 | 73 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Deadwood, Dakota | 25.56 | 649.2 | ..... | ..... | 41 | 5.0 | 65 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Decatur, Texas | 29.10 | 739.1 | 30.30 | 769.6 | 50 | 10.0 | 45 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Denison, Texas | 29.51 | 749.5 | 30.33 | 770.4 | 50 | 10.0 | 58 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Denver, Colorado | 24.95 | 633.7 | 30.17 | 766.3 | 43 | 6.1 | 59 | S | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Des Moines, Iowa | 29.34 | 745.2 | 30.26 | 768.6 | 36 | 2.2 | 71 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear..... | |
| Detroit, Michigan | 29.33 | 745.0 | 30.01 | 762.2 | 38 | 3.3 | 63 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Dodge City, Kansas | 27.68 | 703.1 | 30.04 | 763.0 | 42 | 5.6 | 50 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Dubuque, Iowa | 29.47 | 748.5 | 30.20 | 767.1 | 37 | 2.8 | 53 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Duluth, Minnesota | 29.52 | 749.8 | 30.22 | 767.6 | 36 | 2.2 | 80 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Eagle Pass, Texas | 29.59 | 751.6 | 30.36 | 771.1 | 50 | 10.0 | 65 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Eastport, Maine | 29.77 | 756.1 | 29.84 | 757.9 | 40 | 4.4 | 56 | NE | 10 | 4.5 | ..... | 10c | 0 | W | ..... | 0 | 0 | Cloudy ..... | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 62 | 16.7 | 46 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| El Paso, Texas | 26.47 | 672.3 | ..... | ..... | 40 | 4.4 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Erie, Pennsylvania | 29.19 | 741.4 | 29.92 | 760.0 | 39 | 3.9 | 73 | N | 2 | 0.9 | ..... | 8ck | 0 | NW | ..... | 0.18 | 4.6 | Clearing..... | |
| Escanaba, Michigan | 29.49 | 749.0 | 30.18 | 766.6 | 30 | — 1.1 | 68 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Florence, Arizona | 28.47 | 723.1 | 30.07 | 763.8 | 71 | 21.7 | 18 | E | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Fort Buford, Dakota | 28.16 | 715.3 | ..... | ..... | 35 | 1.7 | 90 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Craig, New Mexico | 25.74 | 653.8 | 29.80 | 756.9 | 35 | 1.7 | 34 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Davis, Texas | 25.46 | 646.7 | 30.42 | 772.6 | 37 | 2.8 | 46 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Gibson, Indian Ter | 29.76 | 755.9 | 30.32 | 770.1 | 43 | 6.1 | 75 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Fort Griffin, Texas | 28.98 | 736.1 | 30.31 | 769.9 | 42 | 5.6 | 83 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Fort Keogh, Montana | 27.69 | 703.3 | ..... | ..... | 36 | 2.2 | 62 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort McKavett, Texas | 28.05 | 712.5 | 30.06 | 763.5 | 40 | 4.4 | 48 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Fort St. Michael, Alaska | 29.89 | 759.2 | 29.93 | 760.2 | — 9 | —22.8 | 100 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Fort Sill, Indian Territory | 29.11 | 739.4 | 30.26 | 768.6 | 44 | 6.7 | 76 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Stevenson, Dakota | 28.22 | 716.8 | ..... | ..... | 35 | 1.7 | 70 | NW | 5 | 2.2 | ..... | 1c | 0 | NW | ..... | 0 | 0 | Fair ..... | |
| Fredericksburg, Texas | 28.60 | 726.4 | 30.22 | 767.6 | 47 | 8.3 | 70 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Galveston, Texas | 30.24 | 768.1 | 30.29 | 769.4 | 58 | 14.4 | 76 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Graham, Texas | 29.27 | 743.4 | 30.38 | 771.6 | 38 | 3.3 | 81 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Grand Haven, Michigan | 29.45 | 748.0 | 30.11 | 764.8 | 40 | 4.4 | 56 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Indianapolis, Indiana | 29.31 | 744.5 | 30.11 | 764.8 | 37 | 2.8 | 71 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Indianola, Texas | 30.32 | 770.1 | 30.35 | 770.9 | 56 | 13.3 | 87 | N | 7 | 3.1 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear..... | |
| Jacksboro, Texas | 29.18 | 741.2 | 30.35 | 770.9 | 47 | 8.3 | 55 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Jacksonville, Florida | 29.88 | 758.9 | 29.90 | 759.4 | 59 | 15.0 | 59 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.90 | 22.9 | Clear..... | |
| Keokuk, Iowa | 29.57 | 751.1 | 30.20 | 767.1 | 43 | 6.1 | 75 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Key West, Florida | 29.95 | 760.7 | 29.98 | 761.5 | 73 | 22.8 | 76 | NW | 21 | 9.4 | ..... | 10c;k | 0 | Calm;NW | ..... | 0.65 | 16.5 | Cloudy. ..... | |
| Kittyhawk, North Carolina | 29.63 | 752.6 | 29.66 | 753.4 | 45 | 7.2 | 84 | NW | 20 | 8.9 | ..... | ..... | 10s | ..... | N | 0.28 | 7.1 | Cloudy..... | |
| Knoxville, Tennessee | 29.00 | 736.6 | 30.02 | 762.5 | 45 | 7.2 | 65 | N | 4 | 1.8 | ..... | 0 | 8ks | ..... | N | 0.04 | 1.0 | Fair ..... | |
| La Crosse, Wisconsin | 29.43 | 747.5 | 30.19 | 766.8 | 39 | 3.9 | 64 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| La Mesilla, New Mexico | 26.30 | 668.0 | 30.45 | 773.4 | 42 | 5.6 | 50 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Laredo, Texas | 29.94 | 760.5 | 30.29 | 769.4 | 58 | 14.4 | 64 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Leavenworth, Kansas | 29.39 | 746.5 | 30.26 | 768.6 | 40 | 4.4 | 73 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear ..... | |
| Los Angeles, California | 29.57 | 751.1 | 29.91 | 759.7 | 53.5 | 11.9 | 80 | NE | 5 | 2.2 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear..... | |
| Louisville, Kentucky | 29.52 | 749.8 | 30.10 | 764.5 | 41 | 5.0 | 57 | N | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Lynchburg, Virginia | 29.04 | 737.6 | 29.71 | 754.6 | 49 | 9.4 | 63 | W | 2 | 0.9 | ..... | 0 | 8ks | ..... | W | 0.72 | 18.3 | Cloudy..... | |
| Madison, Wisconsin | 29.14 | 740.1 | 30.16 | 766.1 | 36 | 2.2 | 71 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Marquette, Michigan | 29.15 | 748.0 | 30.18 | 766.6 | 34 | 1.1 | 70 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Mason, Texas | 28.70 | 729.0 | 30.55 | 776.0 | 42 | 5.6 | 66 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Memphis, Tennessee | 29.91 | 759.7 | 30.24 | 768.1 | 47 | 8.3 | 71 | N | 10 | 4.5 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear..... | |
| Milwaukee, Wisconsin | 29.40 | 746.7 | 30.15 | 765.8 | 35 | 1.7 | 80 | N | 8 | 3.6 | ..... | 1ck | 1s | NE | NE | 0 | 0 | Clear..... | |
| Mobile, Alabama | 30.10 | 764.5 | 30.14 | 765.5 | 53.5 | 11.4 | 63 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Montgomery, Alabama | 29.82 | 757.4 | 30.06 | 763.5 | 50 | 10.0 | 58 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Morgantown, West Virginia | 28.78 | 731 0 | 29.84 | 757.9 | 38 | 3.3 | 100 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.33 | 8.4 | Light rain... | |
| Mt. Washington, N. H. | 23.42 | 594.9 | 29.78 | 756.4 | 18 | — 7.8 | 84 | E | 60 | 26.8 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy..... | |
| Nashville, Tennessee | 29.58 | 751.3 | 30.13 | 765.3 | 47 | 8.3 | 62 | NW | 4 | 1.8 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear..... | |
| New Haven, Connecticut | 29.35 | 745.5 | 29.47 | 748.5 | 39 | 3.9 | 91 | NE | 22 | 9.8 | ..... | ..... | 10n | ..... | NE | 1.74 | 44.2 | Heavy rain.. | |
| New London, Connecticut | 29.48 | 748.8 | 29.52 | 749.8 | 40 | 4.4 | 100 | NE | 20 | 8.9 | ..... | ..... | 10ks | ..... | NE | 1.61 | 40.9 | Cloudy..... | |
| New Orleans, Louisiana | 30.12 | 765.0 | 30.18 | 766.6 | 58 | 14.4 | 82 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Newport, Rhode Island | 29.52 | 749.8 | 29.57 | 751.1 | 39 | 3.9 | 100 | NE | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 1.47 | 37.3 | Heavy rain.. | |
| New York, New York | 29.36 | 745.5 | 29.53 | 750.0 | 40 | 4.4 | 100 | N | 12 | 5.4 | ..... | ..... | 10n;fg | ..... | N | 0.81 | 20.6 | Heavy rain. | |
| Norfolk, Virginia | 29.63 | 752.6 | 29.69 | 754.1 | 43 | 6.1 | 83 | N | 19 | 8.5 | ..... | ..... | 10s | ..... | NW | 0.19 | 4.8 | Cloudy..... | |

## UNITED STATES SERIES.—Continued.

| STATIONS | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Force. 0—10 | Clouds. Amount. Up'per 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.24 | 691.9 | 29.85 | 758.2 | 45 | 7.2 | 46 | S | 24 | 10.7 | ..... | 2ck | 0 | NW | ..... | 0. | 0 | Clear | |
| Olympia, Washington Ter. | 29.90 | 759.4 | 29.94 | 760.5 | 37.2 | 2.9 | 90 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Omaha, Nebraska | 29.08 | 738.6 | 30.20 | 767.1 | 46 | 7.8 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.53 | 750.0 | 29.85 | 758.2 | 39 | 3.9 | 73 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | ..... | Inap. | Inap. | Cloudy | |
| Pembina, Dakota | 29.26 | 743.2 | 30.11 | 764.8 | 36 | 1.7 | 90 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | NW | 0 | 0 | Fair | |
| Philadelphia, Pa | 29.50 | 749.3 | 29.55 | 750.6 | 36 | 2.2 | 100 | N | 25 | 11.2 | ..... | ..... | 10n | ..... | N | 0.72 | 18.3 | Light rain | |
| Phœnix, Arizona | 28.80 | 731.5 | 30.58 | 776.7 | 61 | 16.1 | 31 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.98 | 456.7 | 30.19 | 766.8 | 18 | — 7.8 | 22 | N | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pioche, Nevada | 24.08 | 611.6 | 29.85 | 758.2 | 46 | 7.8 | 26 | S | 6 | 2.7 | ..... | 8c | 2s | SW | Calm | 0 | 0 | Cloudy | |
| Pittsburg, Pennsylvania | 29.06 | 738.1 | 29.88 | 758.9 | 39 | 3.9 | 82 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.17 | 4.3 | Cloudy | |
| Port Huron, Michigan | 29.32 | 744.7 | 30.00 | 762.0 | 37 | 2.8 | 71 | N | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Portland, Maine | 29.75 | 755.6 | 29.80 | 756.9 | 42 | 5.6 | 66 | N | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Portland, Oregon | 29.85 | 758.2 | 29.95 | 760.7 | 43.5 | 6.4 | 67 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Prescott, Arizona | 24.80 | 629.9 | 30.16 | 766.1 | 37 | 2.8 | 45 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.20 | 741.7 | 30.01 | 762.2 | 64 | 17.8 | 78 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 29.98 | 761.5 | 30.00 | 762.0 | 67 | 19.4 | 64 | NW | 24 | 10.7 | ..... | 5k | 0 | NW | ..... | 0.51 | 13.0 | Fair | |
| Red Bluff, California | 29.51 | 749.5 | 29.87 | 758.7 | 57 | 13.9 | 75 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Rio Grande City, Texas | 30.20 | 767.1 | 30.42 | 772.6 | 52 | 11.1 | 66 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rochester, New York | 29.25 | 742.9 | 29.88 | 758.9 | 39 | 3.9 | 64 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | NE | 0.12 | 3.0 | Cloudy | |
| Rossburg, Oregon | 29.34 | 745.2 | 29.92 | 760.0 | 44.0 | 6.7 | 91 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sacramento, California | 29.74 | 755.4 | 29.82 | 757.4 | 58 | 14.4 | 88 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| St. Louis, Missouri | 29.64 | 752.8 | 30.24 | 768.1 | 42 | 5.6 | 58 | N | 4 | 1.8 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Cloudy | |
| St. Marks, Florida | 29.98 | 761.5 | 30.00 | 762.0 | 53 | 11.7 | 73 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.30 | 744.2 | 30.16 | 766.1 | 35 | 1.7 | 69 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Salt Lake City, Utah | 25.66 | 651.8 | 29.99 | 761.7 | 48 | 8.9 | 49 | SE | 4 | 1.8 | ..... | 7c | 0 | Calm | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.63 | 752.6 | 30.23 | 767.8 | 51 | 10.6 | 59 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| San Diego, California | 29.87 | 758.7 | 29.94 | 760.5 | 54 | 12.2 | 55 | E | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.32 | 744.7 | 30.01 | 762.2 | 39 | 3.9 | 73 | N | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandy Hook, New Jersey | 29.47 | 748.5 | 29.50 | 749.3 | 39 | 3.9 | 100 | NE | 24 | 10.7 | ..... | ..... | 10n | ..... | NE | 2.31 | 58.3 | Light rain | |
| San Francisco, California | 29.75 | 755.6 | 29.81 | 757.2 | 56.7 | 13.7 | 80 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Santa Fé, New Mexico | 23.50 | 696.9 | 30.04 | 763.0 | 37 | 2.8 | 45 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.75 | 755.6 | 29.84 | 757.9 | 56 | 13.3 | 63 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | NW | 0.81 | 20.6 | Cloudy | |
| Shreveport, Louisiana | 30.04 | 763.0 | 30.26 | 768.6 | 52 | 11.1 | 73 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Silver City, New Mexico | 24.48 | 621.8 | 30.74 | 780.8 | 44 | 6.7 | 36 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 29.75 | 755.6 | 29.78 | 756.4 | 51 | 10.6 | 79 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | N | 1.07 | 27.2 | Cloudy | |
| Springfield, Massachusetts | 29.50 | 749.3 | 29.63 | 752.6 | 38 | 3.3 | 100 | NE | 11 | 4.9 | ..... | ..... | 10n | ..... | NE | 1.13 | 28.7 | Light rain | |
| Stockton, Texas | 27.27 | 692.6 | 30.27 | 768.8 | 44 | 6.7 | 68 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass. | 29.69 | 754.1 | 29.75 | 755.6 | 36 | 2.2 | 100 | NE | 26 | 11.6 | ..... | ..... | 10n | ..... | NE | 0.72 | 18.3 | Light rain | |
| Toledo, Ohio | 29.33 | 745.0 | 30.03 | 762.8 | 40 | 4.4 | 56 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tucson, Arizona | 27.55 | 699.8 | 30.10 | 764.5 | 58 | 14.4 | 47 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.70 | 754.4 | 30.20 | 767.1 | 44.0 | 6.7 | 45 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Clear | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 30 | — 1.1 | 100 | Calm | ..... | ..... | 0 | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Uvalde, Texas | 29.44 | 747.8 | 30.26 | 768.6 | 54 | 12.2 | 43 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 30.00 | 762.0 | 30.26 | 768.6 | 52 | 11.1 | 73 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Virginia City, Montana | 24.34 | 618.2 | 29.82 | 757.4 | 34 | 1.1 | 61 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.48 | 748.7 | 29.84 | 757.9 | 57.5 | 14.2 | 83 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 29.56 | 750.8 | 29.68 | 753.9 | 41 | 5.0 | 82 | N | 16 | 7.2 | ..... | 5ck | 5ks | NW | N | 1.40 | 35.6 | Clearing | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 49 | 9.4 | 51 | Calm | 0 | 0 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 29.68 | 753.9 | 29.76 | 755.9 | 50 | 10.0 | 72 | N | 11 | 4.9 | ..... | ..... | 10s | ..... | N | 0.72 | 18.3 | Cloudy | |
| Winnemucca, Nevada | 25.59 | 650.0 | 29.95 | 760.7 | 41 | 5.0 | 74 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Wood's Holl, Mass. | 29.53 | 750.0 | 29.57 | 751.1 | 40 | 4.4 | 91 | E | 22 | 9.8 | ..... | ..... | 10n | ..... | NE | 0.82 | 20.8 | Light rain | |
| Yankton, Dakota | 28.93 | 734.8 | 30.28 | 769.1 | 32 | 0.0 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yuma, Arizona | 29.73 | 755.1 | 29.90 | 759.4 | 56 | 13.3 | 46 | Calm | 0 | 0 | ..... | 5cs | 2s | W | Calm | 0 | 0 | Fair | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark. | 28.68 | 728.5 | 30.13 | 765.3 | 46 | 7.8 | 54 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I. | 29.93 | 760.2 | 29.98 | 761.5 | 77 | 25.0 | 69 | NW | 8.4 | 3.8 | ..... | ..... | 10n | ..... | NW | 1.10 | 27.9 | Cloudy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A. | 25.26 | 641.6 | ..... | ..... | 67.2 | 19.6 | 80 | Calm | ..... | ..... | ..... | ..... | 10ks | ..... | ..... | 0.13 | 3.3 | ..... | Thomas Herran. |
| Navassa, W. I. | 29.94 | 760.5 | 30.02 | 762.5 | 80.2 | 26.8 | ..... | SE | 6.2 | 2.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Hazy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.02 | 762.5 | 30.02 | 762.5 | 79 | 26.1 | 87 | E | ..... | ..... | 2 | 5k | 8ks | E | ..... | 0.120 | 3.05 | ⅝ Clouded. | C. J. Hering. |
| Santiago de Cuba, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A. | 30.25 | 768.3 | 30.30 | 769.6 | 22 | — 5.6 | 93 | NE | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | J. Fortescue & W. Wood. |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 2,040 (?) ft., or 317.0 (?) m., Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.79 | 756.7 | 59 | 15.0 | 55 | 12.8 | 93 | W | 2 | 0.9 | .... | ..... | 8 | ..... | Calm | 0 | 0 | ..... | ..... | Light clouds | |
| Navy Yard, Pensacola, Fla. | 30.15 | 765.8 | 54 | 12.2 | 54 | 12.2 | 74 | NW | 15 | 6.7 | .... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Navy Yard, Portsmouth, N.H | 29.82 | 757.4 | 56 | 13.3 | 40 | 4.4 | 67 | NE | 1 | 0.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Raining | |
| Naval Hospital, Yokohama, Japan | .*. | 30.22‡ | 767.6‡ | ..... | ..... | 57.5 | 14.2 | 84 | SW | ..... | ..... | 1 | ..... | Haze | ..... | ..... | 0 | 0 | ..... | ..... | Clear |
| Adams, Panama | .*.. | 30.00 | 762.0 | 81 | 27.2 | 79 | 26.1 | 95 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy |
| Alaska, Esquimault, Vancouver I. | | 30.08‡ | 764.0‡ | ..... | ..... | 42 | 5.6 | 57 | NE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Smooth | ..... | Misty |
| Alliance, Naples, Italy | | 29.82‡ | 757.4‡ | ..... | ..... | 58 | 14.4 | 82 | WSW | ..... | ..... | 4 | ..... | 9 | ..... | W | ..... | ..... | Light | W | Showery |
| Ashuelot, Hong-Kong, China | ...*. | 29.92‡ | 760.0‡ | ..... | ..... | 69 | 20.6 | 95 | ENE | ..... | .... | 3 | ..... | 10 | ..... | WNW | ..... | ..... | Smooth | ..... | Misty |
| Canonicus, New Orleans, La | .....*. | 30.16 | 766.1 | 46 | 7.8 | 61 | 16.1 | 46 | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear |
| Colorado, New York, N. Y. | | 29.52 | 749.8 | 39 | 3.9 | 39 | 3.9 | ?? | NNE | 5 | 2.2 | ..... | ..... | 0? | ..... | ..... | 1.62 | 41.1 | ..... | ..... | Heavy rain |
| Constitution N. 30° 54′, W. 17° 39 | ..... | 30.31‡ | 769.9‡ | ..... | ..... | 65 | 18.3 | 100 | NW | ..... | ..... | 2 | ..... | 7 | ..... | Calm | ..... | ..... | Smooth | NW | Fair |
| Despatch, Genoa, Italy | | 29.58‡ | 751.3‡ | ..... | ..... | 58 | 14.4 | 42 | SE | ..... | .. ... | 4 | ..... | 8 | ..... | SE | ..... | ..... | Smooth | ..... | Cloudy |
| Essex, Maldonado, Uruguay | .. | 29.87 | 758.7 | 69 | 20.6 | 67 | 19.4 | ..... | WNW | ..... | ..... | 4 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy |
| Franklin, Norfolk, Va | .....*. | 29.77 | 756.1 | 63 | 17.2 | 44 | 6.7 | 84 | NW | 18 | 8.0 | ..... | ..... | 10 | ..... | NW | 0.25 | 6.3 | ..... | ..... | Cloudy |
| Gettysburg, Genoa, Italy | .....*. | 29.63‡ | 752.6‡ | ..... | ..... | 57 | 13.9 | 81 | SE | 4 | 1.8 | ..... | ..... | 8 | ..... | SE | 0 | 0 | Smooth | ..... | Cloudy |
| Hartford, Buenos Ayres, S. A. | ...*. | 30.03 | 762.8 | 64 | 17.8 | 63 | 17.2 | 83 | SSE | ..... | ..... | 6 | ..... | 5 | ..... | S | 0.20 | 5.1 | Mod'ate | S | Fair |
| Michigan, Erie, Pa | .....†. | 29.87‡ | 758.7‡ | ..... | ..... .. | 37 | 2.8 | 81 | N | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy |
| Monocacy, Shanghai, China | .....*. | 29.80‡ | 756.9‡ | ..... | ..... | 62 | 16.7 | 88 | SSE | ..... | ..... | 3 | ..... | 10 | ..... | SSE | ..... | ..... | ..... | ..... | Rainy |
| Monongahela N. 27° 43′, E. 145° 21′ | .....*. | 30.08‡ | 764.0‡ | ..... | ..... .. | 68 | 20.0 | 79 | NE | ..... | ..... | 3–6 | ..... | k | ..... | N;E | 0 | 0 | Mod'ate | N;E | Squally |
| New Hampshire, Port Royal, S. C. | .....*. | 29.86 | 758.4 | 58 | 14.4 | 67 | 13.9 | 69 | NW | 14 | 6.3 | ..... | ..... | 10 | ..... | NW | 1.05 | 26.7 | ..... | ..... | Overcast |
| Onward, Callao, Peru | .....†*. | 30.08 | 764.0 | ..... | ..... | 62 | 16.7 | 94 | Var. | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Foggy |
| Palos, Tientsin, China | .....*. | 29.76 | 755.9 | 60 | 15.6 | 50 | 10.0 | 100 | SE | ..... | ..... | 3 | ..... | 10? | ..... | W | ..... | ..... | ..... | ..... | Clear? |
| Passaic, Washington, D. C. | ..... | ..... | ..... | ..... | ..... | 42 | 5.6 | 83 | NW | ..... | ..... | 4 | ..... | 8 | ..... | SE | ..... | ..... | ..... | ..... | Cloudy |
| Pensacola. Iquique, Peru | ..... | 30.03‡ | 762.8‡ | ..... | ..... | 63 | 17.2 | 89 | SE | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | SSW | Clear |
| Plymouth. Portsmouth, N. H | ..... | 29.89‡ | 759.2‡ | ..... | ..... | 40 | 4.4 | 91 | NNE | ..... | .... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rainy |
| Powhattan. Norfolk, Va | ..... | 29.70‡ | 754.4‡ | ..... | ..... | 46 | 7.8 | 69 | NW | ..... | ..... | 5–6 | ..... | 10 | ..... | ..... | 0.225 | 5.64 | ..... | ..... | Cloudy |
| Quinnebaug, Algiers, Algeria | ..... | 30.09‡ | 764.3‡ | ..... | ..... | 65 | 18.3 | 78 | W | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear |
| Ranger. Takoro, Formosa I. | ...*. | 29.84‡ | 757.9‡ | ..... | ..... | 78 | 25.6 | 86 | SE | ..... | ..... | 1 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy? |
| Richmond. Pt. de Galle, Ceylon | ..... | 29.80‡ | 756 9‡ | ..... | ..... | 84 | 28.9 | 91 | WSW | ..... | ..... | 1 | ..... | 8 | ..... | W | 0.1 | 3. | Ground | W | Clear? |
| Rio Bravo, Brownsville, Texas | ..... | 30.27 | 768.8 | 68 | 14.4 | 57 | 13.9 | 87 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear |
| Santee, Annapolis, Md | ..... | 29.64‡ | 752.8‡ | ..... | ..... | 44 | 6.7 | 92 | N | ..... | ..... | 6 | ..... | 10 | ..... | N | 0.18 | 4.6 | ..... | ..... | Cloudy |
| Saratoga, Horta Bay, Fayal, Azores. | | 29.85‡ | 758.2‡ | ..... | ..... | 62 | 16.7 | 94 | W | ..... | ..... | 4–6 | ..... | 10 | ..... | NNW | 0 | 0 | Smooth | ..... | Cloudy |
| St. Louis, League Island, Pa | ..... | 29.50 | 49.3 | 58 | 14.4 | 39 | 3.9 | 100 | N | 17 | 7.6 | ..... | ..... | 10 | ..... | NNE | 1.6 | 41. | ..... | ..... | Raining |
| Trenton Villafranca, France | ...*. | 29.58‡ | 751.3‡ | ..... | ..... | 65 | 18.3 | 35 | SSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Mod'ate | S | Clear |
| Tuscarora, Acapulco, Mexico | .....*. | 29.93‡ | 760.2‡ | ..... | ..... | 75 | 23.9 | 72 | Calm | ..... | ..... | 0 | ..... | 9 | ..... | ..... | 0 | 0 | Smooth | ..... | Pleasant |
| Vandalia Norfolk, Va | .....†. | 29.88‡ | 758.9‡ | ..... | ..... | 46 | 7.8 | 84 | NNW | ..... | ..... | 5 | ..... | 2 | ..... | S | ..... | ..... | Smooth | ..... | Foggy |
| Wabash. Boston, Mass | ..... | 29.78‡ | 756.4‡ | ..... | ..... | 38 | 3.3 | 81 | NE | 26 | 11.6 | ..... | ..... | 10 | ..... | ..... | 0.10 | 2.5 | ..... | ..... | Rainy |
| Wyoming, Beirut, Syria | ..... ..*. | 29.97‡ | 758.9‡ | ..... | ..... | 79 | 26.1 | 66 | SW | ..... | ..... | 1–2 | ..... | 10 | ..... | SW | ..... | ..... | Smooth | SW | Cloudy |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | |
| §S.S. City of Tokio Capt. Maury N. 34° 36′, E. 178° 26′ | | 30.45‡ | 773.4‡ | 61 | 16.1 | | W | | | 2 | | Fog | | | 0 | Smooth | | Foggy | L. B. Walls. |
| S. S. Colima, N. 17° 10,′ W. 101° 17′ ..† | | 29.98‡ | 761.6‡ | 72 | 22.2 | | Calm | | | 0 | | 1 | | Calm | 0 | Small | WNW | Misty | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota, Capt. H. G. Morse, | | | | | | | | | | | | | | | | | | | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly |
| S. S. Granada, Capt. Austin, | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, Sydney, N. S. W | | 30.43‡ | 772.9‡ | | | | S | | | 1 | | 0 | | | | | | Fine | R. C. Ghest, 1st Officer. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office. §The date of the S. S. City of Tokio is uncertain, and may be in error one day.

**WHITE STAR LINE MARINE SERIES.**

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

**OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.**

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer, | | | | | | | | | | | | | | | | | | | J. A. Thompson, 2d Offr |
| S. S. Gaelic, N. 44° 50′, W. 174° 40′...* | | 29.98‡ | 761.5‡ | 48 | 6.1 | | W | | | 6 | | k | | W | 0 | High | W | D. clouds..... | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, N. 28° 49′, E. 125° 22′..... | | 29.82‡ | 757.4‡ | 65 | 18 8 | 100 | SW | | | 3 | | 10 | | SW | | Smooth | | Raining..... | J. G. Cameron. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the S. S. Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

**NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.**

Furnished by the co-operation of A. Schumacher & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 50° 27′, W. 2° 20′..... | | 29.99‡ | 761.7‡ | 57.0 | 13.9 | 81 | NE | | | 3 | | 5? | | NE | 0 | Smooth | E | Clear?..... | Capt. C. Undütsch. |
| S. S. Leipzig, New York, New York... | | 29.67‡ | 753.6‡ | 44.0 | 6.7 | 92 | Var. | | | 2–5 | | 10 | | | 5 hours | Mod'ate | SW | Drizzling..... | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, Capt. G. Meyer, N. 36° 57′, W. 76° 00′..... | | 29.65‡ | 753.1‡ | | | | NNW | | | 5 | | 8 | | NW | | | | Cloudy..... | G. Risius, 3rd Officer. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

| NAMES OF VESSELS. | True course toward. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | L'w'r | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N 44° 56′, W 42° 15′ | | 29.79‡ | 756.7‡ | 46 | 7.8 | | NW | | | 8 | | 9 | | NW | 0 | Fr'sh | | Cloudy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud-direction as toward instead of from; sea-swell in general terms, as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

## RED STAR LINE MARINE SERIES.

Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | J. Powell, 4th Officer. |
| S. S. Peruvian | | | | | | | | | | | | | | | | | | | |
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Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Anéroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## MARINE SERIES. (Miscellaneous.)

Furnished by the co-operation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
| Brigantine "George of Halifax" | | | | | | | | | | | | | | | | | | | Willard N. Pratt. |
| | | | | | | | | | | | | | | | | | | | |
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Note.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

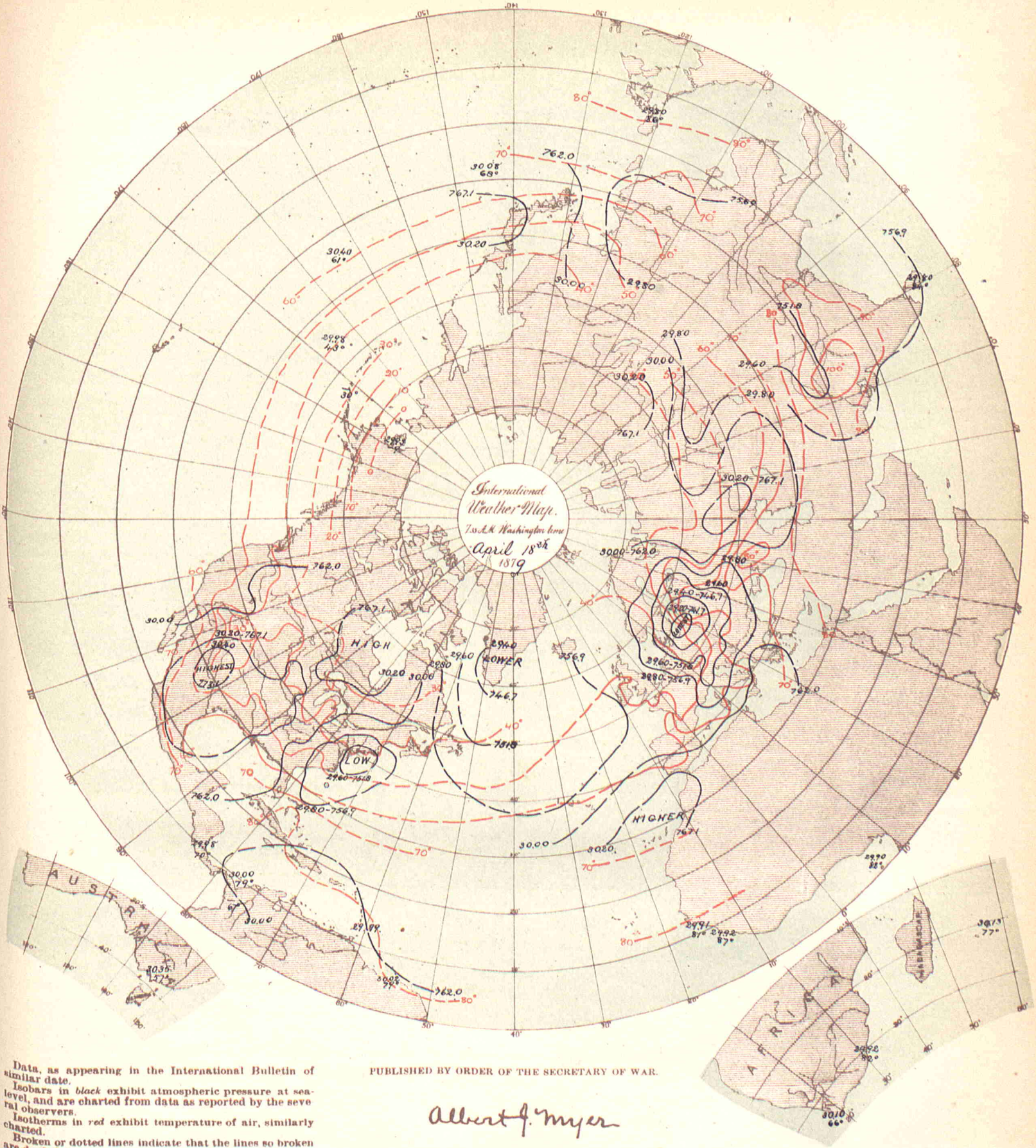
Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively by the letters c, k, s, n, d, f, p, hz., fg. and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING Co. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 19, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer, corrected for instrum'tal error and temperature. Inches. | Barometer, corrected for instrum'tal error and temperature. Millimeters. | Barometer, reduced to sea-level. Inches. | Barometer, reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 30.08 | 763.9 | 70.2 | 21.2 | 62 | Calm | | | 0 | | 2 | | | 0 | 0 | Fair | Kesxuche. |
| Algiers | | | 30.00 | 761.9 | 68.7 | 20.4 | 53 | WNW | | | 3 | | 0 | | | 0 | 0 | Clear | Tourlliere. |
| La Calle | | | 30.04 | 762.9 | 70.3 | 21.3 | 66 | N | | | 1 | | 5 | | | 0 | 0 | Cloudy | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 30.17 | 766.2 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 30.07 | 763.7 | 68.4 | 20.2 | 28 | W | | | 3 | | 2 | | | 0 | 0 | Fair | Herbin. |
| Tebessa | | | 30.12 | 765.1 | 68.4 | 20.2 | 37 | W | | | 1 | | 2 | | | 0 | 0 | Fair | Watrin. |
| Geriville | | | 30.16 | 765.8 | 63.1 | 17.3 | 76 | N | | | 3 | | 8 | | | 0 | 0 | Very cloudy | Brugniaux. |
| Laghouat | | | 30.11 | 764.7 | 71.2 | 21.8 | 41 | W | | | 2 | | 0 | | | 0 | 0 | Clear | Bertrand. |
| Biskra | | | 30.13 | 765.2 | 77.9 | 25.5 | 14 | WNW | | | 1 | | 2 | | | 0 | 0 | Fair | Chauvaux. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

## AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.32 | 744.7 | 29.87 | 758.6 | 54.3 | 12.4 | 67 | SE | | | 2 | | 9 | | | 0.039 | 1.0 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.01 | 736.8 | 29.78 | 756.3 | 50.0 | 10.0 | 43 | W | | | 4 | | 9 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 28.84 | 732.5 | 29.70 | 754.5 | 55.4 | 13.0 | 56 | S | | | 4 | | 9csk | | N | 0.035 | 0.90 | | Julius Mikolik. |
| Gratz | 28.62 | 727.0 | 29.87 | 758.7 | 51.6 | 10.9 | 53 | SW | | | 3 | | 8 | | | 0.043 | 1.1 | | Andreas Rospini. |
| Hermannstadt | 28.35 | 720.1 | 29.72 | 754.9 | 70.3 | 21.3 | 31 | NW | | | 2 | | 4 | | | 0.132 | 3.35 | | Prof. A. Gottschling. |
| Kremsmünster | 28.54 | 724.9 | 29.91 | 759.7 | 42.1 | 5.6 | 64 | W | | | 3 | | 10 | | | 0.224 | 5.7 | | Prof. C. Wagner. |
| Lemberg | 28.78 | 731.1 | 29.76 | 755.9 | 53.8 | 12.1 | 55 | SW | | | 3 | | 3 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 29.78 | 756.4 | 29.89 | 759.2 | 55.4 | 13.0 | 53 | ESE | | | 2 | | 6 | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.39 | 746.4 | 29.85 | 758.2 | 51.8 | 11.0 | 89 | SW | | | 2 | | 9 | | | 0.051 | 1.3 | | Julius Csics, S. J. |
| Szegedin | 29.58 | 751.4 | 29.87 | 758.6 | 50.4 | 10.2 | 76 | S | | | 1 | | 5 | | | 0.406 | 10.30 | | Karl Stancel. |
| Trieste | 29.80 | 756.9 | 29.90 | 759.5 | 57.6 | 14.2 | 53 | NE | | | 1 | | 9 | | | 0 | 0 | | P. Busin. |
| Vienna | 29.16 | 740.6 | 29.88 | 758.9 | 47.5 | 8.6 | 50 | W | | | 4 | | 10 | | | 0 | 0 | | I. R. Central Met. Obs'y |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

## BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.71 | 754.4 | 29.91 | 759.6 | 48.6 | 9.2 | 52 | NNW | | | 1 | | 5 | | SSW | 0 | 0 | | Royal Observatory. |
| Furnes | | | | | | | | | | | | | | | | | | | M. E. de Cae. |
| Maeseyck | 29.80 | 756.9 | 29.93 | 760.1 | 50.9 | 10.5 | 67 | W | | | 2 | | 8 | | | 0 | 0 | | M. Pierrot. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

**Entered at the Post Office at Washington, D. C., as Second-Class Matter.**

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected or instrumental error and temperature. Inches. | Barometer. Corrected or instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.73 | 755.1 | 29.83 | 757.7 | 41.1 | 5.1 | ..... | SSE | 15 | 6.7 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Blue sky | W. Boswell. |
| Ardrossan | 29.73 | 755.1 | 29.75 | 755.6 | 51 | 10.6 | ..... | SSE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Misty | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.66 | 753.4 | 47.9 | 8.8 | ..... | SE | 26 | 11.6 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | Squally | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.75 | 755.6 | 50.8 | 10.4 | ..... | SE | 21 | 9.4 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.76 | 755.9 | 47.9 | 8.8 | ..... | SSE | 6 | 2.7 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Thomas Mackereth. |
| Bradford, Yorkshire | 29.40 | 746.7 | 29.79 | 756.7 | 47.7 | 8.7 | ..... | SE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0 | 0 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.97 | 761.2 | 30.00 | 762.0 | 83.5 | 28.6 | ..... | NE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.86 | 758.2 | 49.9 | 9.9 | ..... | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast | H. Todd. [O. |
| Cardington | ..... | ..... | 29.77 | 756.1 | 50.0 | 10.0 | ..... | SE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | John McLaren. |
| Chatham, School M. E. | 29.75 | 755.6 | 29.88 | 758.9 | 47.6 | 8.7 | ..... | S | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.14 | 714.7 | 29.62 | 752.3 | 44.0 | 6.7 | ..... | E | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | Fine | Alexander Watt. |
| Donaghadee | 29.67 | 753.6 | 29.71 | 754.6 | 47 | 8.3 | ..... | SE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 29.84 | 757.9 | 29.87 | 758.7 | 47 | 8.3 | ..... | SSE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded | J. Costello. |
| Falmouth, Observatory | 29.41 | 747.0 | 29.64 | 752.8 | 48.7 | 9.3 | ..... | SE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.59 | 700.8 | 29.90 | 759.4 | 61.3 | 16.3 | ..... | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.70 | 754.4 | 29.93 | 760.2 | 88 | 31.1 | ..... | NW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's college | ..... | ..... | ..... | ..... | 48 | 8.9 | ..... | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Rain & snow | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 30.07 | 763.8 | 30.12 | 765.0 | 68.9 | 20.5 | ..... | W | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.54 | 750.3 | 29.75 | 755.6 | 48.8 | 9.3 | ..... | SSE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy | D. G. Maclean. [O. |
| Great Yarmouth | 29.89 | 759.2 | 29.90 | 759.4 | 42 | 5.6 | ..... | SSE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.68 | 753.9 | 29.86 | 758.4 | 50.1 | 10.1 | ..... | SSE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | The staff, for G.B. Airy |
| Guernsey | 29.51 | 749.5 | 29.74 | 755.4 | 50.5 | 10.3 | ..... | ESE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Dr. S.E.Hoskins, F.R.S |
| Helston | 29.69 | 754.1 | 29.81 | 757.2 | 52 | 11.1 | ..... | SE | ..... | ..... | 7 | ..... | 6c | ..... | ..... | 0.52 | 13.2 | Stormy | M. P. Moyle. |
| Holyhead | 29.65 | 753.1 | 29.68 | 753.9 | 54 | 12.2 | ..... | SSE | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | John Tilston. |
| Jersey | 29.48 | 748.8 | 29.77 | 756.1 | 50.5 | 10.3 | ..... | SE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy | J. Fisher. |
| Kew, Observatory | 29.82 | 757.4 | 29.85 | 758.2 | 49.7 | 9.8 | ..... | SSE | 15 | 6.7 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Threatening | The Meteorological Of. |
| Leicester, Museum | 29.55 | 750.6 | 29.80 | 756.9 | 49.5 | 9.7 | ..... | S | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.99 | 761.7 | 30.07 | 763.8 | 68 | 20.0 | ..... | NW | ..... | ..... | 2 | ..... | 2k | ..... | ..... | ..... | ..... | Blue sky | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.68 | 753.9 | 29.77 | 756.1 | 45 | 7.2 | ..... | E | ..... | ..... | 5 | ..... | 0 | ..... | ..... | ..... | ..... | Clear | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.04 | 763.0 | 74.0 | 23.3 | ..... | N | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.64 | 752.8 | 29.83 | 757.7 | 50.8 | 10.4 | ..... | S | ..... | ..... | 4 | ..... | 9k | ..... | S | 0 | 0 | Overcast | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.26 | 743.2 | 29.79 | 756.7 | 49.4 | 9.7 | ..... | SE | ..... | ..... | 3-4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.82 | 757.4 | 46 | 7.8 | ..... | ESE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Squally | H. E. Bellamy. |
| Plymouth | 29.61 | 752.1 | 29.69 | 754.1 | 51.5 | 10.8 | ..... | SE | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | John Merrifield. |
| Roche's Point | 29.40 | 746.7 | 29.48 | 748.8 | 48 | 8.9 | ..... | S | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Wm. Kennedy. |
| Saint Ann's Head | 29.45 | 748.0 | 29.61 | 752.1 | 49 | 9.4 | ..... | SE | ..... | ..... | 7 | ..... | 7 | ..... | ..... | ..... | ..... | Misty | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 43.1 | 6.2 | ..... | NE | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev C.Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.81 | 757.2 | 29.87 | 758.7 | 64.0 | 17.8 | ..... | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | W. H.Lyne. |
| Sheffield | 29.50 | 749.3 | 29.78 | 756.4 | 48.0 | 8.9 | ..... | SW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0 | 0 | D. clouds | W. F. Cooper. |
| Silloth Rectory | 29.74 | 755.4 | 29.76 | 755.9 | 53.0 | 11.7 | 56 | SE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | D. clouds | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.39 | 746.5 | 29.79 | 756.7 | 47.9 | 8.8 | ..... | SE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | Misty | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.65 | 753.1 | 29.87 | 758.7 | 47.4 | 8.6 | ..... | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Squally | C. H. Griffith, F. M. S. |
| Truro, Royal Institution | 29.58 | 751.3 | 29.63 | 752.6 | 52 | 11.1 | ..... | SE | ..... | ..... | 8 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | W. Newcombe. |
| Valencia, Observatory | 29.30 | 744.2 | 29.33 | 745.0 | 49.8 | 9.9 | ..... | SE | 32 | 14.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.39 | 771.9 | 30.43 | 772.9 | 64 | 17.8 | 53 | SE | 8 | 3.6 | ..... | 0 | 1 | ..... | ..... | 0 | 0 | Fine | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.34 | 770.6 | 54 | 12.2 | 81 | S | ..... | ..... | 3 | ..... | 9k | ..... | ..... | 0 | 0 | Cloudy | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.82 | 757.4 | 44.0 | 6.7 | ..... | E | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Fine | Andrew Gibb. |
| Mauritius, Observatory | 29.91 | 759.7 | 30.10 | 764.6 | 76.8 | 24.9 | 73 | ESE | 18.5 | 8.3 | ..... | 2 | 2 | ..... | E | 0.24 | 6.1 | Squally | C. Meldrum. |
| Melbourne, Observatory | 30.35 | 770.9 | 30.44 | 773.2 | 51.2 | 10.7 | 75 | SSE | 11 | 4.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Very fine | R. L. J. Ellery. |
| MonachLt-house, (Hebrides) | ..... | ..... | 29.68 | 753.9 | 47 | 8.3 | ..... | SE | ..... | ..... | 4 | 5 | 5 | SE | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.83 | 757.7 | 41 | 5.0 | ..... | N | ..... | ..... | 6 | 1 | 5 | N | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels | Barometer. Corrected or instrumental error and temperature. Inches. | Barometer. Corrected or instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 45', E. 29° 55' | ..... | ..... | 29.88‡ | 758.9‡ | 67 | 19.4 | ..... | WNW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | ..... | ..... | Squally | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle-Isle | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W.R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have generally been carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instru-m'tal error and temperature. Inches. | Barometer. Corrected for instru-m'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.32 | 668.5 | 30.04 | 763.0 | 63.0 | 17.2 | 80 | NE | ..... | ..... | 5 | 1ck | 8s | ..... | E | 0 | 0 | ..... | Federico Maison |

NOTE.—For St. Jose the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches for an altitude of 1,145 meters, or 3,756.6 feet; the distinction between the upper and lower clouds is not always made; the rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.37 | 746.1 | 29.42 | 747.3 | 41.2 | 5.1 | 58 | NNW | ..... | ..... | 6 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 29.61 | 752.0 | 29.63 | 752.5 | 40.6 | 4.8 | 74 | WNW | ..... | ..... | 6 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.18 | 741.1 | 29.22 | 742.2 | 44.2 | 6.8 | 45 | Calm | ..... | ..... | 0 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Faröe) | 29.88 | 759.0 | 29.92 | 759.9 | 43.9 | 6.6 | 67 | ENE | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | ..... | |
| Vestervig | 29.35 | 745.5 | 29.52 | 749.8 | 42.4 | 5.8 | 85 | NW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.34 | 745.2 | 29.89 | 759.2 | 47.8 | 8.8 | 67 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Collignon, Director. |
| Amiens, Normal School | 29.72 | 754.8 | 29.83 | 757.6 | 54.3 | 12.4 | 59 | W | ..... | ..... | 1 | ..... | 2 | ..... | NE | 0.236 | 6.0 | Slightly cld'y | Bonvallet, Director. |
| Avignon, Normal School | 29.84 | 757.8 | 29.91 | 759.8 | 56.7 | 13.7 | 53 | WSW | ..... | ..... | 1 | ..... | 2 | ..... | N | 0 | 0 | Partly cl'dy | M. Giraud, Director. |
| Bar-sur-Seine | 29.36 | 745.7 | 29.92 | 759.9 | 50.7 | 10.4 | 47 | S | ..... | ..... | 1 | ..... | 8kn | ..... | SW | 0.079 | 2.0 | Very cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.63 | 752.6 | 29.90 | 759.4 | 50.9 | 10.5 | 49 | E | ..... | ..... | ..... | ..... | 8 | ..... | SSE | 0 | 0 | Very cloudy | Frere Eugene Marie, Dr |
| Besançon, Normal School | 29.03 | 737.3 | 29.93 | 760.2 | 51.3 | 10.7 | 60 | E | ..... | ..... | 2 | ..... | 2 | ..... | NE | 0.165 | 4.2 | Slightly cl'dy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.08 | 738.6 | 29.99 | 761.7 | 53.4 | 11.9 | 54 | S | ..... | ..... | 1 | ..... | 5k | S | S | 0 | 0 | Cloudy | M. Marlot, Director. |
| Bourges, Normal School | 29.41 | 746.9 | 29.94 | 760.4 | 61.2 | 16.2 | 87 | SW | ..... | ..... | 4 | ..... | ck | SW | SW | 0 | 0 | ..... | A. Waquet, Director |
| Brest, Naval Observatory | 29.41 | 747.0 | 29.65 | 753.2 | 53.2 | 11.8 | 78 | SSE | ..... | ..... | 8 | ..... | 8 | ..... | SSE | 0.039 | 1.00 | ..... | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.56 | 750.8 | 29.97 | 761.2 | 59.0 | 15 | 61 | NW | ..... | ..... | 3 | ..... | 5 | W | W | 0 | 0 | Cloudy | September, Director. |
| Caen, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Lair, Director. |
| Chartres, Normal School | 29.35 | 745.4 | 29.92 | 760.0 | 44.4 | 6.9 | 95 | W | ..... | ..... | 2 | ..... | 10 | ..... | NW | 0.16 | 4. | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.60 | 751.7 | 29.91 | 759.8 | 52.5 | 11.4 | 39 | S | ..... | ..... | 1 | ..... | 5 | S | S | 0 | 0 | Cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.53 | 724.6 | 29.87 | 758.8 | 55.4 | 13.0 | 38 | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Alluard, Director. |
| Commercy, Normal School | 29.06 | 738.2 | 29.94 | 760.4 | 45.5 | 7.6 | 66 | ESE | ..... | ..... | 1 | ..... | 5c;k | ..... | ESE | 0 | 0 | Cloudy | Dr. Coulet, Director |
| Commune de Gréasque* | 28.79 | 731.3 | 29.93 | 760.3 | 49.1 | 9.5 | 46 | NW | ..... | ..... | 2 | ..... | 8 | ..... | NW | 0 | 0 | ¾ covered | M. Kina, Director. |
| Grenoble, Normal School | 29.09 | 738.8 | 29.85 | 758.3 | 51.4 | 10.8 | 80 | NW | ..... | ..... | 1 | ..... | 2k | ..... | ..... | 0 | 0 | Slightly cl'dy | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.59 | 751.6 | 29.80 | 757.0 | 58.8 | 14.9 | 65 | SE | ..... | ..... | 4 | ..... | 5 | ..... | SE | 0 | 0 | Cloudy | Mouillot, Director |
| Le Mans, Normal School | 29.47 | 748.6 | 29.78 | 756.4 | 55.0 | 12.8 | 55 | SE | ..... | ..... | 1 | ..... | 5 | ..... | S | 0 | 0 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.02 | 737.0 | 29.95 | 760.7 | 50.9 | 10.5 | 50 | SW | ..... | ..... | ..... | ..... | k | ..... | SW | 0 | 0 | ..... | Baudry, Director. |
| Lorient, Naval Observatory | 29.63 | 752.7 | 29.73 | 755.2 | 55.4 | 13.0 | 86 | SSE | ..... | ..... | 6 | ..... | ..... | ..... | S | 0 | 0 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mirecourt, Normal School | 28.83 | 732.2 | 29.89 | 759.2 | 49.8 | 9.9 | 54 | W | ..... | ..... | 1 | ..... | 2 | ..... | S | 0 | 0 | Slightlycl'dy | M. Barbier, Director. |
| Nismes, Normal School | 29.71 | 754.6 | 29.91 | 759.8 | 55.8 | 13.2 | 62 | NW | ..... | ..... | 4 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 28.82 | 732.0 | 29.89 | 759.2 | 51.8 | 11 | 43 | N | ..... | ..... | 1 | ..... | ..... | N | N | 0 | 0 | ..... | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.98 | 634.4 | ..... | ..... | 28.4 | — 2.0 | 100 | E | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.80 | 756.9 | 29.83 | 757.7 | 61.9 | 16.6 | 55 | S | ..... | ..... | 1 | ..... | 8 | S | S | 0.35 | 9. | ¾ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.77 | 756.2 | 29.86 | 758.4 | 55.0 | 12.8 | 43 | SSE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.70 | 754.3 | 29.73 | 755.1 | 58.5 | 14.7 | 51 | SSE | ..... | ..... | 6 | ..... | 1 | SSE | SSE | 0 | 0 | Clear | Lt. Hercouet, Director |
| Saint Maur, (near Paris) | 29.74 | 755.5 | 29.91 | 759.7 | 52.5 | 11.4 | 47 | SE | ..... | ..... | 2 | ..... | ..... | ..... | SSE | 0 | 0 | Slightlycl'dy | E. Renou, Director. |
| Tarbes, Normal School | 28.80 | 731.5 | 29.88 | 759.0 | 48.2 | 9 | 73 | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | T. Huguet, Director. |
| Toulouse, Observatory | 29.18 | 741.2 | 29.90 | 759.5 | 59.0 | 15.0 | 68 | E | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0.228 | 5.8 | ..... | M. Mercadier Julier. |
| Versailles Observatory | 29.41 | 746.9 | 29.90 | 759.4 | 51.1 | 10.6 | 44 | S | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.002 | 0.05 | ..... | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.126 | 3.20 | ..... | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.88 | 759.0 | 29.91 | 759.7 | 79.5 | 26.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 29.30 | 744.3 | 29.91 | 759.8 | 55.4 | 13.0 | 33 | NE | ..... | ..... | 2 | ..... | 3 | ..... | NE | 0 | 0 | Slightly cl'dy | Mr. Jays. |
| Mont-Louis | 24.67 | 626.5 | 29.98 | 761.5 | 41.9 | 5.5 | 82 | SSE | 15.0 | 6.7 | ..... | ..... | 8 | ..... | NW | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.85 | 758.2 | 57.9 | 14.4 | 55 | E | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.62 | 752.4 | ..... | ..... | 54.3 | 12.4 | 50 | SE | ..... | ..... | 2 | ..... | 2 | ..... | SSE | 0 | 0 | ..... | Marié Davy, Director. |
| Perpignan | 29.82 | 757.3 | 29.92 | 760.0 | 54.7 | 12.6 | 62 | E | 3.8 | 1.7 | ..... | ..... | 10 | ..... | WNW | 0.051 | 1.3 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.33 | 567.2 | ..... | ..... | 37.4 | 3.0 | ..... | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.085 | 2.16 | Snowy | Gen'l de Nansouty. |
| Tours | 29.65 | 753.0 | 29.84 | 758.0 | 54.9 | 12.7 | 45 | ESE | ..... | ..... | 2 | ..... | 2 | ..... | SSW | 0 | 0 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 29.95 | 760.7 | 29.97 | 761.3 | 63.3 | 17.4 | 97 | S | 2.0 | 0.9 | ..... | ..... | 6k | ..... | ..... | 0.264 | 6.7 | Cloudy | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand, Nice and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet: Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135.0 millimeters, or 5.315 inches has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the cooperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.02 | 737.0 | 29.85 | 758.3 | 48.4 | 9.1 | 53 | W | | | 6 | | 3 | W | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.54 | 750.2 | 29.71 | 754.6 | 49.8 | 9.9 | 54 | NW | | | 4 | | 7 | | | 0.594 | 15.1 | | Prof. Arndt. |
| Breslau | 29.25 | 742.9 | 29.78 | 756.3 | 41.9 | 5.5 | 59 | W | | | 7 | | 10 | W | | 0.128 | 3.25 | | Royal University Obs'y |
| Carlsruhe | 29.50 | 749.2 | 29.93 | 760.1 | 48.2 | 9.0 | 62 | W | | | 2 | | 10 | SW | | 0 | 0 | | Albert Senz. |
| Cassel | 29.24 | 742.6 | 29.84 | 757.9 | 48.9 | 9.4 | 39 | NNW | | | 4 | | 5 | W | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.73 | 755.2 | 29.89 | 759.3 | 49.8 | 9.9 | 46 | NW | | | 3 | | 5k | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.54 | 750.3 | 29.91 | 759.6 | 50.5 | 10.3 | | NNW | | | 1 | | 5 | | | 0 | 0 | | Physical Society. |
| Freienwalde on the Oder | 29.61 | 752.0 | 29.65 | 753.0 | 45.7 | 7.6 | 62 | WNW | | | 6 | | 5c;ks | WNW | | 1.024 | 26.0 | | Assmann., M. D. |
| Friedrichshafen | 28.48 | 723.3 | 29.92 | 760.0 | 48.6 | 9.2 | 64 | SSW | | | 4 | | 8 | SW | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.66 | 753.4 | 29.69 | 754.2 | 43.3 | 6.3 | 74 | WNW | | | 5 | | 7k | | | 0 | 0 | Fair | Captain F. Hegeman. |
| Kiel | 29.63 | 752.5 | 29.64 | 752.9 | 45.5 | 7.5 | 53 | WNW | | | 7 | | 4 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.22 | 742.2 | 29.30 | 744.3 | 37.4 | 3.0 | 92 | SW | | | 8 | | 10 | | | 0.087 | 2.2 | | Prof. E. Luther. |
| Köslin | | | 29.42 | 747.3 | 37.4 | 3.0 | | W | | | 6 | | 3 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.38 | 746.2 | 29.80 | 757.0 | 46.2 | 7.9 | 51 | W | | | 5 | | 7 | WNW | | 0.925 | 23.5 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.17 | 740.9 | 29.21 | 742.0 | 39.2 | 4.0 | 85 | S | | | 6 | | 10n | | | | | Raining | Skalweit. |
| Neufahrwasser | 29.34 | 745.2 | 29.36 | 745.6 | 38.1 | 3.4 | 83 | W | | | 4 | | 10 | | | 0.031 | 0.8 | | A. Lothes. |
| Posen | 29.37 | 745.9 | 29.66 | 753.3 | 43.3 | 6.3 | 58 | NW | | | 9 | | 9 | | | 0.083 | 2.1 | Snowing | Dr. Magener. |
| Strassburg (in Alsace) | 29.40 | 746.7 | 29.95 | 760.8 | 49.5 | 9.7 | 48 | Calm | | | 0 | | 4 | W | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 28.93 | 734.9 | 29.88 | 759.0 | 48.2 | 9.0 | 45 | W | | | 1 | | 6 | W | | 0 | 0 | | Prof. Schoder. |
| Treves (Trier) | 29.36 | 745.8 | 29.88 | 759.0 | 50.0 | 10.0 | 45 | W | | | 3 | | 6 | | | 0 | 0 | | Prof. Flesch. |
| Weissenburg (Bavaria) | 28.39 | 721.0 | 29.92 | 759.9 | 43.7 | 6.5 | 64 | WSW | 7 | 3 | | | 10 | | W | 0.071 | 1.8 | Hazy | Dr. Van Bebber |
| Wustrow, Naval School | 29.53 | 750.0 | 29.55 | 750.6 | 41.7 | 5.4 | 71 | W | | | 5 | | 4s | | | 0.197 | 5.0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.64 | 752.8 | 30.02 | 762.6 | 69.8 | 21.0 | | SW | | | 4.5 | | | | | | | Clear | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the cooperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.62 | 752.4 | 29.67 | 753.7 | 85.0 | 29.4 | 59 | WSW | 8 | 3.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | | | | | 99.3 | 37.4 | 13 | SSW | 6.1 | 2.7 | | | 4 | W | | 0 | 0 | D. clouds | |
| Bombay | 29.76 | 756.8 | 29.79 | 756.7 | 82.6 | 28.1 | 70 | WNW | 11 | 4.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.81 | 706.3 | 29.78 | 756.3 | 87.3 | 30.7 | 26 | WNW | | | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 28.82 | 732.1 | 29.54 | 750.2 | 96.2 | 35.7 | 22 | Calm | 2.8 | 1.2 | | | 10 | | | 0 | 0 | Misty | |
| Belgaum | 27.28 | 693.0 | 29.76 | 756.0 | 87.0 | 30.6 | 55 | W | 33 | 14.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Roorkee | 28.71 | 729.2 | 29.58 | 751.2 | 94.4 | 34.7 | 20 | SW | 2.0 | 0.9 | | | 5 | | | 0 | 0 | D clouds | |
| Agra | 29.06 | 738.0 | 29.59 | 751.7 | 100.6 | 38.1 | 18 | N | | | | | 0 | | | 0 | 0 | | |
| Nagpur | 28.60 | 726.6 | 29.60 | 752.0 | 98.8 | 37.1 | 14 | Calm | 3.1 | 1.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.29 | 743.8 | 29.65 | 753.1 | 98.1 | 36.7 | 43 | NW | 1.5 | 0.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.30 | 744.3 | 29.60 | 752.0 | 98.6 | 37.0 | 13 | Calm | 3.1 | 1.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.43 | 747.4 | 29.60 | 751.9 | 98.0 | 36.7 | 10 | W | 0.6 | 0.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.67 | 702.8 | 29.62 | 752.2 | 93.0 | 33.9 | 24 | NW | 5.9 | 2.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.62 | 752.4 | 29.70 | 754.4 | 88.6 | 31.4 | 63 | S | 10 | 4.5 | | | 1 | | | 0 | 0 | | |
| Calcutta (Alipore) | 29.65 | 753.0 | 29.67 | 753.6 | 86.6 | 30.3 | 72 | SSW | 12.0 | 5.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.34 | 745.3 | 29.74 | 755.3 | 76.9 | 24.9 | 68 | ENE | 9.6 | 4.3 | | | 6 | W | | 0.02 | 0.5 | D. clouds | |
| Chittagong | 29.69 | 754.2 | 29.78 | 756.5 | 85.7 | 29.8 | 76 | SSW | 8.7 | 3.9 | | | 2 | | | 0 | 0 | Misty | |
| Sibsagar | 29.52 | 749.8 | 29.86 | 758.5 | 72.1 | 22.3 | 85 | NE | 4.6 | 2.1 | | | 10 | W | W | 1.01 | 25. 6 | D. clouds | |
| Jubbulpore | 28.30 | 718.8 | 29.61 | 752.2 | 97.2 | 36.2 | 16 | Calm | 1.5 | 0.7 | | | 0 | | | 0 | 0 | Blue sky | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.49 | 749.1 | 29.90 | 759.5 | 55.9 | 13.3 | 49 | SW | 1.8 | 0.8 | ..... | ..... | 8 | .. ..... | ..... | 0.642 | 16.3 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.34 | 745.1 | 29.85 | 758.3 | 58.6 | 14.8 | 47 | S | ..... | ..... | 2 | ..... | 2 | SSE | ..... | 0.071 | 1.8 | ..... | Prof. Schiaparelli. |
| Padua | 29.80 | 756.8 | 29.91 | 759.6 | 55.9 | 13.3 | 47 | E | 8.7 | 3.9 | ..... | ..... | 4 | ..... | ..... | 0.008 | 0.2 | ..... | Prof. Dott. Lorenzoni. |
| Moncalieri | 28.94 | 735.0 | 29.84 | 758.0 | 54.7 | 12.6 | 33 | E | 9.4 | 4.2 | ..... | ..... | 6 | ENE | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.71 | 754.6 | 29.90 | 759.4 | 55.4 | 13.0 | 58 | SE | 11.2 | 5.0 | ..... | ..... | 10 | SE | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.95 | 710.0 | 29.86 | 758.5 | 49.5 | 9.7 | 57 | NW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.87 | 758.6 | 29.91 | 759.8 | 52.7 | 11.5 | 70 | N | 9.8 | 4.4 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.67 | 753.6 | 29.93 | 760.1 | 53.1 | 11.7 | 67 | E | ..... | ..... | 2 | ..... | 8 | WSW | ..... | 0.185 | 4.7 | ..... | Cav. F. Meucci |
| Leghorn | 29.80 | 757.0 | 29.89 | 759.2 | 58.3 | 14.6 | 44 | W | ..... | ..... | 6 | ..... | 10 | WSW | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 29.78 | 756.4 | 29.95 | 760.8 | 61.3 | 16.3 | 44 | W | 9.4 | 4.2 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.74 | 755.3 | 29.99 | 761.7 | 60.1 | 15.6 | 52 | WSW | 9.4 | 4.2 | ..... | ..... | 4 | W | ..... | 0.209 | 5.3 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.15 | 740.3 | 30.02 | 762.6 | 58.8 | 14.9 | 69 | NW? | 3.1 | 1.4 | ..... | ..... | 6 | ..... | ..... | 0.346 | 8.8 | ..... | Prof. D. Conti. |
| Cagliari | 29.74 | 755.3 | 29.93 | 760.2 | 60.1 | 15.6 | 84 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.087 | 2.2 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.79 | 756.6 | 30.04 | 763.0 | 62.6 | 17.0 | 52 | WSW | 4.3 | 1.9 | ..... | ..... | 7 | WSW | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.98 | 761.6 | 30.06 | 763.4 | 68.0 | 20.0 | 37 | WSW | 11.2 | 5.0 | ..... | ..... | 7 | SE | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.46 | 748.3 | 30.02 | 762.4 | 55.8 | 13.2 | 75 | WNW | 8.7 | 3.9 | ..... | ..... | 8 | ..... | ..... | 0.898 | 22.8 | ..... | ... o ... Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 29.91 | 759.7 | 29.93 | 760.2 | 57.3 | 14.1 | 97 | NE | 3.5 | 1.6 | ..... | ..... | 10n | ..... | ..... | 0.540 | 13.72 | Raining | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.69 | 754.1 | 29.89 | 759.2 | 62.7 | 17.1 | 94 | S | 7.5 | 3.4 | ..... | ..... | 7s | ..... | ..... | 1.420 | 36.07 | Cloudy | S. Takehayashi. |
| Tokei, (Yeddo) Observatory | 30.09 | 764.3 | 30.16 | 766.0 | 59.9 | 15.5 | 83 | SSW | 7.3 | 3.3 | ..... | ..... | 10s | ..... | ..... | 0.030 | 0.76 | Covered | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the cooperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.17 | 639.4 | 30.26 | 768.6 | 53.2 | 11.8 | 42 | SW | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | Prof. L. Perez. |
| Leon | 24.56 | 623.9 | 30.32 | 770.1 | 55.9 | 15.3 | 70 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.27 | 590.1 | 30.43 | 773.0 | 45.0 | 7.2 | 75 | NW | 0.7 | 0.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Light haze | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 51.8 | 11.0 | 58 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. V. de Leon, M. E. |
| Tlacotalpam | 30.23 | 767.7 | 30.24 | 768.0 | 70.9 | 21.6 | 91 | W | ..... | ..... | 1 | 1 | 3 | N | N | 0 | 0 | ⅛ clouded | M. M. Chàzaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | 22.63 | 574.9 | 30.29 | 769.3 | 54.5 | 12.5 | 54 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | J. Castrillon. |
| Puebla, (Catholic Institute) | 23.52 | 597.4 | 30.28 | 769.2 | 43.7 | 6.5 | 59 | ENE | 0.4 | 0.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.44 | 722.4 | 30.10 | 764.4 | 73.9 | 23.3 | 44 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

NOTE.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,586.9 m., or 5,140.8 ft.; Leon, 1,798.6 m., or 5,900.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,893 m., or 6,210.7 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,201 m., or 7,221.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 532 m., or 1,745.4 ft. The data are published as given, except the conversions, which have been revised; the instrumental correction —0.88 mm., has been applied at this office to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.93 | 760.2 | 29.93 | 760.2 | 51.3 | 10.7 | ..... | WSW | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.012 | 0.3 | ..... | |
| Groningen | 29.80 | 757.0 | 29.86 | 758.4 | 43.7 | 6.5 | ..... | NW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.89 | 759.2 | 29.89 | 759.2 | 41.7 | 5.4 | ..... | W | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.90 | 759.5 | 29.90 | 759.5 | 49.8 | 9.9 | 62 | W | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.86 | 758.5 | 29.91 | 759.7 | 52.0 | 11.1 | 51 | WNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | H. v. d. Brink. |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.53 | 750.0 | 29.58 | 751.4 | 42.4 | 5.8 | 55 | NNW | 27.7 | 12.4 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.40 | 746.8 | 29.44 | 747.8 | 37.4 | 3.0 | 59 | N | 27 | 12 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.13 | 739.9 | 29.28 | 743.6 | 40.5 | 4.7 | 53 | NNW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.69 | 754.1 | 29.73 | 755.2 | 35.6 | 2.0 | 54 | NE | 27 | 12 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p. m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.68 | 753.8 | 29.87 | 758.7 | 58.6 | 14.8 | 93 | W | 6.3 | 2.8 | ..... | ..... | 9 | ..... | ..... | 0.689 | 17.5 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.99 | 736.3 | 30.02 | 762.6 | 57.9 | 14.4 | 76 | WSW | 19.9 | 8.9 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.12 | 765.0 | 30.21 | 767.2 | 67.5 | 19.7 | 69 | W | 8.7 | 3.9 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.61 | 752.0 | 29.97 | 761.2 | 59.2 | 15.1 | 91 | SW | 27.3 | 12.2 | ..... | ..... | 10 | ..... | ..... | 0.004 | 0.1 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.86 | 758.5 | 29.93 | 760.3 | 60.8 | 16.0 | 93 | WSW | 8.7 | 3.9 | ..... | ..... | 10 | ..... | ..... | 0.488 | 12.4 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa. Com'd.t. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| Duque da Terceira, San Jose de Bissao, Senegambia | ..... | ..... | 30.06 | 763.5 | 74.3 | 23.5 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | ..... | Blue sky | C.C.da Fonseca Ferreira, Comd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, S. 3° 16′ E 8° 20 | ..... | ..... | 29.90 | 759.5 | 83.3 | 28.5 | ..... | SSE | ..... | ..... | 2 | ..... | 4 | ..... | SW | 1 | SW | D. clouds | A. J. de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. T. d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. San Jose de Bissao, Senegambia | ..... | ..... | 29.91 | 759.6 | 84.2 | 29.0 | ..... | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 2 | ..... | Blue sky | A. Ferreira, 2d Lt. F. Teixeira da Silva, Com'd't. |
| Sá da Bandeira | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Tejo, Macao, China | ..... | ..... | 29.85 | 758.2 | 70.9 | 21.6 | ..... | NNE | ..... | ..... | 4 | ..... | 4 | ..... | NNE | 1 | ..... | D. clouds | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.22 | 742.1 | 29.65 | 753.1 | 38.7 | 3.7 | 78 | SW | 36 | 16 | ..... | ..... | ..... | ..... | 10n | ..... | ..... | Raining | Astronomical Obs. |
| Wilna | 29.13 | 740.0 | 29.56 | 750.8 | 38.7 | 3.7 | 92 | S | 31 | 14 | ..... | ..... | ..... | ..... | 10n | ..... | ..... | Raining | Astronomical Obs. |
| Dorpat | 29.15 | 740.4 | 29.39 | 746.5 | 49.5 | 9.7 | 71 | SSW | 11 | 5 | ..... | ..... | ..... | ..... | 4ks;cs | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.45 | 748.0 | 29.47 | 748.4 | 55.4 | 13.0 | 53 | SSE | 18 | 8 | ..... | ..... | ..... | ..... | 2ck | ..... | ..... | Light clouds | Central Physical Obs. |
| Kieff | 29.17 | 740.8 | 29.78 | 756.3 | 67.8 | 19.9 | 37 | S | 13 | 6 | ..... | ..... | ..... | ..... | 0 | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.89 | 759.3 | 29.96 | 761.1 | 73.2 | 22.9 | 26 | Calm | 0 | 0 | ..... | ..... | ..... | ..... | 5 | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.88 | 759.0 | 29.90 | 759.5 | 63.1 | 17.3 | 71 | ENE | 9 | 4 | ..... | ..... | ..... | ..... | 0 | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.37 | 746.0 | 29.91 | 759.7 | 60.3 | 15.7 | 56 | S | 9 | 4 | ..... | ..... | ..... | ..... | 5 | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.76 | 755.8 | 29.95 | 760.8 | 77.2 | 25.1 | 28 | SE | 2 | 0.9 | ..... | ..... | ..... | ..... | 8ks | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.53 | 750.1 | 29.55 | 750.6 | 43.3 | 6.3 | 78 | NE | 13 | 6 | ..... | ..... | ..... | ..... | 0 | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.69 | 728.8 | 30.04 | 763.1 | 81.5 | 27.5 | 37 | S | 4 | 2 | ..... | ..... | ..... | ..... | 4s | ..... | ..... | Light clouds | Physical Observatory. |
| Astrakhan | 30.36 | 771.2 | 30.28 | 769.1 | 64.2 | 17.9 | 40 | SE | 13 | 6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.90 | 759.4 | 30.17 | 766.4 | 49.5 | 9.7 | 68 | SSE | 13 | 6 | ..... | ..... | ..... | ..... | 3cs | ..... | ..... | Snowing | Physical Cabinet. |
| Ekaterinburg | 29.20 | 741.8 | 30.19 | 766.8 | 44.2 | 6.8 | 66 | W | 13 | 6 | ..... | ..... | ..... | ..... | 10 | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 30.00 | 761.9 | 30.23 | 767.8 | 58.8 | 14.9 | 55 | NNE | 18 | 8 | ..... | ..... | ..... | ..... | 0 | ..... | ..... | ..... | |
| Tashkend | 28.46 | 722.9 | 30.02 | 762.4 | 61.5 | 16.4 | 57 | NW | 22 | 10 | ..... | ..... | ..... | ..... | 10 | Blank | Blank | ..... | Teich, A. M. |
| Barnaul | 29.21 | 741.9 | 29.70 | 754 3 | 53.4 | 11.9 | 60 | SW | 13 | 6 | ..... | ..... | ..... | ..... | 7 | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeniseisk | 29.21 | 742.0 | 29.50 | 749.4 | 37.4 | 3.0 | 98 | ESE | 4 | 2 | ..... | ..... | ..... | ..... | 10 | ..... | ..... | Raining | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking, (China) | 30.24 | 768.0 | 30.38 | 771.6 | 48.9 | 9.4 | 34 | Calm | 0 | 0 | ..... | ..... | ..... | ..... | 0 | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.53 | 750.1 | 29.63 | 752.6 | 40.8 | 4.9 | 96 | SE | 45 | 20 | ..... | ..... | ..... | ..... | 10n | ..... | ..... | Raining | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.79 | 756.6 | 29.90 | 759.4 | 59.7 | 15.4 | 66 | SSW | 3.2 | 1.44 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Misty | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 29.74 | 755.5 | 29.80 | 756.9 | 62.4 | 16.9 | 93 | NW | 1.5 | 0.68 | ..... | ..... | 10 | ..... | ..... | 0.094 | 2.4 | Rainy | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.91 | 683.6 | ..... | ..... | 50.5 | 10.3 | 83 | S | 13.0 | 5.76 | ..... | ..... | 9 | ..... | ..... | 0.098 | 2.5 | Almost cov'd | Domingo Martin y Perez. |
| Madrid, Royal Oservatory | 27.75 | 704.9 | ..... | ..... | 53.6 | 12.0 | 75 | W | 21.6 | 9.66 | ..... | 0 | 10 | ..... | ..... | 0 | 0 | Covered | The Staff. |
| Murcia, Met. Obs'y | 29.80 | 757.0 | 29.95 | 760.8 | 69.6 | 20.9 | 51 | ENE | 1.5 | 0.67 | ..... | 0 | 5 | ..... | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.75 | 730.2 | 29.65 | 753.1 | 52.7 | 11.5 | 96 | SW | 11.9 | 5.3 | ..... | ..... | 10 | ..... | ..... | 0.886 | 22.5 | Raining | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.08 | 764.0 | 30.15 | 765.7 | 70.6 | 21.4 | 55 | N | 18.1 | 8.1 | ..... | 1c | 5k | ..... | NNW | 0.087 | 2.2 | Fair | Benito Vines, S. J |
| Manilla, Philippine Islands | 29.74 | 755.4 | 29.79 | 756.7 | 85.8 | 29.9 | 79 | N | 15.7 | 7.0 | ..... | ..... | 10 | W | E | 0.744 | 18.9 | Raining | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.06 | 763.5 | 30.16 | 766.0 | 63.5 | 17.5 | 84 | WSW | 7.7 | 3.4 | ..... | 0 | 10 | ..... | W | 0.020 | 0.5 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W.I | 29.95 | 760.8 | 30.04 | 763.1 | 79.5 | 26.4 | 94 | S | 0 | 0 | ..... | 0 | 2k | ..... | S | 0 | 0 | Clear | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.39 | 746.5 | 29.43 | 747.5 | 34.5 | 1.4 | ..... | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.35 | 745.5 | 29.40 | 746.8 | 33.4 | 0.8 | 96 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.512 | 13.0 | ..... | |
| Hernosand | 29.15 | 740.5 | 29.20 | 741.8 | 33.1 | 0.6 | 96 | NNE | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.138 | 3.5 | ..... | |
| Stockholm | 28.90 | 734.0 | 29.08 | 738.5 | 35.8 | 2.1 | 91 | | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.732 | 18.6 | ..... | |
| Wisby | 29.06 | 738.0 | 29.12 | 739.5 | 36.3 | 2.4 | 93 | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.283 | 7.2 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 28.98 | 736.0 | 29.05 | 737.9 | 33.4 | 0.8 | 96 | NNW | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.555 | 14.10 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.49 | 723.6 | 29.94 | 760.4 | 46.0 | 7.8 | 47 | NNE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Zurich | 28.28 | 718.4 | 29.93 | 760.2 | 51.4 | 10.8 | 55 | W | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | Fair | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —0.7 mm.; Thermometer,—4.6 Cent.; Relative Humidity,—10 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,338.6 feet, and that of Zurich 470 m., or 1,542.0 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.93 | 760.3 | 70.7 | 21.5 | 29 | WSW | 7 | 5.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.20 | 767.0 | 89.6 | 32.0 | ..... | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 30.05 | 763.2 | 62.2 | 16.8 | ..... | SW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut. (Syria,) Lee Obs'y | 29.90 | 759.4 | 30.03 | 762.7 | 79.0 | 26.1 | 67 | W | ..... | ..... | 1 | ..... | 10cs | ..... | ..... | 0 | 0 | Overcast | Prof. C.V. A.Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.45 | 748.0 | 29.76 | 755.9 | 43 | 6.1 | ..... | NE | 5 | 2.2 | ..... | 0 | 5s | ..... | NE | 0 | 0 | Fair | W. R. Bigg. |
| *Chatham, N. B | 29.64 | 752.8 | 29.71 | 754.6 | 33 | 0.6 | 63 | NE | 15 | 6.7 | ..... | ..... | 10ks | ..... | NE | 0 | 0 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 29.55 | 750.6 | 29.60 | 751.8 | 31 | — 0.6 | 85 | NE | 8 | 3.6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light snow | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.50 | 749.3 | 29.70 | 754.4 | 39.0 | 3.9 | 52 | NE | ..... | ..... | 2 | 2cs | 5s | E | ..... | 0 | 0 | Cloudy | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 29.68 | 753.9 | 29.72 | 754.9 | 36.1 | 2.3 | 100 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. Bevis. |
| *Father Point, Quebec | 29.77 | 756.1 | 29.80 | 756.9 | 35 | 1.7 | 74 | NE | 19 | 8.5 | ..... | 2c | 2s | N | N | 0 | 0 | Fair | J. McWilliams. |
| Fredericton, N. B | 29.58 | 751.3 | 29.65 | 753.1 | 32.5 | 0.3 | 55 | NE | 22 | 9.8 | ..... | ..... | 10s | ..... | ..... | Inap. | Inap | Overcast | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.43 | 747.5 | 30.29 | 769.4 | 33 | 0.6 | 85 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Stewart. |
| Granton, Ontario | 28.77 | 730.7 | 29.90 | 759.4 | 37 | 2.8 | ..... | N | ..... | ..... | 1 | 1cs | 0 | ..... | ..... | 0 | 0 | Fine | James Grant. |
| *Halifax, N. S | 29.20 | 744.2 | 29.44 | 747.8 | 32 | 0.0 | 92 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0.390 | 9.91 | Light snow | F. Allison, M. A. |
| Hamilton, Ontario | 29.48 | 748.8 | 29.86 | 758.4 | 42.9 | 6.1 | 97 | NE | ..... | ..... | 1 | 10cs | 0 | NE | ..... | 0 | 0 | Hazy | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.43 | 747.5 | 29.76 | 755.9 | 45 | 7.2 | 67 | N | 4 | 1.8 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Fair | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.51 | 749.5 | 29.55 | 750.6 | 32.7 | 0.4 | 82 | N | 8 | 3.6 | ..... | ..... | 10n | ..... | ..... | 0.46 | 10.2 | Snowing | C. H. Rigby. |
| Moose Factory, Ontario | 30.18 | 766.6 | 30.22 | 767.6 | 26.2 | — 3.2 | 76 | NW | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. R. Nason. |
| *Montreal, Quebec | 29.52 | 749.8 | 29.73 | 755.1 | 37 | 2.8 | 54 | NE | 28 | 12.5 | ..... | 8cs | 2s | ..... | ..... | 0 | 0 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.19 | 741 4 | 29.90 | 759.4 | 40 | 4.4 | 48 | N | 24 | 10.7 | ..... | 2cs | 0 | N | ..... | 0 | 0 | Fair | Rev. R. Mosly. |
| Peterboro, Ontario | 29.04 | 737.6 | 29.79 | 756.7 | 43.5 | 6.4 | 78 | N | ..... | ..... | 2 | ..... | 10ks | ..... | ..... | 0 | 0 | Hazy | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.15 | 740.4 | 29.85 | 758.2 | 39 | 3.9 | 82 | NW | 10 | 4.5 | ..... | 10k | 0 | NW | ..... | 0 | 0 | Cloudy | H. Morgan. |
| Port Hastings, N. S | 29.47 | 748.5 | 29.52 | 749.8 | 31.9 | — 0.1 | ..... | NE | 4 | 1.8 | ..... | ..... | ..... | ..... | ..... | 0.30 | 7.6 | Snowing | Peter Grant. |
| Port Stanley, Ontario | 29.24 | 742.7 | 29.90 | 759.4 | 39 | 3.9 | 72 | W | 16 | 7.2 | ..... | 8ck | 0 | NW | ..... | 0 | 0 | Cloudy | M. Payne. |
| *Quebec, Quebec | 29.48 | 748.8 | 29.78 | 756.4 | 34 | 1.1 | 62 | NE | ..... | ..... | 5 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.43 | 747.5 | 29.89 | 759.2 | 40 | 4.4 | 82 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. McIntyre. |
| St. Andrews, N. B | 29.51 | 749.5 | 29.56 | 750.8 | 31 | — 0.6 | 85 | E | ..... | ..... | 4 | ..... | 10n | ..... | ..... | 0.20 | 5.1 | Snowing | Dr. Gove. |
| St. John, N. B | 29.38 | 746.2 | 29.55 | 750.6 | 30 | — 1.1 | 100 | NE | 21 | 9.4 | ..... | ..... | 10n | ..... | ..... | 0.05 | 1.3 | Light snow | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.19 | 741.4 | 29.93 | 760.2 | 37 | 2.8 | 62 | N | 20 | 8.9 | ..... | ..... | 8ks | ..... | ..... | 0 | 0 | Cloudy | K. Stewart. |
| Stayner, Ontario | 29.10 | 739.1 | 29.89 | 759.2 | 40 | 4.4 | 82 | NW | 10 | 4.5 | ..... | 10k | 0 | N | ..... | 0 | 0 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 29.57 | 751.1 | 29.87 | 758.7 | 37.7 | 3.2 | 62 | NW | 12 | 5.4 | ..... | 2cs | 3s | ..... | ..... | 0 | 0 | Fair | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.53 | 750.0 | 29.57 | 751.1 | 33 | 0.6 | 91 | NE | 8 | 3.6 | ..... | ..... | 10n | ..... | ..... | 0.17 | 4.3 | Light snow | T. C. Hill. |
| *Toronto, Ontario | 29.44 | 747.8 | 29.83 | 757.7 | 42 | 5.6 | 58 | NW | 18 | 8.0 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | Magnetic Observatory. |
| Windsor, N. S | 29.40 | 746.7 | 29.50 | 749.3 | 32.0 | 0.0 | 90 | NE | 13 | 5.8 | ..... | ..... | 10n | ..... | ..... | 0.42 | 10.7 | Snowing | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 31.0 | — 0.6 | 100 | SE | ..... | ..... | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowy | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'r 0—10. | CLOUDS. Amount. Lw'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.36 | 745.7 | 29.59 | 751.6 | 34 | 1.1 | 95 | N | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 1.36 | 34.5 | Heavy snow | |
| Alpena, Michigan | 29.36 | 745.7 | 30.02 | 762.5 | 38 | 3.3 | 54 | N | 12 | 5.4 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Atlanta, Georgia | 28.96 | 735.6 | 30.11 | 764.8 | 51 | 10.6 | 52 | W | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 29.63 | 752.6 | 29.65 | 753.1 | 41 | 5.0 | 74 | NW | 14 | 6.3 | ..... | ..... | 10s | ..... | W | 0.09 | 2.3 | Cloudy | |
| Augusta, Georgia | 29.91 | 759.7 | 30.09 | 764.3 | 50 | 10.0 | 65 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 29.69 | 754.1 | 29.74 | 755.4 | 46 | 7.8 | 54 | NW | 14 | 6.3 | ..... | 2cs | 5s | NW | NW | Inap. | Inap. | Fair | |
| Barnegat, New Jersey | 29.58 | 751.3 | 29.60 | 751.8 | 38 | 3.3 | 91 | NW | 15 | 6.7 | ..... | ..... | 10n | ..... | NW | 0.10 | 2.5 | Light rain | |
| Bismarck, Dakota | 28.33 | 719.6 | 30.18 | 766.6 | 34 | 1.1 | 79 | E | 6 | 2.7 | ..... | 5ck | 0 | SW | ..... | 0 | 0 | Fair | |
| Boerne, Texas | 28.80 | 731.5 | 30.18 | 766.6 | 40 | 4.4 | 31 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boise City, Idaho | 26.86 | 682.2 | 29.82 | 757.4 | 56 | 13.3 | 75 | NW | 8 | 3.6 | ..... | ..... | 10n | ..... | W | Inap. | Inap. | Light rain | |
| Boston, Massachusetts | 29.31 | 744.5 | 29.46 | 748.3 | 30 | — 1.1 | 100 | N | 23 | 10.3 | ..... | ..... | 10n | ..... | Calm | 1.39 | 35.3 | Heavy snow | |
| Brackettville, Texas | 29.09 | 738.9 | 30.13 | 765.3 | 57 | 13.9 | 81 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 29.20 | 741.7 | 30.25 | 768.3 | 31 | — 0.6 | 89 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Brownsville, Texas | 30.21 | 767.3 | 30.25 | 768.3 | 65 | 18.3 | 54 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.08 | 738.6 | 29.78 | 756.4 | 40.5 | 4.7 | 53 | NW | 8 | 3.6 | ..... | 10cs | ..... | N | ..... | 0 | 0 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 63 | 17.2 | 24 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.35 | 745.5 | 29.64 | 752.8 | 35 | 1.7 | 61 | N | 15 | 6.7 | ..... | ..... | 10s | ..... | NE | 0.31 | 7.9 | Cloudy | |
| Cairo, Illinois | 29.75 | 755.6 | 30.14 | 765.5 | 53 | 11.7 | 67 | S | 1 | 0.4 | ..... | 2ck | ..... | NW | ..... | 0 | 0 | Fair | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.25 | 641.3 | 30.05 | 763.3 | 61 | 16.1 | 17 | N | 8 | 3.6 | ..... | 10k | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 53 | 11.7 | 42 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.45 | 697.2 | 30.02 | 762.5 | 33 | 0.6 | 70 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 29.82 | 757.4 | 29.82 | 757.4 | 50 | 10.0 | 58 | NW | 17 | 7.6 | ..... | ..... | 10s | ..... | NW | 0.02 | 0.5 | Cloudy | |
| Cape Henry, Virginia | 29.75 | 755.6 | 29.77 | 756.1 | 49 | 9.4 | 51 | W | 19 | 8.5 | ..... | 2ck | 1ks | W | W | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 29.86 | 758.4 | 29.88 | 758.9 | 49 | 9.4 | 57 | NW | 28 | 12.5 | ..... | 10ck | 0 | W | ..... | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 29.59 | 751.6 | 29.62 | 752.3 | 43 | 6.1 | 75 | NW | 32 | 14.3 | ..... | ..... | 10ks | ..... | NW | 0 | 0 | Cloudy | |
| Castroville, Texas | 29.47 | 748.5 | 30.21 | 767.3 | 47 | 8.3 | 62 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.00 | 762.0 | 30.06 | 763.5 | 52 | 11.1 | 60 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 24.06 | 611.1 | 30.00 | 762.0 | 35 | 1.7 | 70 | W | 4 | 1.8 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.36 | 745.7 | 30.07 | 763.8 | 42 | 5.6 | 66 | NE | 5 | 2.2 | ..... | 0 | 8ks | ..... | N | 0 | 0 | Cloudy | |
| Cincinnati, Ohio | 29.43 | 747.5 | 30.10 | 764.5 | 42 | 5.6 | 54 | NW | 8 | 3.6 | ..... | 1k | 0 | NW | ..... | 0 | 0 | Clear | |
| Cleveland, Ohio | 29.21 | 741.9 | 29.94 | 760.5 | 39 | 3.9 | 64 | W | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Coleman City, Texas | 28.42 | 721.9 | 30.12 | 765.0 | 50 | 10.0 | 52 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Columbus, Ohio | 29.15 | 740.4 | 30.01 | 762.2 | 38 | 3.3 | 63 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Concho, Texas | 28.29 | 718.6 | 30.02 | 762.5 | 43 | 6.1 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.79 | 756.7 | 30.27 | 768.8 | 52 | 11.1 | 66 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.34 | 745.2 | 29.99 | 761.7 | 43 | 6.1 | 67 | NE | 10 | 4.5 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.36 | 644.1 | ..... | ..... | 48 | 8.9 | 29 | SE | 8 | 3.6 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Decatur, Texas | 29.03 | 737.3 | 30.20 | 767.1 | 60 | 15.6 | 65 | SW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.41 | 747.0 | 30.21 | 767.3 | 57 | 13.9 | 58 | SW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.81 | 630.2 | 30.03 | 762.8 | 47 | 8.3 | 62 | NW | 3 | 1.3 | ..... | 5ck | 2s | W | Calm | 0 | 0 | Fair | |
| Des Moines, Iowa | 29.19 | 741.4 | 30.08 | 764.0 | 45 | 7.2 | 61 | NE | 16 | 7.2 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Detroit, Michigan | 29.29 | 744.0 | 29.98 | 761.5 | 36 | 2.2 | 71 | NW | 6 | 2.7 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Dodge City, Kansas | 27.46 | 697.5 | 29.72 | 754.9 | 53 | 11.7 | 36 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.36 | 745.7 | 30.07 | 763.8 | 43 | 6.1 | 75 | NE | 5 | 2.2 | ..... | 0 | 5s | ..... | N | 0 | 0 | Fair | |
| Duluth, Minnesota | 29.53 | 750.0 | 30.24 | 768.1 | 35 | 1.7 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.45 | 748.0 | 30.21 | 767.3 | 51 | 10.6 | 59 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.45 | 748.0 | 29.52 | 749.8 | 30 | — 1.1 | 89 | NE | 29 | 13.0 | ..... | ..... | 10n | ..... | NE | 0.62 | 15.7 | Light snow | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 51 | 10.6 | 79 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| El Paso, Texas | 26.33 | 668.8 | ..... | ..... | 55 | 12.8 | 22 | NE | 4 | 1.8 | ..... | 5cs | 0 | NE | ..... | 0 | 0 | Fair | |
| Erie, Pennsylvania | 29.13 | 739.9 | 29.85 | 758.2 | 40 | 4.4 | 73 | W | 10 | 4.5 | ..... | 10c | 0 | NE | ..... | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.47 | 748.5 | 30.15 | 765.8 | 32 | 0.0 | 69 | N | 6 | 2.7 | ..... | 5c | 0 | N | ..... | 0 | 0 | Fair | |
| Florence, Arizona | 28.48 | 723.4 | 30.08 | 764.0 | 63 | 17.2 | 38 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Fort Buford, Dakota | 28.02 | 711.7 | ..... | ..... | 42 | 5.6 | 58 | SE | 14 | 6.3 | ..... | 6c;ck | 0 | Calm;SE | ..... | 0 | 0 | Fair | |
| Fort Craig, New Mexico | 25.63 | 651.0 | 29.69 | 754.1 | 48 | 8.9 | 14 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.34 | 643.6 | 30.30 | 769.6 | 47 | 8.3 | 28 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.64 | 751.8 | 30.14 | 765.5 | 55 | 12.8 | 50 | SE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.92 | 734.6 | 30.22 | 767.6 | 47 | 8.3 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.33 | 694.2 | ..... | ..... | 50 | 10.0 | 64 | SE | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort McKavett, Texas | 27.94 | 709.7 | 29.89 | 759.2 | 52 | 11.1 | 35 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.74 | 755.4 | 29.78 | 756.4 | 8 | —13.3 | 100 | NE | 3 | 1.3 | ..... | ..... | 10s | ..... | NE | Inap. | Inap. | Cloudy | |
| Fort Sill, Indian Territory | 28.95 | 735.3 | 30.08 | 764.0 | 50 | 10.0 | 72 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Stevenson, Dakota | 28.33 | 719.6 | ..... | ..... | 35 | 1.7 | 70 | E | 5 | 2.2 | ..... | 4ck | 6 | E | ..... | 0 | 0 | Fair | |
| Fredericksburg, Texas | 28.48 | 723.4 | 30.03 | 762.8 | 63 | 17.2 | 38 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 30.24 | 768.1 | 30.28 | 769.1 | 63 | 17.2 | 47 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Graham, Texas | 29.12 | 739.6 | 30.21 | 767.3 | 45 | 7.2 | 68 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.41 | 747.0 | 30.08 | 764.0 | 40 | 4.4 | 56 | NE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.26 | 743.2 | 30.05 | 763.3 | 43 | 6.1 | 51 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Indianola, Texas | 30.28 | 769.1 | 30.30 | 769.6 | 62 | 16.7 | 72 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.99 | 736.3 | 30.13 | 765.3 | 60 | 15.6 | 49 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.13 | 765.3 | 30.15 | 765.8 | 58 | 14.4 | 58 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.34 | 745.2 | 29.95 | 760.7 | 52 | 11.1 | 54 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Key West, Florida | 30.11 | 764.8 | 30.14 | 765.5 | 68 | 20.0 | 56 | N | 16 | 7.2 | ..... | 5k | 0 | N | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 29.75 | 755.6 | 29.77 | 756.1 | 50 | 10.0 | 45 | NW | 24 | 10.7 | ..... | 2cs | 0 | W | ..... | 0 | 0 | Fair | |
| Knoxville, Tennessee | 29.10 | 739.1 | 30.12 | 765.0 | 46 | 7.8 | 62 | SW | 3 | 1.3 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 29.36 | 745.7 | 30.10 | 764.5 | 48 | 8.9 | 36 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.17 | 664.7 | 30.32 | 770.1 | 46 | 7.8 | 40 | Calm | 0 | 0 | ..... | 8c | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Laredo, Texas | 29.80 | 756.5 | 30.14 | 765.5 | 66 | 18.9 | 50 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.19 | 741.4 | 30.03 | 762.8 | 53 | 11.7 | 48 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.69 | 754.1 | 30.03 | 762.8 | 55.5 | 13.3 | 84 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Louisville, Kentucky | 29.53 | 750.0 | 30.10 | 764.5 | 48 | 8.9 | 56 | NW | 2 | 0.9 | ..... | ..... | 10n;sm' | ..... | NW;Calm | Inap. | Inap. | Light rain | |
| Lynchburg, Virginia | 29.16 | 740.7 | 29.84 | 757.9 | 49 | 9.4 | 43 | NW | 8 | 3.6 | ..... | 0 | 5ks | ..... | W | 0 | 0 | Fair | |
| Madison, Wisconsin | 29.06 | 738.1 | 30.06 | 763.5 | 43 | 6.1 | 75 | NE | 6 | 2.7 | ..... | 2k | 0 | NW | ..... | 0 | 0 | Fair | |
| Marquette, Michigan | 29.44 | 747.8 | 30.16 | 766.1 | 37 | 2.8 | 71 | NW | 12 | 5.4 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Mason, Texas | 28.60 | 726.4 | 30.13 | 772.9 | 44 | 6.7 | 60 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.87 | 758.7 | 30.19 | 766.8 | 54 | 12.2 | 62 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.36 | 745.7 | 30.10 | 764.5 | 40 | 4.4 | 65 | N | 8 | 3.6 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Mobile, Alabama | 30.26 | 768.6 | 30.30 | 769.6 | 51 | 10.6 | 62 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 30.03 | 762.8 | 30.27 | 768.8 | 50 | 10.0 | 64 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.83 | 732.3 | 29.89 | 759.2 | 40 | 4.4 | 56 | N | 9 | 4.0 | ..... | 0 | 5ks | ..... | N | 0.05 | 1.3 | Fair | |
| Mt. Washington, N. H. | 23.09 | 586.5 | 29.45 | 748.0 | 11 | —11.7 | 100 | NE | 80 | 35.8 | ..... | ..... | Fog | ..... | NE | 0.61 | 15.5 | Foggy | |
| Nashville, Tennessee | 29.61 | 752.1 | 30.15 | 765.8 | 52 | 11.1 | 60 | Calm | 0 | 0 | ..... | 1c | Sm'e | NW | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 29.42 | 747.2 | 29.53 | 750.0 | 39 | 3.9 | 91 | NW | 5 | 2.2 | ..... | ..... | 10s | ..... | N | 1.10 | 27.9 | Threatening | |
| New London, Connecticut | 29.45 | 748.0 | 29.50 | 749.3 | 37 | 2.8 | 81 | N | 11 | 4.9 | ..... | ..... | 10n | ..... | N | 0.89 | 22.6 | Light snow | |
| New Orleans, Louisiana | 30.23 | 767.8 | 30.29 | 769.4 | 59 | 15.0 | 70 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.39 | 746.5 | 29.41 | 747.8 | 35 | 1.7 | 90 | NW | 18 | 8.0 | ..... | ..... | 10n | ..... | NW | 0.77 | 19.6 | Light rain | |
| New York, New York | 29.42 | 747.2 | 29.59 | 751.6 | 38 | 3.3 | 90 | NW | 10 | 4.5 | ..... | ..... | 10n;fog | ..... | Calm | 0.31 | 7.9 | Light rain | |
| Norfolk, Virginia | 29.73 | 755.1 | 29.79 | 756.7 | 48 | 8.9 | 49 | NW | 12 | 5.4 | ..... | 10ck | 0 | W | ..... | 0 | 0 | Cloudy | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER | | | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | | WEATHER | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Corrected for instrum'tal error and temperature. | | Reduced to sea-level. | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10 | 0—10 | 0—10. | From— | From— | Inches. | Millimeters. | | |
| North Platte, Nebraska | 27.18 | 690.4 | 29.76 | 755.9 | 46 | 7.8 | 43 | E | 14 | 6.3 | | 10cs | | Calm | | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 29.69 | 754.1 | 29.73 | 755.1 | 36.0 | 2.2 | 90 | S | 3 | 1.3 | | 0 | 4s | | S | 0 | 0 | Fair | |
| Omaha, Nebraska | 28.98 | 736.1 | 30.10 | 764.5 | 48 | 8.9 | 63 | N | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Oswego, New York | 29.42 | 747.2 | 29.74 | 755.4 | 39 | 3.9 | 64 | N | 16 | 7.2 | | | 10s | | | 0.11 | 2.8 | Cloudy | |
| Pembina, Dakota | 29.39 | 746.5 | 30.25 | 768.3 | 30 | — 1.1 | 100 | NW | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Philadelphia, Pa | 29.58 | 751.3 | 29.63 | 752.6 | 41 | 5.0 | 82 | NW | 23 | 10.3 | | | 10n | | NW | 0.02 | 0.5 | Light rain | |
| Phœnix, Arizona | 28.78 | 731.0 | 30.54 | 775.7 | 66 | 18.9 | 28 | E | 3 | 1.3 | | | 10s | | W | 0 | 0 | Cloudy | |
| Pike's Peak, Colorado | 17.88 | 454.1 | 30.09 | 764.3 | 18 | — 7.8 | 22 | W | 42 | 18.8 | | 8cs | 0 | W | | 0 | 0 | Cloudy | |
| Pioche, Nevada | 23.90 | 607.0 | 29.68 | 753.9 | 49 | 9.4 | 18 | S | 18 | 8.0 | | 8cs | 2ks | SW | S | 0 | 0 | Cloudy | |
| Pittsburg, Pennsylvania | 29.07 | 738.4 | 29.89 | 759.2 | 39 | 3.9 | 64 | NW | 12 | 5.4 | | 0 | Sm'e | | Calm | 0 | 0 | Smoky | |
| Port Huron, Michigan | 29.26 | 743.2 | 29.94 | 760.5 | 40 | 4.4 | 56 | N | 12 | 5.4 | | 10cs | 0 | W | | 0 | 0 | Cloudy | |
| Portland, Maine | 29.46 | 748.3 | 29.51 | 749.5 | 32 | 0.0 | 89 | N | 25 | 11.2 | | | 10n | | Calm | 0.71 | 18.0 | Light snow | |
| Portland, Oregon | 29.73 | 755.1 | 29.83 | 757.7 | 43.3 | 6.3 | 88 | S | 3 | 1.3 | | 0 | 5s | | S | 0 | 0 | Fair | |
| Prescott, Arizona | 24.74 | 628.4 | 30.10 | 764.5 | 53 | 11.7 | 14 | W | 8 | 3.6 | | 10cs | 0 | W | | 0 | 0 | Cloudy | |
| Pilot Point, Texas | 29.43 | 747.5 | 30.26 | 768.6 | 63 | 17.2 | 67 | SE | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Punta Rassa, Florida | 30.17 | 766.3 | 30.19 | 766.8 | 62 | 16.7 | 46 | N | 20 | 8.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Red Bluff, California | 29.46 | 748.3 | 29.81 | 757.2 | 53 | 11.7 | 86 | SE | 14 | 6.3 | | | 10ks | | SE | 0.38 | 9.7 | Cloudy | |
| Rio Grande City, Texas | 30.08 | 764.0 | 30.31 | 769.9 | 51 | 10.6 | 72 | E | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Rochester, New York | 29.13 | 739.9 | 29.74 | 755.4 | 41 | 5.0 | 57 | NE | 9 | 4.0 | | | 10s | | Calm | 0.01 | 0.3 | Cloudy | |
| Roseburg, Oregon | 29.24 | 742.7 | 29.81 | 757.2 | 43.0 | 6.1 | 96 | E | 3 | 1.3 | | 0 | 8s | | SW | 0.38 | 9.7 | Cloudy | |
| Sacramento, California | 29.82 | 757.4 | 29.90 | 759.4 | 51 | 10.6 | 79 | S | 8 | 3.6 | | | 10s | | Calm | 0.56 | 14.2 | Cloudy | |
| St. Louis, Missouri | 29.45 | 748.0 | 30.02 | 762.5 | 64 | 12.2 | 43 | SW | 6 | 2.7 | | 0 | Sm'e | | Calm | 0 | 0 | Clear | |
| St. Marks, Florida | 30.21 | 767.3 | 30.23 | 767.8 | 53 | 11.7 | 54 | N | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.28 | 743.7 | 30.12 | 765.0 | 47 | 8.3 | 61 | N | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.44 | 646.2 | 29.77 | 756.1 | 58 | 14.4 | 27 | SE | 5 | 2.2 | | | 10ks | | SW | 0 | 0 | Cloudy | |
| San Antonio, Texas | 29.56 | 750.8 | 30.17 | 766.3 | 50 | 10.0 | 65 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| San Diego, California | 29.88 | 758.9 | 30.05 | 763.3 | 55 | 12.8 | 93 | E | 5 | 2.2 | | 0 | 5s | | W | 0 | 0 | Fair | |
| Sandusky, Ohio | 29.30 | 744.2 | 29.98 | 761.5 | 42 | 5.6 | 66 | NW | 18 | 8.0 | | 5ck | 0 | N | | 0 | 0 | Fair | |
| Sandy Hook, New Jersey | 29.56 | 750.8 | 29.59 | 751.6 | 39 | 3.9 | 91 | NW | 18 | 8.0 | | | 10n | | NW | 0.44 | 11.2 | Light rain | |
| San Francisco, California | 29.87 | 758.7 | 29.93 | 760.2 | 52.8 | 11.6 | 80 | S | 4 | 1.8 | | | 10s | | Calm | 0.06 | 1.5 | Cloudy | |
| Santa Fé, New Mexico | 23.38 | 593.8 | 29.92 | 760.0 | 44 | 6.7 | 30 | NE | 4 | 1.8 | | 5ck | 0 | SW | | 0 | 0 | Fair | |
| Savannah, Georgia | 30.02 | 762.5 | 30.11 | 764.8 | 58 | 14.4 | 53 | W | 8 | 3.6 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Shreveport, Louisiana | 30.03 | 762.8 | 30.25 | 768.3 | 53 | 11.7 | 86 | NW | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Silver City, New Mexico | 24.38 | 619.2 | 30.64 | 778.2 | 42 | 5.6 | 49 | SE | 3 | 1.3 | | 2c | 5s | Calm | Calm | 0 | 0 | Fair | |
| Smithville, North Carolina | 29.94 | 760.5 | 29.98 | 761.5 | 50 | 10.0 | 58 | NW | 10 | 4.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.40 | 746.7 | 29.53 | 750.0 | 36 | 2.2 | 100 | N | 8 | 3.6 | | | 10n | | NE | 1.66 | 42.2 | Light snow | |
| Stockton, Texas | 27.11 | 688.6 | 30.11 | 764.8 | 51 | 10.6 | 46 | SE | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.39 | 746.5 | 29.45 | 748.0 | 33 | 0.6 | 100 | NE | 40 | 17.9 | | | 10n | | NE | 0.68 | 17.3 | Light rain | |
| Toledo, Ohio | 29.29 | 744.0 | 29.98 | 761.5 | 43 | 6.1 | 59 | NW | 8 | 3.6 | | 2c | 0 | NW | | 0 | 0 | Clear | |
| Tucson, Arizona | 27.56 | 700.0 | 30.11 | 764.8 | 61 | 16.1 | 35 | SE | 4 | 1.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Umatilla, Oregon | 29.44 | 747.8 | 29.93 | 760.2 | 43.0 | 6.1 | 92 | E | 4 | 1.8 | | | 10s | | Calm | 0.23 | 5.8 | Cloudy | |
| Unalashka, Aleutian Islands | | | | | 33 | 0.6 | 100 | NE | | | 2 | | 10s | | NE | 0 | 0 | Cloudy | |
| Uvalde, Texas | 29.38 | 746.2 | 30.20 | 767.1 | 55 | 12.8 | 39 | E | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 30.06 | 763.5 | 30.32 | 770.1 | 51 | 10.6 | 72 | SW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Virginia City, Montana | 24.04 | 610.6 | 29.52 | 749.8 | 49 | 9.4 | 51 | SW | 1 | 0.4 | | | 10s | | Calm | 0.01 | 0.3 | Cloudy | |
| Visalia, California | 29.57 | 751.1 | 29.94 | 760.5 | 58 | 14.4 | 70 | Calm | 0 | 0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Washington, D. C. | 29.65 | 753.1 | 29.77 | 756.1 | 44 | 6.7 | 60 | NW | 9 | 4.0 | | 2ck | 5ks | NW | NW | Inap | Inap. | Fair | |
| Wickenburg, Arizona | | | | | 56 | 13.3 | 40 | NW | | | 1 | | 10ks | | W | 0 | 0 | Threatening | |
| Wilmington, N. Carolina | 29.85 | 758.2 | 29.93 | 760.2 | 51 | 10.6 | 46 | W | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.40 | 645.2 | 29.76 | 755.9 | 47 | 8.3 | 77 | SE | 8 | 3.6 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 29.32 | 744.7 | 29.36 | 745.7 | 34 | 1.1 | 90 | N | 40 | 17.9 | | | 10n | | NE | 0.59 | 15.0 | Light snow | |
| Yankton, Dakota | 28.90 | 734.0 | 30.22 | 767.6 | 39 | 3.9 | 73 | NE | 2 | 0.9 | | 5c | 0 | NW | | 0 | 0 | Fair | |
| Yuma, Arizona | 29.74 | 755.4 | 29.90 | 759.4 | 64 | 17.8 | 39 | NE | 1 | 0.4 | | 2cs | 5ks | Calm | SW | 0 | 0 | Fair | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.58 | 725.9 | 29.99 | 761.7 | 54 | 12.2 | 26 | | | | | | | | | | | | J. B. Gordon. |
| Havana, Cuba, W. I | 30.08 | 764 0 | 30.13 | 765.3 | 71 | 21.7 | 49 | N | 12.0 | 5.4 | | 0 | 2ks | | N | 0.04 | 1.0 | Cloudy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | | | | | | | | | | | | | | | | | | | James Gall. |
| Medellin, Colombia, S. A | 25.28 | 642.1 | | | 66.2 | 19.0 | 90 | Calm | | | 0 | 6cs | 4ks | | | 0.45 | 11.4 | | Thomas Herran. |
| Navassa, W. I | 29.94 | 760.5 | 30.02 | 762.5 | 80 | 26.7 | | SE | 9.2 | 4.1 | | | | | | 0 | 0 | Fair | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.04 | 763.0 | 30.04 | 763.0 | 79 | 26.1 | 87 | E | | | 2 | 3c | 5k | E | | 0.080 | 2.03 | Fair | C. J. Hering. |
| Santiago de Cuba, W. I | | | | | | | | | | | | | | | | | | | Robert Mason. |
| St. Thomas, W. I | | | | | | | | | | | | | | | | | | | G. O. Gellich. |
| York Factory, B. A | 30.16 | 766 1 | 30.21 | 767.3 | 24.6 | — 4.4 | 94 | SE | 11 | 4.9 | | 2ck | 2s | E | SE | 0 | 0 | Fair | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m., Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 m.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.81 | 757.2 | 52 | 11.1 | 51 | 10.6 | 86 | SSW | 12 | 5.4 | ..... | ..... | 10 | ..... | SW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Pensacola, Fla. | 30.35 | 770.9 | 52 | 11.1 | 52 | 11.1 | 73 | N | 10 | 4.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 29.52 | 749.8 | 52 | 11.1 | 30 | — 1.1 | 90 | NNE | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | 1.3 | 26. | ..... | ..... | Rain & snow | |
| Naval Hospital. Yokohama, Japan.....* | 30.16‡ | 766.1‡ | ..... | ..... | 59.2 | 15.1 | 87 | SW | ..... | ..... | 3 | ..... | 10ks; n | ..... | SW | Slight | Slight | ..... | ..... | Gloomy..... | |
| Adams, Panama .....*.. | 29.97 | 761.2 | 81 | 27.2 | 79 | 26.1 | 95 | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Fair..... | |
| Alaska, Esquimault, Vancouver I. | 29.74‡ | 755.4‡ | ..... | ..... | 40 | 4.4 | 83 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Blue sky..... | |
| Alliance, Naples, Italy..... | 29.99‡ | 761.7‡ | ..... | ..... | 59 | 15.0 | 58 | SW | ..... | ..... | 1–2 | ..... | 10 | ..... | S;W | ..... | ..... | Light | S | Threatening | |
| Ashuelot, Hong-Kong, China. ..*. | 29.84‡ | 759.9‡ | ..... | ..... | 73 | 22.8 | 95 | ENE | ..... | ..... | 1 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | ..... | ..... | |
| Canonicus, New Orleans, La.....*. | 30.26 | 768.6 | 44 | 6.7 | 63 | 17.2 | 46 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Colorado, New York, N. Y..... | 29.57 | 751.1 | 39 | 3.9 | 39 | 3.9 | 82 | NW | 9 | 4.0 | ..... | ..... | 10 | ..... | NNW | 0.19 | 4.8 | ..... | ..... | Drizzling..... | |
| Constitution N. 30° 11′, W. 18° 23′. ..... | 30.29‡ | 769.4‡ | ..... | ..... | 64 | 17.8 | 100 | SW | ..... | ..... | 1 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | NW | Clear..... | |
| Despatch, Genoa, Italy..... | 29.87‡ | 758.7‡ | ..... | ..... | 56 | 13.3 | 51 | ESE | ..... | ..... | 3 | ..... | 8 | ..... | SE | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Essex, S. 35° 23′, W. 54° 40′....*. | 29.97 | 761.2 | 68 | 20.0 | 65 | 18.3 | 100 | SE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Long | ..... | Clear..... | |
| Franklin, Norfolk, Va.....*. | 29.90 | 759.4 | 61 | 16.1 | 48 | 8.9 | 56 | W | 16.8 | 7.5 | ..... | ..... | 10 | ..... | NW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Gettysburg, Genoa, Italy .....*. | 29.83‡ | 757.7‡ | ..... | ..... | 57 | 13.9 | 81 | E | ..... | ..... | 3–4 | ..... | 10 | ..... | SE | 0 | 0 | Smooth | ..... | Overcast. ..... | |
| Hartford, Buenos Ayres, S. A.....*. | 30.04 | 763.0 | 65 | 18.3 | 60 | 15.6 | 71 | WNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear ..... | |
| Michigan, Erie, Pa.....†. | 29.84‡ | 757.9‡ | ..... | ..... | 49 | 9.4 | 85 | W | ..... | ..... | 2 | ..... | 8 | ..... | W | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monocacy. Shanghai, China.....*. | 29.93‡ | 760.2‡ | ..... | ..... | 66 | 18.9 | 89 | S | ..... | ..... | 1 | ..... | 2 | ..... | S | ..... | ..... | ..... | ..... | Fair ..... | |
| Monongahela N. 25° 23′, E. 146° 53′....*. | 30.07‡ | 763.8‡ | ..... | ..... | 73 | 22.8 | 76 | ENE | ..... | ..... | 4 | ..... | kn | ..... | N;E | 0 | 0 | Mod'ate | ENE | Showery ..... | |
| New Hampshire, Port Royal, S. C.....*. | 30.10 | 764.5 | 56 | 13.3 | 55 | 12.8 | 62 | WNW | 19 | 8.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Onward, Callao, Peru.....†*. | 30.09 | 764.3 | ..... | ..... | 68 | 20.0 | 84 | S | ..... | ..... | 2 | ..... | 8 | ..... | S | ..... | ..... | Smooth | W | Cloudy..... | |
| Palos, Ta-Koo, Pei-ho river, China.....* | 30.14 | 765.5 | 51 | 10.6 | 44 | 6.7 | 76 | SW | ..... | ..... | 3 | ..... | 2 | ..... | N;W | ..... | ..... | ..... | ..... | Clear ..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 46 | 7.8 | 84 | WNW | ..... | ..... | 3 | ..... | 8 | ..... | SE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Pensacola. Iquique, Peru..... | 30.03‡ | 762.8‡ | ..... | ..... | 64 | 17.8 | 89 | NE | 1 | 0.4 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | Smooth | SSW | Clear..... | |
| Plymouth. Portsmouth, N. H..... | 29.52‡ | 749.8‡ | ..... | ..... | 32 | 0.0 | 100 | NNE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Snowing..... | |
| Powhatan, Norfolk, Va..... | 29.80‡ | 756.9‡ | ..... | ..... | 49 | 9.4 | 50 | WNW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Quinnebaug, Algiers, Algeria..... | 30.07‡ | 763.8‡ | ..... | ..... | 70 | 21.1 | 52 | WNW | ..... | ..... | 3 | ..... | 2 | ..... | WNW | ..... | ..... | ..... | ..... | Fair ..... | |
| Ranger. Takoro, Formosa I. ..*. | 29.84‡ | 757.9‡ | ..... | ..... | 82 | 27.8 | 70 | NW | ..... | ..... | 2 | ..... | 5 | ..... | Calm | ..... | ..... | Smooth | ..... | Clear?..... | |
| Richmond. N. 6° 07′ E. 81° 09′ ..... | 29.80‡ | 756.9‡ | ..... | ..... | 84 | 28.9 | 91 | SW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Long | SW | Clear..... | |
| Rio Bravo, Brownsville, Texas..... | 30.22 | 767.6 | 55 | 12.8 | 55 | 12.8 | 93 | WNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Santee, Annapolis, Md... ..... | 29.73‡ | 755.1‡ | ..... | ..... | 45 | 7.2 | 92 | NW | ..... | ..... | 4 | ..... | 10 | ..... | NW | 0 | 0 | ..... | ..... | Cloudy ..... | |
| Saratoga, Horta Bay, Fayal, Azores. | 29.83‡ | 757.7‡ | ..... | ..... | 63 | 17.2 | 94 | W | ..... | ..... | 4–6 | ..... | 10 | ..... | E | Heavy | Heavy | Mod'ate | SW | Showery..... | |
| St. Louis, League Island, Pa..... | 29.58 | 751.3 | 60 | 15.6 | 43 | 6.1 | 83 | NW | 30 | 13.4 | ..... | ..... | 10 | ..... | NW | 0.1 | 3. | ..... | ..... | Cloudy..... | |
| Trenton Villafranca, France...*. | 29.81‡ | 757.2‡ | ..... | ..... | 65 | 18.3 | 68 | SE | ..... | ..... | 1–2 | ..... | 2 | ..... | NE | 0 | 0 | Mod'ate | S | Fair ..... | |
| Tuscarora. Acapulco, Mexico.....*. | 29.94‡ | 761.2‡ | ..... | ..... | 73 | 22.8 | 76 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Vandalia Norfolk, Va... ..... ....†. | 29.80‡ | 756.9‡ | ..... | ..... | 49 | 9.4 | 78 | WNW | ..... | ..... | 4 | ..... | 2 | ..... | NNE | ..... | ..... | Smooth | ..... | D. clouds..... | |
| Wabash, Boston, Mass..... | 29.49‡ | 749.0‡ | ..... | ..... | 32 | 0.0 | 79 | NW | 11 | 4.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Snowing..... | |
| Wyoming, N. 34° 35′ E. 33° 20′.....*. | 30.02‡ | 762.5‡ | ..... | ..... | 70 | 21.1 | 95 | WNW | ..... | ..... | 0–3 | ..... | 10 | ..... | NW | ..... | ..... | Smooth | NW | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noön, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From - | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| §S. S. City of Tokio, Capt. Maury N. 34° 39′, E. 167° 57′ | | 30.29‡ | 769.4‡ | 63 | 17.2 | | SW | | | 3 | | 5k | | W | | Heavy | NW | Rainy | L. B. Walls. |
| S. S. Colima, Manzanillo, Mexico | †. | 30.01‡ | 762.2‡ | 67 | 19.4 | | Calm | | | 0 | | 0 | | | * 0 | Very Small | W | Misty | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota, Capt. H. G. Morse, | | | | | | | | | | | | | | | | | | | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Granada, Capt. Austin. | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, Sydney, N. S. W. | | 30.40‡ | 772.1‡ | | | | S | | | 1 | | | | S | | | | Fine | R. C. Ghest, 1st Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office. §The date of the S. S. City of Tokio is uncertain, and may be in error one day.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer. | | | | | | | | | | | | | | | | | | | |
| S. S. Gaelic, N. 44° 44′, W. 168° 32′ | *. | 29.76‡ | 756.4‡ | 42 | 5.6 | | W | | | 5 | | k | | W | Blank | High | W | Squally | J. A. Thompson, 2d Off'r |
| S. S. Oceanic, Capt J. Metcalf, N. 26° 07′, E. 121° 15′ | | 29.90‡ | 759.4‡ | 64 | 17.8 | 94 | Var. | | | 2 | | 10n | | | | Smooth | | Foggy | Capt. W. H. Kidley |
| | | | | | | | | | | | | | | | | | | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the S. S. Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the co-operation of A. Schumacher & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 51° 20′, E. 1° 47′ | | 29.96‡ | 761.0‡ | 64.0 | 17.8 | 78 | E | | | 2 | | 0 | | | 0 | Smooth | E | Clear | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 37° 57′, W. 72° 00′ | | 29.61‡ | 752.1‡ | | | | NW | | | 6 | | 10 | | NW | | Long | NW | Raining | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

| NAMES OF VESSELS. | True course toward. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | L'w'r | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N 47° 05', W 34° 56' | | 29.63‡ | 752.6‡ | 46 | 7.8 | | NW | | | 8 | | 9 | | NW | Mod'ate | Fresh | | Cloudy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud-direction as toward instead of from; sea-swell in general terms, as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | J. Powell, 4th Officer. |
| S. S. Peruvian | | | | | | | | | | | | | | | | | | | |
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Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MARINE SERIES. (Miscellaneous.)** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller | | | | | | | | | | | | | | | | | | | Capt. James Jorgensen. |
| Brigantine "George of Halifax" | | | | | | | | | | | | | | | | | | | Willard N. Pratt. |
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Note.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated. respectively by the letters c, k, s, n, d, f, p, hz., fg. and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$,) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 20, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer, corrected for instrum'tal error and temperature. Inches. | Barometer, corrected for instrum'tal error and temperature. Millimeters. | Barometer, reduced to sea-level. Inches. | Barometer, reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 30.00 | 761.9 | 72.3 | 22.4 | 72 | Calm | | | 0 | | 8 | | | 0 | 0 | Very cloudy | Kesxuche. |
| Algiers | | | 29.85 | 758.2 | 74.5 | 23.6 | 44 | WSW | | | 3 | | 2 | | | 0 | 0 | Fair | Tourillere. |
| La Calle | | | 29.87 | 758.6 | 74.7 | 23.7 | 64 | ESE | | | 1 | | 2 | | | 0 | 0 | Fair | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 30.08 | 764.0 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 29.99 | 761.7 | 74.7 | 23.7 | 18 | NW | | | 2 | | 2 | | | 0 | 0 | Fair | Herbin. |
| Tebessa | | | 30.02 | 762.5 | 75.2 | 24.0 | 14 | W | | | 4 | | 5 | | | 0 | 0 | Cloudy | Watrin. |
| Geriville | | | 30.07 | 763.8 | 61.2 | 16.2 | 87 | S | | | 4 | | 2 | | | 0 | 0 | Fair | Brugnlaux. |
| Laghouat | | | 30.00 | 761.9 | 79.9 | 26.6 | 15 | S | | | 4 | | 2 | | | 0 | 0 | Fair | Bertrand. |
| Biskra | | | 29.98 | 761.6 | 81.0 | 27.2 | 12 | WNW | | | 1 | | 5 | | | 0 | 0 | Cloudy | Chanvaux. |

NOTE.—In the originals the amount of cloudiness is given by the scale 0-4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

## AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.31 | 744.4 | 29.85 | 758.1 | 60.8 | 16.0 | 41 | SW | | | 6 | | 2 | | | 0 | 0 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.00 | 736.7 | 29.76 | 756.0 | 54.3 | 12.4 | 40 | SW | | | 3 | | 8 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 28.91 | 734.8 | 29.78 | 756.3 | 57.2 | 14.0 | 46 | S | | | 5 | | 9cs | | | 0 | 0 | | Julius Mikolik. |
| Gratz | 28.55 | 725.1 | 29.78 | 756.4 | 57.6 | 14.2 | 54 | SW | | | 3 | | 0 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.47 | 723.1 | 29.90 | 759.4 | 54.1 | 12.3 | 55 | W | | | 2 | | 5 | | | 0.026 | 0.65 | | Prof. A. Gottschling. |
| Kremsmünster | 28.39 | 721.2 | 29.72 | 754.8 | 55.8 | 13.2 | 56 | NE | | | 1 | | 0 | | | 0 | 0 | | Prof. C. Wagner. |
| Lemberg | 28.79 | 731.2 | 29.76 | 756.0 | 52.7 | 11.5 | 40 | NW | | | 1 | | 10 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 29.88 | 759.0 | 30.00 | 761.9 | 59.2 | 15.1 | 67 | S | | | 3 | | 2 | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.46 | 748.3 | 29.93 | 760.1 | 55.4 | 13.0 | 40 | SW | | | 2 | | 3 | | | 0 | 0 | | Julius Csics, S. J. |
| Szegedin | 29.60 | 751.9 | 29.88 | 758.9 | 63.0 | 17.2 | 79 | S | | | 1 | | 5 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 29.90 | 759.5 | 30.00 | 762.1 | 56.7 | 13.7 | 79 | W | | | 2 | | 1 | | | 0 | 0 | | P. Busin. |
| Vienna | 29.05 | 737.9 | 29.76 | 755.8 | 58.1 | 14.5 | 56 | SE | | | 2 | | 1 | | | 0 | 0 | | I. R. Central Met. Obs'y |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

## BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.29 | 743.9 | 29.49 | 749.0 | 48.6 | 9.2 | 91 | S | | | 3 | | 10 | | WSW;5 | 0.104 | 2.65 | | Royal Observatory. |
| Furnes | 29.41 | 747.1 | 29.44 | 747.7 | 52.3 | 11.3 | 88 | SW | | | 2 | | 10 | | | 0.055 | 1.4 | Light rain | M. E. de Cae. |
| Maeseyck | 29.42 | 747.2 | 29.54 | 750.4 | 55.2 | 12.9 | 67 | S | | | 4 | | 10 | | | | | Raining | M. Pierrot. |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

**Entered at the Post Office at Washington, D. C., as Second-Class Matter.**

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.52 | 749.8 | 29.62 | 752.3 | 41.7 | 5.4 | ..... | E | 16 | 7.2 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Blue sky | W. Boswell. |
| Ardrossan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.35 | 745.5 | 42.0 | 5.6 | ..... | E | 21 | 9.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.38 | 746.2 | 42.3 | 5.7 | ..... | E | 28 | 12.5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.38 | 746.2 | 41.6 | 5.3 | ..... | E | 18 | 8.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Thomas Mackereth. |
| Bradford, Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 30.00 | 762.0 | 30.03 | 762.8 | 83 | 28.3 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.36 | 745.7 | 46.0 | 7.8 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | H. Todd. [C. |
| Cardington | ..... | ..... | 29.37 | 746.0 | 45.0 | 7.2 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | John McLaren. |
| Chatham, School M. E. | 29.26 | 743.2 | 29.39 | 746.5 | 48.1 | 8.9 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | J. Carmell, Sapper, R. E. |
| Dartmoor | 27.94 | 709.7 | 29.39 | 746.5 | 49.0 | 9.4 | ..... | SW | ..... | ..... | 5 | ..... | 4 | ..... | ..... | ..... | ..... | Showery | Alexander Watt. |
| Donaghadee | 29.38 | 746.2 | 29.43 | 747.5 | 43 | 6.1 | ..... | SE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | J. Mac Gowan. |
| Dover | 29.38 | 746.2 | 29.40 | 746.7 | 48 | 8.9 | ..... | SSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | J. Costello. |
| Falmouth, Observatory | 29.21 | 741.9 | 29.43 | 747.5 | 54.3 | 12.4 | ..... | SW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.84 | 707.1 | 30.14 | 765.5 | 61.0 | 16.1 | ..... | S | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.70 | 754.4 | 29.93 | 760.2 | 88 | 31.1 | ..... | NW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's college | ..... | ..... | ..... | ..... | 49 | 9.4 | ..... | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 29.90 | 759.4 | 29.95 | 760.7 | 61.7 | 16.5 | ..... | N | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.31 | 744.5 | 29.52 | 749.8 | 42.2 | 5.7 | ..... | ENE | ..... | ..... | 5 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | D. G. Maclean. [C. |
| Great Yarmouth | 29.42 | 747.2 | 29.43 | 747.5 | 42 | 5.6 | ..... | ESE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | Raining | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.21 | 741.9 | 29.38 | 746.2 | 46.7 | 8.2 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | The staff, for G.B. Airy. |
| Guernsey | 29.26 | 743.2 | 29.48 | 748.8 | 55 | 12.8 | ..... | SW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | Blank | Blank | D. clouds | Dr. S.E.Hoskins, F.R.S. |
| Helston | 29.51 | 749.5 | 29.63 | 752.6 | 56 | 13.3 | ..... | SW | ..... | ..... | 2 | ..... | 1k | ..... | ..... | 0 | 0 | Fine | M. P. Moyle. |
| Holyhead | 29.29 | 744.0 | 29.33 | 745.0 | 46 | 7.8 | ..... | SSE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | John Tilston. |
| Jersey | 29.24 | 742.7 | 29.52 | 749.8 | 53.6 | 12 0 | ..... | W | ..... | ..... | 3 | ..... | 3c | ..... | ..... | ..... | ..... | D. clouds | J. Fisher. |
| Kew, Observatory | 29.35 | 745.5 | 29.38 | 746.2 | 47.4 | 8.6 | ..... | E | 4 | 1.8 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Threatening | The Meteorological Of. |
| Leicester, Museum | 29.14 | 740.1 | 29.39 | 746.5 | 45.0 | 7.2 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.95 | 760.7 | 30.02 | 762.5 | 67 | 19.4 | ..... | SE | ..... | ..... | 2 | ..... | 4k | ..... | ..... | ..... | ..... | Blue sky | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.50 | 749.3 | 29.60 | 751.8 | 45 | 7.2 | ..... | E | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.16 | 766.1 | 72.2 | 22.3 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.23 | 742.4 | 29.42 | 747.2 | 43.9 | 6.6 | ..... | SE | ..... | ..... | 2 | ..... | 10d | ..... | SE | 0.336 | 8.53 | Raining | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 28.86 | 733.0 | 29.39 | 746.5 | 43.0 | 6.1 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.38 | 746.2 | 49 | 9.4 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | H. E. Bellamy. |
| Plymouth | 29.35 | 745.5 | 29.42 | 747.2 | 54.7 | 12.6 | ..... | SW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | John Merrifield. |
| Roche's Point | 29.26 | 743.2 | 29.33 | 745.0 | 53 | 11.7 | ..... | WNW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded | Wm. Kennedy, |
| Saint Ann's Head | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 44 | 6.7 | ..... | NE | 17 | 7.6 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Rev C.Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.90 | 759.4 | 29.96 | 761.0 | 66.6 | 19.2 | ..... | SSW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | Blank | Blank | D. clouds | W. H.Lyne. |
| Sheffield | 29.18 | 741.2 | 29.46 | 748.3 | 41.1 | 5.1 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.34 | 8.6 | Raining | W. F. Cooper. |
| Silloth Rectory | 29.42 | 747.2 | 29.45 | 748.0 | 48.5 | 9.2 | 62 | SE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.04 | 737.6 | 29.44 | 747.8 | 42.1 | 5.6 | ..... | ENE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.18 | 741.2 | 29.40 | 746.7 | 51.4 | 10.8 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | C. H. Griffith, F. M. S. |
| Truro, Royal Institution | 29.39 | 746.5 | 29.43 | 747.5 | 56 | 13.3 | ..... | W | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | W. Newcombe. |
| Valencia, Observatory | 29.32 | 744.7 | 29.34 | 745.2 | 50.4 | 10.2 | ..... | WSW | 14 | 6.3 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | The Meteorological Of. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.36 | 771.1 | 30.40 | 772.1 | 70.3 | 21.3 | 43 | SSE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.36 | 771.1 | 61 | 16 | 72 | S | ..... | ..... | 2 | ..... | 2ks | ..... | ..... | 0.02 | 0.5 | Fine | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.57 | 751.1 | 41.0 | 5.0 | ..... | E | ..... | ..... | 3 | ..... | 10k | ..... | ..... | 0 | 0 | Overcast | Andrew Gibb. |
| Mauritius, Observatory | 29.90 | 759.4 | 30.09 | 764.2 | 78.0 | 25.6 | 71 | ESE | 15.0 | 6.7 | ..... | 1 | 4 | ..... | ESE | 0.57 | 14.5 | Fine | C. Meldrum. |
| Melbourne, Observatory | 30.28 | 769.1 | 30.37 | 771.4 | 60.0 | 15.6 | 68 | NE | 6 | 2.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Very fine | R. L. J. Ellery. |
| Monach Lt-house, (Hebrides) | ..... | ..... | 29.54 | 760.3 | 47 | 8.3 | ..... | E | ..... | ..... | 4 | 0 | 10 | ..... | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.68 | 753.9 | 40 | 4.4 | ..... | N | ..... | ..... | 6 | 8 | 10 | N | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 45', E. 29° 55' | ..... | ..... | 29.99‡ | 761.7‡ | 65 | 18.3 | ..... | WNW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle-Isle | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W.R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have generally been carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected or instru'tal error and temperature. Inches. | Barometer. Corrected or instru'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.30 | 668.0 | 30.02 | 762.5 | 68.4 | 20.2 | 76 | NE | ..... | ..... | 4 | 2ck | 3s | ..... | NE | Inap. | Inap. | ..... | Federico Maison. |

NOTE.—For St. Jose the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches for an altitude of 1,145 meters, or 3,756.6 feet; the distinction between the upper and lower clouds is not always made; the rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.39 | 746.5 | 29.44 | 747.7 | 40.8 | 4.9 | 79 | NW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Raining |
| Fanöe | 29.50 | 749.3 | 29.52 | 749.8 | 41.4 | 5.2 | 83 | W | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.42 | 747.3 | 29.47 | 748.4 | 40.6 | 4.8 | 64 | Calm | ..... | ..... | 0 | ..... | 7 | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 29.77 | 756.2 | 29.81 | 757.1 | 39.0 | 3.9 | 58 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.22 | 742.2 | 29.39 | 746.5 | 42.1 | 5.6 | 91 | W | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.04 | 737.7 | 29.60 | 751.7 | 55.4 | 13 | 72 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.150 | 3.8 | Covered | Collignon, Director. |
| Amiens, Normal School | 29.52 | 749.8 | 29.63 | 752.6 | 48.6 | 9.2 | 89 | SW | ..... | ..... | 3 | ..... | 2 | ..... | ENE | 0.157 | 4.0 | Slightly cl'dy | Bonvallet, Director. |
| Avignon, Normal School | 29.78 | 756.4 | 29.86 | 758.4 | 52.2 | 11.2 | 73 | SE | ..... | ..... | 3 | ..... | 10 | ..... | SE | ..... | ..... | Raining | M. Giraud, Director. |
| Bar-sur-Seine | 29.10 | 739.2 | 29.65 | 753.2 | 52.9 | 11.6 | 87 | SW | ..... | ..... | 2 | ..... | 10 | ..... | W | ..... | ..... | Raining | C. Saillard, Director. |
| Beauvais, Normal School | 29.27 | 743.5 | 29.53 | 750.1 | 55.2 | 12.9 | 72 | W | ..... | ..... | ..... | ..... | 8 | ..... | W | 0.010 | 0.25 | Very cloudy | Frere Eugene Marie, Dr |
| Besançon, Normal School | 28.82 | 732.0 | 29.71 | 754.5 | 57.7 | 14.3 | 51 | S | ..... | ..... | 2 | ..... | 5 | ..... | SE | 0 | 0 | Cloudy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.85 | 732.8 | 29.76 | 755.8 | 54.1 | 12.3 | 71 | S | ..... | ..... | 3 | ..... | 5k | S | S | 0 | 0 | Cloudy | M. Marlot, Director. |
| Bourges, Normal School | 29.09 | 738.8 | 29.63 | 752.6 | 56.3 | 13.5 | 77 | W | ..... | ..... | 4 | ..... | 10kn | NE | W | ..... | ..... | Raining | A. Waquet, Director. |
| Brest, Naval Observatory | 29.21 | 741.9 | 29.45 | 748.1 | 59.4 | 15.2 | 68 | SW | ..... | ..... | 3 | ..... | 7 | ..... | SW | 0.571 | 14.50 | ..... | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.32 | 744.8 | 29.74 | 755.4 | 50.7 | 10.4 | 80 | E | ..... | ..... | 3 | ..... | 10 | W | W | 0.08 | 2. | Covered | September, Director. |
| Caen, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Lair, Director. |
| Chartres, Normal School | 29.11 | 739.3 | 29.68 | 753.9 | 43.3 | 6.3 | 95 | W | ..... | ..... | 1 | ..... | 10 | ..... | NW | 0.04 | 1. | Covered | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.28 | 743.6 | 29.60 | 751.7 | 54.9 | 12.7 | 56 | S | ..... | ..... | 1 | ..... | 10 | SW | SW | 0 | 0 | Covered | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.35 | 720.0 | 29.67 | 753.7 | 58.5 | 14.7 | 42 | SE | ..... | ..... | 2 | ..... | 8 | ..... | S | 0.024 | 0.6 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.80 | 731.4 | 29.64 | 752.9 | 52.9 | 11.6 | 65 | WSW | ..... | ..... | 1 | ..... | 5kn | ..... | WSW | 0 | 0 | Cloudy | Dr. Coulet, Director. |
| Commune de Gréasque* | 28.69 | 728.8 | 29.84 | 757.8 | 51.8 | 11.0 | 70 | SE | ..... | ..... | 3 | ..... | 10 | ..... | SE | 0 | 0 | Covered | M. Kina, Director. |
| Grenoble, Normal School | 28.95 | 735.4 | 29.71 | 754.7 | 54.5 | 12.5 | 73 | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.40 | 746.8 | 29.61 | 752.2 | 58.3 | 14.6 | 74 | S | ..... | ..... | 3 | ..... | 8 | ..... | S | 0.244 | 6.2 | Very cloudy | Mouillot, Director |
| Le Mans, Normal School | 29.22 | 742.1 | 29.52 | 749.8 | 55.4 | 13 | 71 | SW | ..... | ..... | 3 | ..... | 5 | ..... | SW | 0.20 | 5. | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.86 | 733.0 | 29.78 | 756.5 | 54.1 | 12.3 | 41 | SW | ..... | ..... | 6 | ..... | n | ..... | SW | 0 | 0 | ..... | Baudry, Director. |
| Lorient, Naval Observatory | 29.44 | 747.8 | 29.54 | 750.4 | 56.5 | 13.6 | 89 | S | ..... | ..... | 3 | ..... | ..... | ..... | S | 0.551 | 14.0 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mirecourt, Normal School | 28.58 | 726.0 | 29.61 | 752.0 | 55.0 | 12.8 | 64 | S | ..... | ..... | 6 | ..... | 5 | ..... | SW | 0 | 0 | Cloudy | M. Barbier, Director. |
| Nismes, Normal School | 29.70 | 754.3 | 29.90 | 759.5 | 52.5 | 11.4 | 85 | SE | ..... | ..... | 2 | ..... | 5 | ..... | S | 0.020 | 0.5 | Cloudy | Boyer, Director. |
| Privas, Normal School | 28.78 | 730.9 | 29.85 | 758.2 | 50.0 | 10 | 74 | SW | ..... | ..... | 1 | ..... | 10 | S | SW | ..... | ..... | Raining | M. Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.88 | 631.9 | ..... | ..... | 36.3 | 2.4 | 93 | S | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | Almost cov. | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.60 | 751.7 | 29.63 | 752.5 | 60.1 | 15.6 | 67 | W | ..... | ..... | 1 | ..... | 10 | W | W | 0.91 | 23. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.44 | 747.9 | 29.53 | 750.1 | 54.6 | 12.2 | 73 | W | ..... | ..... | 2 | ..... | 10 | ..... | W | 0.157 | 4.0 | Covered | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.43 | 747.4 | 29.46 | 748.2 | 59.4 | 15.2 | 48 | SSW | ..... | ..... | 3 | ..... | 5 | SSW | SSW | 0.346 | 8.78 | ..... | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.40 | 746.8 | 29.57 | 751.0 | 55.8 | 13.2 | 72 | SW | ..... | ..... | 3 | ..... | ..... | ..... | SW | 0.039 | 1.0 | Clearing | E. Renou, Director. |
| Tarbes, Normal School | 28.52 | 724.4 | 29.60 | 751.8 | 50.0 | 10 | 74 | SSW | ..... | ..... | 6 | ..... | 2 | W | SW | 0 | 0 | Slightly cl'd | T. Huguet, Director. |
| Toulouse, Observatory | 28.96 | 735.5 | 29.67 | 753.7 | 52.7 | 11.5 | 91 | SE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.224 | 5.7 | ..... | M. Mercadier Julier. |
| Versailles Observatory | 29.07 | 738.4 | 29.56 | 750.9 | 56.5 | 13.6 | 62 | WSW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0.046 | 1.17 | ..... | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.205 | 5.20 | ..... | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.85 | 758.1 | 29.87 | 758.8 | 81.0 | 27.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 29.15 | 740.5 | 29.76 | 755.9 | 56.1 | 13.4 | 40 | SSW | ..... | ..... | 4 | ..... | 9 | ..... | S | 0.012 | 0.3 | Almost cov'd | Mr. Jays. |
| Mont-Louis | 24.39 | 619.4 | 29.70 | 754.4 | 40.6 | 4.8 | 80 | SW | 13.0 | 5.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | 30.00 | 762.0 | 58.3 | 14.6 | 67 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Rainy | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.28 | 743.8 | ..... | ..... | 54.3 | 12.4 | 73 | SW | ..... | ..... | 4 | ..... | 8 | ..... | WSW | 0.035 | 0.9 | ..... | Marié Davy, Director. |
| Perpignan | 29.58 | 751.2 | 29.68 | 753.9 | 59.4 | 15.2 | 75 | SE | 24.2 | 10.8 | ..... | ..... | 3 | ..... | SE | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.20 | 563.8 | ..... | ..... | 37.6 | 3.1 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.508 | 12.9 | Snowy | Gen'l de Nansouty. |
| Tours | 29.39 | 746.6 | 29.59 | 751.6 | 61.0 | 16.1 | 50 | WSW | ..... | ..... | 1 | ..... | 7 | ..... | WSW | 0.181 | 4.6 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.24 | 768.2 | 30.27 | 768.8 | 45.5 | 7.5 | 89 | NE | 1.3 | 0.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand, Nice and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi. (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135.0 millimeters, or 5.315 inches has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.80 | 731.6 | 29.63 | 752.7 | 56.5 | 13.6 | 44 | W | | | 5 | | 5 | W | | 0.012 | 0.3 | Raining | Prof. Dr. Hoh. |
| Berlin | 29.48 | 748.7 | 29.65 | 753.0 | 53.2 | 11.8 | 48 | W | | | 1 | | 6 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.20 | 741.8 | 29.73 | 755.1 | 53.4 | 11.9 | 38 | WSW | | | 3 | | 5 | WSW | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.26 | 743.3 | 29.69 | 754.0 | 54.6 | 12.2 | 64 | SW | | | 5 | | 10 | SW | | | | Light rain | Albert Senz. |
| Cassel | 28.97 | 735.8 | 29.57 | 751.0 | 57.2 | 14.0 | 52 | S | | | 3 | | 5 | SW | | 0.015 | 0.38 | Raining | Dr. H. Möhl. |
| Crefeld | 29.36 | 745.6 | 29.51 | 749.6 | 61.3 | 16.3 | 38 | SW | | | 4 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.29 | 744.0 | 29.66 | 753.3 | 59.0 | 15.0 | | SSW | | | 3 | | 10 | | | 0 | 0 | | Physical Society. |
| Freienwalde on the Oder | 29.60 | 751.7 | 29.63 | 752.7 | 54.1 | 12.3 | 50 | WSW | | | 5 | | 5k; cs | WSW | | 0 | 0 | | Assmann., M. D. |
| Friedrichshafen | 28.33 | 719.5 | 29.76 | 755.8 | 52.0 | 11.1 | 51 | SW | | | 4 | | 9 | SW | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.52 | 749.8 | 29.59 | 751.6 | 48.6 | 9.2 | 56 | WSW | | | 3 | | 4k | | | 0 | 0 | Fair | Captain F. Hegeman. |
| Kiel | 29.54 | 750.2 | 29.56 | 750.7 | 48.6 | 9.2 | 92 | W | | | 5 | | 5 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.48 | 748.8 | 29.56 | 750.9 | 41.0 | 5.0 | 62 | SW | | | 8 | | 6 | | | 0.004 | 0.1 | | Prof. E. Luther. |
| Köslin | | | 29.56 | 750.7 | 41.9 | 5.5 | | W | | | 4 | | 4 | | | 0.472 | 12.0 | | H. Müller. |
| Leipsic, Observatory | 29.23 | 742.4 | 29.64 | 752.9 | 55.4 | 13.0 | 41 | SW | | | 2 | | 5 | SW | | 0 | 0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.45 | 748.0 | 29.50 | 749.2 | 39.4 | 4.1 | 80 | SW | | | 7 | | 10n | | | | | Rain & snow | Skalweit. |
| Neufahrwässer | 29.56 | 750.7 | 29.57 | 751.1 | 46.2 | 7.9 | 52 | SSW | | | 4 | | 7 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.30 | 744.3 | 29.59 | 751.6 | 51.6 | 10.9 | 46 | W | | | 6 | | 9 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.17 | 741.0 | 29.71 | 754.7 | 56.3 | 13.5 | 66 | SSW | | | 4 | | 6 | WSW | | 0 | 0 | | Imp. University Observatory. |
| Stuttgart | 28.74 | 730.1 | 29.68 | 753.8 | 63.5 | 12.5 | 49 | W | | | 5 | | 8 | W | | 0 | 0 | | Prof. Schoder. |
| Treves (Trier) | 29.07 | 738.3 | 29.58 | 751.4 | 49.3 | 9.6 | 78 | SW | | | 7 | | 10 | | | 0.056 | 1.47 | | Prof. Flesch. |
| Weissenburg (Bavaria) | 28.20 | 716.3 | 29.69 | 754.0 | 54.7 | 12.6 | 41 | SSW | 25 | 11 | | 1c | | W | | 0 | 0 | Hazy | Dr. Van Bebber |
| Wustrow, Naval School | 29.52 | 749.9 | 29.55 | 750.5 | 42.3 | 5.7 | 73 | SW | | | 3 | | 10s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.68 | 753.9 | 30.07 | 763.7 | 66.7 | 19.3 | | SW | | | 9.0 | | | | | | | ⅛ Clear | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.61 | 752.1 | 29.66 | 753.4 | 87.4 | 30.8 | 54 | SW | 16 | 7.2 | | 2 | | | | 0 | 0 | D. clouds | |
| Deesa | | | | | 96.4 | 35.8 | 23 | SSW | 13.2 | 5.9 | | 8 | W | | | 0 | 0 | D. clouds | |
| Bombay | 29.79 | 756.7 | 29.83 | 757.6 | 83.1 | 28.4 | 68 | WSW | 15 | 6.7 | | 5 | | WSW | | 0 | 0 | D. clouds | |
| Poona | 27.82 | 706.6 | 29.79 | 756.6 | 87.3 | 30.7 | 26 | WNW | | | | 0 | | | | 0 | 0 | Blue sky | |
| Lahore | 28.70 | 729.1 | 29.42 | 747.2 | 93.6 | 34.2 | 12 | E | 1.5 | 0.7 | | 10 | | | | 0 | 0 | D. clouds | |
| Belgaum | 27.31 | 693.6 | 29.81 | 757.2 | 82.3 | 27.9 | 65 | W | 15 | 6.7 | | 0 | | | | 0 | 0 | D. clouds | |
| Roorkee | 28.74 | 729.9 | 29.61 | 752.1 | 89.8 | 32.1 | 25 | SE | 3.5 | 1.6 | | 10 | | | | 0 | 0 | Overcast | |
| Agra | 29.07 | 738.3 | 29.61 | 752.1 | 97.6 | 36.4 | 22 | W | | | | 10 | | W | | 0 | 0 | | |
| Nagpur | 28.63 | 727.1 | 29.63 | 752.5 | 99.7 | 37.6 | 17 | Calm | 3.2 | 1.4 | | 0 | | | | 0 | 0 | Blue sky | |
| Lucknow | 29.26 | 743.1 | 29.62 | 752.3 | 96.1 | 35.6 | 32 | ENE | 1.9 | 0.8 | | 0 | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.30 | 744.3 | 29.60 | 751.9 | 99.6 | 37.6 | 18 | Calm | 0.4 | 0.2 | | 8 | | | | 0 | 0 | D. clouds | |
| Patna | 29.49 | 749.0 | 29.66 | 753.4 | 96.0 | 35.6 | 38 | NE | 2.2 | 1.0 | | 4 | NE | NE | | 0 | 0 | D. clouds | |
| Hazaribagh | 27.67 | 702.8 | 29.61 | 752.1 | 93.8 | 34.3 | 29 | N | 4.2 | 1.9 | | 0 | | | | 0 | 0 | Blue sky | |
| Cuttack | 29.67 | 753.6 | 29.75 | 755.6 | 88.1 | 31.2 | 61 | S | 1.2 | 5.4 | | 4 | | | | 0 | 0 | | |
| Calcutta (Alipore) | 29.72 | 754.8 | 29.74 | 755.3 | 86.2 | 30.1 | 68 | SSW | 12.0 | 5.4 | | 1 | SW | | | 0 | 0 | D. clouds | |
| Goalpara | 29.42 | 747.2 | 29.81 | 757.2 | 73.7 | 23.2 | 81 | SE | 11.2 | 5.0 | | 0 | | | | 0.58 | 14.7 | Blue sky | |
| Chittagong | 29.69 | 754.1 | 29.78 | 756.4 | 85.5 | 29.7 | 76 | Calm | 7.8 | 3.5 | | 1 | | | | 0 | 0 | Misty | |
| Sibsagar | 29.52 | 749.8 | 29.86 | 758.4 | 75.9 | 24.4 | 77 | SW | 3.0 | 1.3 | | 10 | W | W | | 0.17 | 4.3 | D. clouds | |
| Jubbulpore | 28.29 | 718.6 | 29.60 | 751.8 | 99.5 | 37.5 | 13 | Calm | 2.1 | 0.9 | | 5 | | E | | 0 | 0 | D. clouds | |
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Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.56 | 750.8 | 29.97 | 761.2 | 59.2 | 15.1 | 72 | SW | 6.9 | 3.1 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig |
| Milan | 29.43 | 747.5 | 29.95 | 760.8 | 58.3 | 14.6 | 51 | SSW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.85 | 758.2 | 29.96 | 761.0 | 58.5 | 14.7 | 49 | SSE | 5.6 | 2.5 | ..... | ..... | 7 | SW | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni. |
| Moncalieri | 29.03 | 737.3 | 29.93 | 760.3 | 55.6 | 13.1 | 51 | WSW | 1.3 | 0.6 | ..... | ..... | 8 | NE | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.78 | 756.5 | 29.98 | 761.4 | 57.7 | 14.3 | 57 | SW | 4.3 | 1.9 | ..... | ..... | 6 | S | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 28.02 | 711.6 | 29.93 | 760.1 | 53.1 | 11.7 | 41 | NW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.92 | 759.9 | 29.96 | 761.1 | 55.9 | 13.3 | 72 | NE | 11.2 | 5.0 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.71 | 754.5 | 29.96 | 761.0 | 59.9 | 15.5 | 45 | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.173 | 4.5 | ..... | Cav. F. Meucci |
| Leghorn | 29.87 | 758.6 | 29.95 | 760.7 | 59.7 | 15.4 | 48 | WNW | ..... | ..... | 4 | ..... | 8 | S | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 29.79 | 756.6 | 29.96 | 761.0 | 63.3 | 17.4 | 49 | SW | 8.1 | 3.6 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.72 | 755.0 | 29.98 | 761.4 | 60.1 | 15.6 | 66 | WSW | 13.0 | 6.7 | ..... | ..... | 10 | WSW | ..... | 0.122 | 3.1 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.10 | 739.2 | 29.98 | 761.6 | 56.1 | 13.4 | 73 | NW | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.461 | 11.7 | ..... | Prof. D. Conti. |
| Cagliari | 29.77 | 756.1 | 29.96 | 761.0 | 62.6 | 17.0 | 64 | SE | ..... | ..... | 2 | ..... | 10 | W | ..... | 0.020 | 0.5 | ..... | Prof. A. Facinotti. |
| Palermo | 29.75 | 755.6 | 30.00 | 762.0 | 60.1 | 15.6 | 66 | WNW | 9.8 | 4.4 | ..... | ..... | 9 | WNW | ..... | 0.154 | 3.9 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.91 | 759.7 | 29.98 | 761.5 | 66.6 | 19.2 | 59 | ENE | 7.4 | 3.3 | ..... | ..... | 8 | W | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.42 | 747 3 | 29.98 | 761.4 | 55.4 | 13.0 | 82 | ESE | 4.3 | 1.9 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. V. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 29.89 | 759.2 | 29.91 | 759.7 | 53.6 | 12.0 | 48 | WNW | 10.9 | 4.9 | ..... | ..... | 4ck;ks | ..... | W | 0 | 0 | Fair | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.88 | 758.9 | 30.09 | 764.3 | 49.1 | 9.5 | 56 | W | 9.8 | 4.4 | ..... | ..... | 0 | ..... ..... | ..... | 0 | 0 | Clear | S. Takehayashi. |
| Tokei, (Yeddo) Observatory | 29.51 | 749.5 | 29.58 | 751.3 | 58.9 | 14.9 | 98 | SSE | 2.0 | 0.9 | ..... | ..... | 10n | ..... | ..... | 1.115 | 28.32 | Raining | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the cooperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.13 | 638.3 | 30.17 | 766.2 | 66.3 | 19.5 | 39 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. L. Perez. |
| Leon | 24.49 | 622.1 | 30.16 | 766.1 | 61.2 | 16.2 | 69 | N | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.15 | 588.0 | 30.23 | 767.8 | 50.5 | 10.3 | 52 | NW | 1.1 | 0.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 57.2 | 14.0 | 54 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. V. de Leon, M. E. |
| Tlacotalpam | 30.05 | 763.2 | 30.06 | 763.5 | 67.1 | 19.5 | 87 | SE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. M. Chazaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | 22.59 | 573.7 | 30.19 | 766.8 | 59.9 | 15.5 | 35 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | J. Castrillon. |
| Puebla, (Catholic Institute) | 23.45 | 595.6 | 30.21 | 767.4 | 46.4 | 8.0 | 56 | NE | 2.7 | 1.2 | ..... | 0 | 0 | ..... | ..... | 0.12 | 0.3 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.46 | 722.9 | 30.11 | 764.7 | 76.1 | 24.5 | 49 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,860.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,167.8m., or 7,112.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 507.3 m., or 1,664.4 ft. The data are published as given, except the conversions, which have been revised; the instrumental correction —0.88 mm., has been applied at this office to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.47 | 748.5 | 29.47 | 748.5 | 49.6 | 9.8 | ..... | S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.49 | 749.0 | 29.54 | 750.4 | 49.3 | 9.6 | ..... | SE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.49 | 749.0 | 29.49 | 749.0 | 46.9 | 8.3 | ..... | ENE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.303 | 7.7 | ..... | |
| Hellevoetsluis | 29.46 | 748.3 | 29.46 | 748.3 | 52.7 | 11.5 | 75 | S | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.43 | 747.6 | 29.48 | 748.8 | 57.9 | 14.4 | 32 | SSE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.016 | 0.4 | Cloudy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.35 | 745.5 | 29.41 | 746.9 | 44.2 | 6.8 | 60 | NNW | 25.9 | 11.6 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Brönø | 29.32 | 744.6 | 29.36 | 745.6 | 41.0 | 5.0 | 57 | Calm | 0 | 0 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.12 | 739.6 | 29.26 | 743.3 | 50.5 | 10.3 | 40 | WSW | 7 | 3 | ..... | ..... | 6 | ..... | ..... | 0.004 | 0.1 | ..... | |
| Tromsö | 29.47 | 748.6 | 29.52 | 749.7 | 34.9 | 1.6 | 69 | E | 34 | 15 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.88 | 759.0 | 30.08 | 763.9 | 61.2 | 16.2 | 81 | W | 11.2 | 5.0 | ..... | ..... | 7 | ..... | ..... | 0.059 | 1.5 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.69 | 728.7 | 29.72 | 754.9 | 59.9 | 15.5 | 93 | SW | 21.7 | 9.7 | ..... | 10 | SW | ..... | ..... | 0.921 | 23.4 | Light rain... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.02 | 762.5 | 30.11 | 764.7 | 69.6 | 20.9 | 71 | W | 13.0 | 5.8 | ..... | ..... | 8 | ..... | ..... | 0.039 | 1.0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.42 | 747.2 | 29.78 | 756.4 | 59.0 | 15.0 | 81 | W | 26.2 | 11.7 | ..... | ..... | 10 | ..... | ..... | 1.520 | 38.6 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.06 | 763.5 | 30.13 | 765.3 | 68.0 | 20.0 | 69 | WNW | 11.9 | 5.3 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa. Com'd.t. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande,Com'd't. |
| Duque da Terceira, | | | | | | | | | | | | | | | | | | | |
| San Jose de Bissao, Senegambia | ..... | ..... | 30.06 | 763.5 | 74.3 | 23.5 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | ..... | Blue sky | C.C.da Fonseca Ferreira,Comd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, | | | | | | | | | | | | | | | | | | | |
| S. 4° 10', E. 10° 04' | ..... | ..... | 29.86 | 758.4 | 84.2 | 29.0 | ..... | SE | ..... | ..... | 2 | ..... | 5 | ..... | SW | 1 | SW | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria,Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. San Jose de Bissao, Senegambia | ..... | ..... | 29.93 | 760.1 | 80.4 | 26.9 | ..... | SSW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 2 | ..... | Blue sky | A. Ferreira, 2d Lt. |
| Sá da Bandeira | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, | | | | | | | | | | | | | | | | | | | |
| Macao, China | ..... | ..... | 29.97 | 761.3 | 74.5 | 23.6 | ..... | E | ..... | ..... | 4 | ..... | 2 | ..... | E | 2 | SE | D. clouds | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.27 | 743.4 | 29.69 | 754.1 | 49.6 | 9.8 | 47 | WSW | 22 | 10 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.19 | 741.5 | 29.62 | 752.3 | 43.3 | 6.3 | 66 | SW | 4 | 2 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.22 | 742.1 | 29.46 | 748.3 | 41.4 | 5.2 | 58 | SSW | 13 | 6 | ..... | ..... | 7ik | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.52 | 749.7 | 29.53 | 750.1 | 46.9 | 8.3 | 40 | S | 13 | 6 | ..... | ..... | 4k;ck | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.07 | 738.4 | 29.69 | 754.2 | 57.0 | 13.9 | 59 | NNE | 7 | 3 | ..... | ..... | 8k;ks;n | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.74 | 755.4 | 29.81 | 757.2 | 64.2 | 17.9 | 56 | S | 22 | 10 | ..... | ..... | 4c | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.91 | 759.7 | 29.93 | 760.2 | 65.1 | 18.4 | 72 | SSW | 7 | 3 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Light clouds | Lagorio. |
| Moscow | 29.07 | 738.4 | 29.62 | 752.3 | 50.7 | 10.4 | 91 | S | 7 | 3 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | Light rain... | Meteorological Obs. |
| Lugan | 29.51 | 749.6 | 29.71 | 754.6 | 73.4 | 23.0 | 43 | SW | 13 | 6 | ..... | ..... | 5 | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 29.62 | 752.3 | 29.64 | 752.8 | 55.2 | 12.9 | 69 | ESE | 4 | 2 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.62 | 726 8 | 29.98 | 761.6 | 73.6 | 23.1 | 35 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.11 | 764.9 | 30.03 | 762.8 | 65.1 | 18.4 | 39 | SE | 25 | 11 | ..... | ..... | 8s | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.54 | 750.4 | 30.02 | 762.4 | 50.7 | 10.4 | 59 | S | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.75 | 755.7 | 30.02 | 762.5 | 57.0 | 13.9 | 58 | SSE | 9 | 4 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.08 | 738.5 | 30.02 | 762.6 | 56.5 | 13.6 | 49 | WSW | 18 | 8 | ..... | ..... | 7c;cs;ck | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 30.05 | 763.2 | 30.28 | 769.1 | 63.3 | 17.4 | 47 | NNE | 16 | 7 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.56 | 725.5 | 30.17 | 766.2 | 48.6 | 9.2 | 88 | S | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light rain... | Teich, A. M. |
| Barnaul | 29.57 | 751.0 | 30.09 | 764.2 | 34.5 | 1.4 | 45 | NNW | 0 | 0 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeniseisk | 29.63 | 752.6 | 29.94 | 760.4 | 24.8 | — 4.0 | 55 | NNW | 22 | 10 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking, (China) | 29.90 | 759.4 | 30.04 | 763.0 | 55.0 | 12.8 | 39 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.61 | 752.0 | 29.71 | 754.5 | 33.6 | 0.9 | 84 | N | 38 | 17 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47', E. 48° 34'.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.65 | 753.2 | 29.76 | 755.9 | 65.3 | 18.5 | 67 | SSE | 2.7 | 1.22 | ..... | ..... | 3ck | ..... | ..... | 0.000 | 0.15 | ..... | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 29.43 | 747.5 | 29.48 | 748.9 | 60.8 | 16.0 | 96 | SE | 4.0 | 1.77 | ..... | ..... | 10 | ..... | ..... | 0.571 | 14.5 | Covered.... | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.50 | 673.1 | ..... | ..... | 47.1 | 8.4 | 82 | S | 18.1 | 8.09 | ..... | ..... | 9 | ..... | ..... | 0.134 | 3.4 | Almost cov'd | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.43 | 696.8 | ..... | ..... | 51.6 | 10.9 | 100 | S | 14.2 | 6.33 | ..... | 0 | 10 | ..... | ..... | 0.067 | 1.7 | Raining..... | The Staff. |
| Murcia, Met. Obs'y | 29.65 | 753.1 | 29.95 | 760.8 | 75.2 | 24.0 | 49 | SW | 3.2 | 1.44 | ..... | 5 | 5 | SE | ..... | 0.056 | 1.43 | Raining..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.51 | 724.2 | 29.42 | 747.3 | 49.6 | 9.8 | 93 | SW | 8.1 | 3.6 | ..... | ..... | 10 | ..... | ..... | 0.602 | 15.3 | Raining..... | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.09 | 764.1 | 30.15 | 765.8 | 66.0 | 18.9 | 76 | Calm | 0 | 0 | ..... | 0 | 1k | ..... | ..... | 0 | 0 | Clear..... | Benito Vines, S. J |
| Manilla, Philippine Islands | 29.74 | 755.5 | 29.79 | 756.8 | 84.6 | 29.2 | 91 | ESE | 0 | 0 | ..... | ..... | 10 | WSW | E | 0.472 | 12.0 | Raining ..... | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.90 | 759.6 | 30.00 | 762.1 | 60.6 | 15.9 | 91 | SSW | 13.6 | 6.1 | ..... | 0 | 10 | ..... | SW | 0.079 | 2.0 | ..... | Capt. C. Fulazon, R. N., Dir. |
| San Juan de Porto Rico, W.I | 29.95 | 760.7 | 30.04 | 763.0 | 78.8 | 26.0 | 80 | SW | 0 | 0 | ..... | 0 | 2k | ..... | S | 0 | 0 | Clear..... | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instru-m'tal error and temperature. Inches. | Barometer. Corrected for instru-m'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.41 | 746.9 | 29.44 | 747.9 | 37.8 | 3.2 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.270 | 7.0 | ..... | |
| Umea | 29.23 | 742.4 | 29.28 | 743.7 | 35.2 | 1.8 | 96 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.134 | 3.4 | ..... | |
| Hernosand | 29.18 | 741.2 | 29.23 | 742.5 | 34.9 | 1.6 | 93 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.418 | 10.5 | ..... | |
| Stockholm | 28.98 | 736.0 | 29.15 | 740.5 | 37.4 | 3.0 | 93 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.252 | 6.4 | ..... | |
| Wisby | 29.19 | 741.2 | 29.24 | 742.8 | 36.3 | 2.4 | 85 | WNW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0.201 | 5.1 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.08 | 738.5 | 28.15 | 740.4 | 37.8 | 3.2 | 84 | WNW | 14.8 | 6.6 | ..... | ..... | 10 | ..... | N | 0.322 | 8.18 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.38 | 720.9 | 29.82 | 757.5 | 49.3 | 9.6 | 72 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | The Observatory. |
| Zurich | 28.17 | 715.4 | 29.81 | 757.2 | 51.3 | 10.7 | 57 | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Slightly cl'dy | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —3.4 mm.; Thermometer,—3.0 Cent.; Relative Humidity, +15 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,338.6 feet, and that of Zurich 470 m., or 1,542.0 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.03 | 762.7 | 69.8 | 21.0 | 46 | SW | 7.8 | 3.5 | ..... | ..... | 6 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.24 | 768.0 | 84.2 | 29.0 | ..... | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 30.04 | 762.9 | 59.4 | 15.2 | ..... | SW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut. (Syria,) Lee Obs'y | 29.96 | 761.0 | 30.07 | 763.8 | 72.9 | 22.7 | 68 | E | ..... | ..... | 1 | ..... | 10cs | ..... | ..... | 0 | 0 | Overcast | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.67 | 753.6 | 29.98 | 761.5 | 41 | 5 0 | ..... | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. R. Bigg. |
| *Chatham, N. B | 29.60 | 751.8 | 29.67 | 753.6 | 34 | 1.1 | 92 | NE | 4 | 1.8 | ..... | 2k | 0 | NE | ..... | 0 | 0 | Fair | G. A. Blair. |
| Charlottetown, P. E. Island | 29.53 | 750.0 | 29.57 | 751.1 | 34 | 1.1 | 72 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.68 | 753.9 | 29.88 | 758.9 | 41.1 | 5.1 | 49 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Smith, M. A. |
| Dalhousie, N. B | 29.51 | 749.5 | 29.68 | 753.9 | 34 | 1.1 | ..... | NW | ..... | ..... | 1 | 0 | 1s | ..... | ..... | 0 | 0 | Fine | H. A. Johnson. |
| Esquimault, B. C | 29.52 | 749.8 | 29.56 | 750.8 | 46.8 | 8.2 | 96 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | W. H. Bevis. |
| *Father Point, Quebec | 29.72 | 754.9 | 29.74 | 755.4 | 33 | 0.6 | 85 | N | 16 | 7.2 | ..... | 5k | 0 | Calm | ..... | 0 | 0 | Clear | J. McWilliams. |
| Fredericton, N. B | 29.63 | 752.6 | 29.69 | 754.1 | 34.0 | 1.1 | 52 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.13 | 739.9 | 29.96 | 761.0 | 44 | 6.7 | 60 | S | 5 | 2.2 | ..... | 5c | 5ks | S | S | 0 | 0 | Fair | James Stewart. |
| Granton, Ontario | 29.00 | 736.6 | 30.14 | 765.5 | 38 | 3.3 | ..... | N | ..... | ..... | 1 | 1k | 0 | N | ..... | 0 | 0 | Fine | James Grant. |
| *Halifax, N. S | 29.38 | 746.2 | 29.52 | 749.8 | 35 | 1.7 | 78 | N | 8 | 3.6 | ..... | ..... | 8ks | ..... | N | 0.193 | 4.91 | Clearing | F. Allison, M. A. |
| Hamilton, Ontario | 29.74 | 755 4 | 30.12 | 765.0 | 41.7 | 5.4 | 96 | SW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.65 | 753.1 | 29.99 | 761.7 | 48 | 6.1 | 53 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.48 | 748 8 | 29.52 | 749.8 | 33.2 | 0.9 | 92 | SW | 3 | 1.3 | ..... | 7ck | 0 | SW | ..... | 0.28 | 7.1 | Fair | C. H. Rigby. |
| Moose Factory, Ontario | 30.11 | 764.8 | 30.15 | 765.8 | 24.2 | — 4.3 | 76 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | J. R. Nason. |
| *Montreal, Quebec | 29.68 | 753.9 | 29.88 | 758.9 | 40 | 4.4 | 51 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.41 | 747.0 | 30.12 | 765.0 | 39 | 3.9 | 46 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Rev. R. Mosly. |
| Peterboro, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.40 | 746.7 | 30.10 | 764 5 | 41 | 5.0 | 65 | N | 10 | 4.5 | ..... | 5c | 0 | N | ..... | 0 | 0 | Fair | H. Morgan. |
| Port Hastings, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Peter Grant. |
| Port Stanley, Ontario | 29.47 | 748 5 | 30.14 | 765.5 | 40 | 4.4 | 66 | W | 7 | 3.1 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair | M. Payne. |
| *Quebec, Quebec | 29.46 | 748.3 | 29.79 | 756.7 | 38 | 3.3 | 81 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.61 | 752.1 | 30.08 | 764.0 | 37 | 2.8 | 66 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. McIntyre. |
| St. Andrews, N. B | 29.62 | 752.3 | 29.67 | 753.6 | 33 | 0.6 | 70 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| St. John, N. B | 29.49 | 749 0 | 29.66 | 753.4 | 32 | 0.0 | 69 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.42 | 747.2 | 30.16 | 766.1 | 32 | 0.0 | 91 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | K. Stewart. |
| Stayner, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear | R. J. Cole. |
| Stratford, Ontario | 28.81 | 731.8 | 30.12 | 765.0 | 38.7 | 3.7 | 58 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.46 | 748.3 | 29.50 | 749.3 | 33 | 0.6 | 85 | N | 8 | 3.6 | ..... | 8k | 0 | N | ..... | 0.26 | 6.6 | Fair | T. C. Hill. |
| *Toronto, Ontario | 29.71 | 754.6 | 30.10 | 764.5 | 41 | 5.0 | 43 | N | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Magnetic Observatory. |
| Windsor, N. S | 29.48 | 748.8 | 29.58 | 751.3 | 33.0 | 0.6 | 89 | N | 12 | 5.4 | ..... | 6k | 0 | ..... | ..... | 0.03 | 0.8 | Fair | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 31.0 | — 0.6 | 100 | NE | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.38 | 9.7 | Snowing | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'r 0—10. | Clouds. Amount. Lw'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.68 | 753.9 | 29.92 | 760.0 | 41 | 5.0 | 57 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0.02 | 0.5 | Clear | |
| Alpena, Michigan | 29.54 | 750.3 | 30.21 | 767.3 | 40 | 4.4 | 56 | NW | 4 | 1.8 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Atlanta, Georgia | 28.89 | 733.8 | 30.04 | 763.0 | 50 | 10.0 | 71 | NE | 10 | 4.5 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 29.95 | 760.7 | 29.96 | 761.0 | 42 | 5.6 | 58 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Augusta, Georgia | 29.93 | 760.2 | 30.10 | 764.5 | 55 | 12.8 | 68 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 29.99 | 761.7 | 30.04 | 763.0 | 48 | 8.9 | 43 | NW | 8 | 3.6 | ..... | 0 | Haze | ..... | Calm | Inap. | Inap. | Clear | |
| Barnegat, New Jersey | 29.90 | 759.4 | 29.92 | 760.0 | 44 | 6.7 | 60 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.30 | 7.6 | Clear | |
| Bismarck, Dakota | 27.87 | 707.9 | 29.73 | 755.1 | 50 | 10.0 | 38 | SW | 32 | 14.3 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Boerne, Texas | 28.57 | 725.7 | 29.88 | 758.9 | 55 | 12.8 | 19 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boise City, Idaho | 26.82 | 681.2 | 29.78 | 756.4 | 45 | 7.2 | 84 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | W | 0.31 | 7.9 | Cloudy | |
| Boston, Massachusetts | 29.64 | 752.8 | 29.80 | 756.9 | 39 | 3.9 | 38 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear | |
| Brackettville, Texas | 28.86 | 733.0 | 29.88 | 758.9 | 61 | 16.1 | 61 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.94 | 735.1 | 29.94 | 760.5 | 43 | 6.1 | 51 | SE | 18 | 8.0 | ..... | 2ck | 0 | SW | ..... | 0 | 0 | Clear | |
| Brownsville, Texas | 30.01 | 762.2 | 30.05 | 763.3 | 66 | 18.9 | 74 | SE | 2 | 0.9 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Buffalo, New York | 29.36 | 745.7 | 30.08 | 764.0 | 37 | 2.8 | 71 | SW | 3 | 1.3 | ..... | 2c | Haze | Calm | Calm | 0 | 0 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 58 | 14.4 | 12 | S | ..... | ..... | 4 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.60 | 751.8 | 29.89 | 759.2 | 40 | 4.4 | 39 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cairo, Illinois | 29.80 | 756.9 | 30.20 | 767.1 | 52 | 11.1 | 66 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.19 | 639.8 | 29.99 | 761.7 | 50 | 10.0 | 26 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 56 | 13.3 | 63 | S | ..... | ..... | 4 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.53 | 699.2 | 30.10 | 764.5 | 42 | 5.6 | 91 | W | 6 | 2.7 | ..... | ..... | Fog | ..... | SW | 0 | 0 | Foggy | |
| Cape Hatteras, N. Carolina | 30.07 | 763.8 | 30.08 | 764.0 | 49 | 9.4 | 51 | NE | 5 | 2.2 | ..... | Haze | 1ks | ..... | Calm | 0 | 0 | Clear | |
| Cape Henry, Virginia | 30.05 | 763.3 | 30.07 | 763.8 | 48 | 8.9 | 63 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.05 | 763.3 | 30.06 | 763.5 | 50 | 10.0 | 58 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape May, New Jersey | 29.92 | 760.0 | 29.95 | 760.7 | 43 | 6.1 | 66 | NW | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0.16 | 4.1 | Clear | |
| Castroville, Texas | 29.24 | 742.7 | 29.95 | 760.7 | 59 | 15.0 | 76 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.02 | 762.5 | 30.08 | 764.0 | 57 | 13.9 | 63 | E | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 23.82 | 605.0 | 29.76 | 755.9 | 39 | 3.9 | 64 | E | 4 | 1.8 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Chicago, Illinois | 29.48 | 748.8 | 30.19 | 766.8 | 42 | 5.6 | 66 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cincinnati, Ohio | 29.54 | 750.3 | 30.20 | 767.1 | 47 | 8.3 | 48 | N | 2 | 0.9 | ..... | 9c | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Cleveland, Ohio | 29.41 | 747.0 | 30.16 | 766.1 | 39 | 3.9 | 73 | W | 6 | 2.7 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Coleman City, Texas | 28.17 | 715.5 | 29.83 | 757.7 | 52 | 11.1 | 73 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Columbus, Ohio | 29.31 | 744.5 | 30.16 | 766.1 | 44 | 6.7 | 60 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Concho, Texas | 28.03 | 711.9 | 29.69 | 754.1 | 56 | 13.3 | 34 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.56 | 750.8 | 30.02 | 762.5 | 58 | 14.4 | 76 | SE | 4 | 1.8 | ..... | 1cs | 2s | Calm | SW | 0 | 0 | Fair | |
| Davenport, Iowa | 29.55 | 750.6 | 30.21 | 767.3 | 42 | 5.9 | 58 | E | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.04 | 636.0 | ..... | ..... | 45 | 7.2 | 53 | S | 4 | 1.8 | ..... | 10c | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Decatur, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Denison, Texas | 29.16 | 740.7 | 29.94 | 760.5 | 61 | 16.1 | 61 | S | 10 | 4.5 | ..... | 2c | 2s | SW | SW | 0 | 0 | Fair | |
| Denver, Colorado | 24.54 | 623.3 | 29.76 | 755.9 | 44 | 6.7 | 60 | S | 8 | 3.6 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Des Moines, Iowa | 29.20 | 741.7 | 30.09 | 764.3 | 46 | 7.8 | 62 | SE | 3 | 1.3 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Detroit, Michigan | 29.48 | 748.8 | 30.16 | 766.1 | 41 | 5.0 | 49 | N | 6 | 2.7 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Dodge City, Kansas | 27.17 | 690.1 | 29.39 | 746.5 | 54 | 12.2 | 49 | S | 6 | 2.7 | ..... | 5ck | 0 | S | ..... | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.49 | 749.0 | 30.21 | 767.3 | 39 | 3.9 | 64 | E | 1 | 0.4 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Duluth, Minnesota | 29.49 | 749.0 | 30.19 | 766.8 | 39 | 3.9 | 64 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.19 | 741.4 | 29.92 | 760.0 | 60 | 15.6 | 65 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.60 | 751.8 | 29.67 | 753.6 | 34 | 1.1 | 61 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 64 | 17.8 | 78 | S | ..... | ..... | 1 | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| El Paso, Texas | 26.19 | 665.2 | ..... | ..... | 58 | 14.4 | 26 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.38 | 746.2 | 30.12 | 765.0 | 39 | 3.9 | 73 | W | 4 | 1.8 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Escanaba, Michigan | 29.56 | 750.8 | 30.24 | 768.1 | 35 | 1.7 | 53 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.48 | 723.4 | 30.08 | 764.0 | 55 | 12.8 | 12 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.51 | 698.7 | ..... | ..... | 51 | 10.6 | 45 | SE | 5 | 2.2 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort Craig, New Mexico | 25.44 | 646.2 | 29.51 | 749.5 | 44 | 6.7 | 35 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.19 | 639.8 | 30.15 | 765.8 | 46 | 7.8 | 39 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.42 | 747.2 | 29.94 | 760.5 | 62 | 16.7 | 51 | SE | 6 | 2.7 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Hazy | |
| Fort Griffin, Texas | 28.66 | 728.0 | 29.90 | 759.4 | 61 | 16.1 | 45 | S | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.06 | 687.3 | ..... | ..... | 46 | 7.8 | 85 | SE | 6 | 2.7 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort McKavett, Texas | 27.70 | 703.6 | 29.57 | 751.1 | 57 | 13.9 | 58 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.72 | 754.9 | 29.76 | 755.9 | 7 | —13.9 | 100 | NE | 2 | 0.9 | ..... | ..... | 10cs | ..... | SE | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 28.68 | 728.5 | 29.75 | 755.6 | 63 | 17.2 | 42 | S | 12 | 5.4 | ..... | 0 | 8s | ..... | S | 0 | 0 | Cloudy | |
| Fort Stevenson, Dakota | 27.92 | 709.2 | ..... | ..... | 51 | 10.6 | 72 | SE | 36 | 16.1 | ..... | 8cs | 0 | SE | ..... | 0 | 0 | Cloudy | |
| Fredericksburg, Texas | 28.24 | 717.3 | 29.76 | 755.9 | 63 | 17.2 | 57 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 30.07 | 763.8 | 30.11 | 764.8 | 67 | 19.4 | 64 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Graham, Texas | 28.83 | 732.3 | 29.85 | 758.2 | 67 | 19.4 | 42 | SE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.54 | 750.3 | 30.20 | 767.1 | 46 | 7.8 | 54 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.38 | 746.2 | 30.18 | 766.6 | 41 | 5.0 | 49 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianola, Texas | 30.05 | 763.3 | 30.08 | 764.0 | 65 | 18.3 | 73 | S | 9 | 4.0 | ..... | 8c | 0 | W | ..... | 0 | 0 | Fair | |
| Jacksboro, Texas | 28.78 | 731.0 | 29.88 | 758.9 | 66 | 18.9 | 50 | S | 12 | 5.4 | ..... | 5ck | 0 | S | ..... | 0 | 0 | Fair | |
| Jacksonville, Florida | 30.11 | 764.8 | 30.13 | 765.3 | 63 | 17.2 | 62 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.50 | 749.3 | 30.13 | 765.3 | 46 | 7.8 | 62 | SE | 3 | 1.3 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Key West, Florida | 30.15 | 765.8 | 30.19 | 766.8 | 68 | 20.0 | 60 | NE | 7 | 3.1 | ..... | 1k | 0 | Calm | ..... | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 30.02 | 762.5 | 30.05 | 763.3 | 48 | 8.9 | 63 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.14 | 740.1 | 30.18 | 766.6 | 38 | 3.3 | 100 | NE | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0.36 | 9.1 | Dense fog | |
| La Crosse, Wisconsin | 29.42 | 747.2 | 30.17 | 766.3 | 41 | 5.0 | 65 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.06 | 661.9 | 30.21 | 767.3 | 40 | 4.4 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.56 | 750.8 | 29.90 | 759.4 | 75 | 23.9 | 52 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.15 | 740.4 | 29.99 | 761.7 | 52 | 11.1 | 54 | SE | 13 | 5.8 | ..... | 9cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Los Angeles, California | 29.78 | 756.4 | 30.13 | 765.3 | 52.0 | 11.1 | 86 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | NW | 0.03 | 0.8 | Cloudy | |
| Louisville, Kentucky | 29.60 | 751.8 | 30.18 | 766.6 | 44 | 6.7 | 60 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Lynchburg, Virginia | 29.38 | 746.2 | 30.07 | 763.8 | 46 | 7.8 | 54 | NW | 1 | 0.4 | ..... | 0 | 2ks | ..... | Calm | 0 | 0 | Clear | |
| Madison, Wisconsin | 29.19 | 741.4 | 30.20 | 767.1 | 43 | 6.1 | 67 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.49 | 749.0 | 30.22 | 767.6 | 35 | 1.7 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.86 | 720.3 | 30.11 | 764.8 | 57 | 13.9 | 69 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.81 | 757.2 | 30.13 | 765.3 | 55 | 12.8 | 57 | E | 12 | 5.4 | ..... | 5cs | Sm'e | W | Calm | 0 | 0 | Fair | |
| Milwaukee, Wisconsin | 29.45 | 748.0 | 30.20 | 767.1 | 40 | 4.4 | 56 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mobile, Alabama | 30.13 | 765.3 | 30.18 | 766.6 | 57 | 13.9 | 72 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.86 | 758.4 | 30.09 | 764.3 | 58 | 14.4 | 64 | SW | 3 | 1.3 | ..... | 1c | 0 | W | ..... | 0 | 0 | Clear | |
| Morgantown, West Virginia | 29.04 | 737.6 | 30.11 | 764.8 | 43 | 6.1 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mt. Washington, N. H. | 23.39 | 594.1 | 29.75 | 755.6 | 14 | —10.0 | 63 | NW | 54 | 24.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Nashville, Tennessee | 29.63 | 752.6 | 30.17 | 766.3 | 53 | 11.7 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 29.75 | 755.6 | 29.86 | 758.4 | 46 | 7.8 | 47 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.23 | 5.8 | Clear | |
| New London, Connecticut | 29.79 | 756.7 | 29.84 | 757.9 | 47 | 8.3 | 41 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.14 | 3.6 | Clear | |
| New Orleans, Louisiana | 30.11 | 764.8 | 30.17 | 766.3 | 61 | 16.1 | 77 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.76 | 755.9 | 29.81 | 757.2 | 42 | 5.6 | 66 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear | |
| New York, New York | 29.74 | 755.4 | 29.92 | 760.0 | 44 | 6.7 | 51 | NW | 1 | 0.4 | ..... | 0 | Sm'e | ..... | ..... | 0.10 | 2.5 | Clear | |
| Norfolk, Virginia | 30.01 | 762.2 | 30.07 | 763.8 | 49 | 9.4 | 57 | NW | 4 | 1.8 | ..... | 1c | 0 | W | ..... | 0 | 0 | Clear | |

## UNITED STATES SERIES.—Continued.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 26.78 | 680.2 | 29.29 | 744.0 | 48 | 8.9 | 56 | E | 10 | 4.5 | ..... | 8k | 2ks | SW | Calm | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 29.59 | 751.6 | 29.63 | 752.6 | 47.2 | 8.4 | 85 | S | 1 | 0.4 | ..... | ..... | 6n | ..... | S | 0.02 | 0.5 | Light rain | |
| Omaha, Nebraska | 28.80 | 731.5 | 29.89 | 759.2 | 52 | 11.1 | 60 | SE | 18 | 8.0 | ..... | 2c | 2s | N | Calm | 0 | 0 | Fair | |
| Oswego, New York | 29.69 | 754.1 | 30.02 | 762.5 | 40 | 4.4 | 56 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pembina, Dakota | 29.10 | 739.1 | 29.92 | 760.0 | 45 | 7.2 | 53 | S | 14 | 6.3 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pa | 29.90 | 759.4 | 29.95 | 760.7 | 46 | 7.8 | 40 | NW | 21 | 9.4 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Phœnix, Arizona | 28.78 | 731.0 | 30.56 | 776.2 | 60 | 15.6 | 39 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.59 | 446.8 | 29.80 | 756.9 | 14 | —10.0 | 46 | SW | 44 | 19.7 | ..... | 5cs | 0 | SW | ..... | 0 | 0 | Fair | |
| Pioche, Nevada | 23.79 | 604.3 | 29.56 | 750.8 | 38 | 3.3 | 63 | S | 4 | 1.8 | ..... | 0 | 2s | ..... | S | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 29.29 | 744.0 | 30.13 | 765.3 | 37 | 2.8 | 81 | NW | 1 | 0.4 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Port Huron, Michigan | 29.47 | 748.5 | 30.15 | 765.8 | 41 | 5.0 | 49 | N | 11 | 4.9 | ..... | 10cs. | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Portland, Maine | 29.70 | 754.4 | 29.75 | 755.6 | 41 | 5.0 | 57 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Portland, Oregon | 29.66 | 753.4 | 29.75 | 755.6 | 47.6 | 8.6 | 85 | S | 12 | 5.4 | ..... | ..... | 10ks | ..... | S | 0.11 | 2.8 | Cloudy | |
| Prescott, Arizona | 24.64 | 652.8 | 30.00 | 762.0 | 47 | 8.3 | 34 | SW | 3 | 1.3 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.19 | 741.4 | 30.01 | 762.2 | 58 | 14.4 | 53 | NW | 1 | 0.4 | ..... | 5ck | 0 | N | ..... | 0 | 0 | Fair | |
| Punta Rassa, Florida | 30.20 | 767.1 | 30.22 | 767.6 | 62 | 16.7 | 61 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Red Bluff, California | 29.59 | 751.6 | 29.95 | 760.7 | 47 | 8.3 | 77 | SE | 5 | 2.2 | ..... | 1k | 0 | Calm | ..... | 0.15 | 3.8 | Clear | |
| Rio Grande City, Texas | 29.83 | 757.7 | 30.04 | 763.0 | 61 | 16.1 | 77 | E | 8 | 3.6 | ..... | 2ck | 5s | NW | Calm | 0 | 0 | Clear | |
| Rochester, New York | 29.41 | 747.0 | 30.04 | 763.0 | 41 | 5.0 | 49 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Roseburg, Oregon | 29.30 | 744.2 | 29.87 | 758.7 | 44.0 | 6.7 | 88 | S | 6 | 2.7 | ..... | ..... | 10n | ..... | SW | 0.12 | 3.0 | Clear | |
| Sacramento, California | 29.93 | 760.2 | 30.01 | 762.2 | 51 | 10.6 | 72 | SW | 8 | 3.6 | ..... | 0 | 5s | ..... | Calm | 0.18 | 4.6 | Light rain | |
| St. Louis, Missouri | 29.62 | 752.3 | 30.20 | 767.1 | 46 | 7.8 | 47 | SE | 4 | 1.8 | ..... | 1cs | 0 | Calm | ..... | 0.02 | 0.5 | Fair | |
| St. Marks, Florida | 30.14 | 765.5 | 30.16 | 766.1 | 55 | 12.8 | 93 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.23 | 742.4 | 30.08 | 764.0 | 43 | 6.1 | 50 | E | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.30 | 642.6 | 29.63 | 752.6 | 50 | 10.0 | 52 | NE | 10 | 4.5 | ..... | 0 | 7ks | ..... | SW | 0 | 0 | Clear | |
| San Antonio, Texas | 29.35 | 745.5 | 29.93 | 760.2 | 61 | 16.1 | 40 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| San Diego, California | 30.08 | 764.0 | 30.15 | 765.8 | 58 | 14.4 | 82 | W | 8 | 3.6 | ..... | 0 | 10s | ..... | W | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.49 | 749.0 | 30.17 | 766.3 | 46 | 7.8 | 62 | Calm | 0 | 0 | ..... | 5c | 0 | N | ..... | 0 | 0 | Fair | |
| Sandy Hook, New Jersey | 29.88 | 758.9 | 29.91 | 759.7 | 46 | 7.8 | 62 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| San Francisco, California | 29.96 | 761.0 | 30.03 | 762.8 | 50.7 | 10.4 | 82 | SW | 6 | 2.7 | ..... | 0 | 5s | ..... | SW | 0.16 | 4.1 | Clear | |
| Santa Fé, New Mexico | 23.20 | 589.3 | 29.74 | 755.4 | 40 | 4.4 | 56 | E | 2 | 0.9 | ..... | 1cs | 0 | Calm | ..... | 0.70 | 17.8 | Fair | |
| Savannah, Georgia | 29.98 | 761.5 | 30.08 | 764.0 | 62 | 16.7 | 56 | SE | 3 | 1.3 | ..... | 2ck | Haze | SW | Calm | 0 | 0 | Clear | |
| Shreveport, Louisiana | 29.85 | 758.2 | 30.08 | 764.0 | 55 | 12.8 | 81 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Fair | |
| Silver City, New Mexico | 24.28 | 616.7 | 30.40 | 772.1 | 50 | 10.0 | 64 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Smithville, North Carolina | 30.08 | 764.0 | 30.12 | 765.0 | 55 | 12.8 | 45 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.72 | 754.9 | 29.86 | 758.4 | 40 | 4.4 | 73 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Stockton, Texas | 26.90 | 683.2 | 29.90 | 759.4 | 53 | 11.7 | 67 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.14 | 3.6 | Clear | |
| Thatcher's Island, Mass | 29.75 | 755.6 | 29.81 | 757.2 | 40 | 4.4 | 56 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Toledo, Ohio | 29.46 | 748.3 | 30.16 | 766.1 | 45 | 7.2 | 46 | NW | 5 | 2.2 | ..... | 5c | 0 | NW | ..... | 0.08 | 2.0 | Clear | |
| Tucson, Arizona | 27.52 | 699.0 | 30.07 | 763.8 | 56 | 13.3 | 34 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Umatilla, Oregon | 29.31 | 744.5 | 29.79 | 756.7 | 49.0 | 9.4 | 78 | SW | 20 | 8.9 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Clear | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 30 | — 1.1 | 100 | NW | ..... | ..... | 1 | ..... | 10s | ..... | N | 0.21 | 5.3 | Cloudy | |
| Uvalde, Texas | 29.13 | 739.9 | 29.94 | 760.5 | 62 | 16.7 | 61 | E | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.90 | 759.4 | 30.16 | 766.1 | 58 | 14.4 | 70 | SW | 4 | 1.8 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Virginia City, Montana | 23.93 | 607.8 | 29.41 | 747.0 | 37 | 2.8 | 81 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | W | 0.05 | 1.3 | Cloudy | |
| Visalia, California | 29.65 | 753.1 | 30.02 | 762.5 | 49.5 | 9.7 | 88 | SE | 4 | 1.8 | ..... | ..... | 10n | ..... | SE | 0.20 | 5.1 | Light rain | |
| Washington, D. C | 29.93 | 760.2 | 30.04 | 763.0 | 45 | 7.2 | 46 | NW | 12 | 5.4 | ..... | 0 | 1s | ..... | Calm | 0.03 | 0.8 | Clear | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 45 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.00 | 762.0 | 30.08 | 764.0 | 51 | 10.6 | 59 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.40 | 645.2 | 29.76 | 755.9 | 37 | 2.8 | 81 | SW | 17 | 7.6 | ..... | 0 | 8ks | ..... | SW | 0.01 | 0.3 | Cloudy | |
| Wood's Holl, Mass | 29.77 | 756.1 | 29.81 | 757.2 | 41 | 5.0 | 57 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.13 | 3.3 | Clear | |
| Yankton, Dakota | 28.63 | 727.2 | 29.91 | 759.7 | 49 | 9.4 | 57 | E | 19 | 8.5 | ..... | 2ck | 0 | S | ..... | 0 | 0 | Clear | |
| Yuma, Arizona | 29.79 | 756.7 | 29.95 | 760.7 | 61 | 16.1 | 50 | W | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.44 | 722.4 | 29.82 | 757.4 | 60 | 15.6 | 44 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.08 | 764.0 | 30.13 | 765.3 | 70 | 21.1 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.28 | 642.1 | ..... | ..... | 65.0 | 18.3 | 85 | Calm | ..... | ..... | 0 | ..... | 9ks | ..... | ..... | 0.50 | 12.7 | ..... | Thomas Herran. |
| Navassa, W. I | 29.94 | 760.5 | 30.02 | 762.5 | 79 | 26.1 | ..... | NE | 8 | 3.6 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Partly cl'dy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.54 | 763.0 | 30.05 | 763.3 | 77 | 25.0 | 95 | E | ..... | ..... | 2 | ..... | 10n | ..... | E | 0.450 | 11.43 | Raining | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | 30.09 | 764.3 | 30.14 | 765.5 | 25.0 | — 3.9 | 94 | SE | 4 | 1.8 | ..... | 3c | 1s | E | E | 0 | 0 | Fair | J. Fortescue & W. Wood. |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,642 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.8 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.98 | 761.5 | 51 | 10.6 | 51 | 10.6 | 79 | WSW | 18 | 8.0 | ..... | ..... | 8n | ..... | SW | 0.061 | 1.55 | ..... | ..... | ..... | |
| Navy Yard, Pensacola, Fla. | 30.27 | 768.8 | 62 | 16.7 | 62 | 16.7 | 77 | W | 15 | 6.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear. | |
| Navy Yard, Portsmouth, N.H | 29.80 | 756.9 | 60 | 15.6 | 38 | 3.3 | 60 | NW | 2 | 0.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rainy | |
| Naval Hospital, Yokohama, Japan.....* | 29.56‡ | 750.8‡ | ..... | ..... | 62.8 | 17.1 | 94 | SW | ..... | ..... | 6 | ..... | 10n | ..... | SW | 1.00 | 25.4 | ..... | ..... | Cloudy | |
| Adams, Panama .....* | 30.02 | 762.5 | 81 | 27.2 | 79 | 26.1 | 95 | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Fair | |
| Alaska, Esquimault, Vancouver I. | 29.68‡ | 751.3‡ | ..... | ..... | 48 | 8.9 | 70 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | 0 | 0 | Smooth | ..... | D. clouds | |
| Alliance, Naples, Italy..... | 29.94‡ | 760.5‡ | ..... | ..... | 60 | 15.6 | 76 | NE | ..... | ..... | 2 | ..... | 4 | ..... | N;E | ..... | ..... | ..... | ..... | Pleasant | |
| Ashuelot, Hong-Kong, China. ...* | 29.98‡ | 761.6‡ | ..... | ..... | 71 | 21.7 | 75 | ENE | ..... | ..... | 4 | ..... | 5 | ..... | ENE | ..... | ..... | Smooth | ..... | Fair | |
| Canonicus, New Orleans, La.....* | 30.14 | 765.5 | 45 | 7.2 | 58 | 14.4 | 58 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Colorado, New York, N. Y..... | 29.90 | 759.4 | 46 | 7.8 | 47 | 8.3 | 48 | W | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0.06 | 1.5 | ..... | ..... | Hazy | |
| Constitution, N. 28° 35′, W. 20° 03′..... | 30.28‡ | 769.1‡ | ..... | ..... | 68 | 20.0 | 95 | NW | ..... | ..... | 3 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | NW | Clear | |
| Despatch, Genoa, Italy..... | 29.97‡ | 761.2‡ | ..... | ..... | 64 | 17.8 | 53 | NE | ..... | ..... | 1 | ..... | 5 | ..... | NE | ..... | ..... | Smooth | ..... | Fair | |
| Essex, Montevideo, Uruguay.* | 30.05 | 763.3 | 66 | 18.9 | 65 | 18.3 | 100 | SSE | ..... | ..... | 3 | ..... | 5 | ..... | S | ..... | ..... | Smooth | ..... | Fair | |
| Franklin, Norfolk, Va.....* | 30.18 | 766.6 | 62 | 16.7 | 50 | 10.0 | 67 | NW | 6 | 2.7 | ..... | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Clear | |
| Gettysburg, Genoa, Italy .....* | 29.92‡ | 760.0‡ | ..... | ..... | 71 | 21.7 | 62 | SSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | ..... | Overcast | |
| Hartford, Buenos Ayres, S. A.....* | 30.10 | 764.5 | 65 | 18.3 | 60 | 15.6 | 76 | SE | ..... | ..... | 4 | ..... | 5 | ..... | SE | 0 | 0 | Smooth | ..... | Clear | |
| Michigan, Erie, Pa.....† | 30.02‡ | 762.5‡ | ..... | ..... | 38 | 3.3 | 81 | WSW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy? | |
| Monocacy, Shanghai, China.....* | 30.28‡ | 769.1‡ | ..... | ..... | 55 | 12.8 | 50 | SSE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Monongahela N. 25° 27′, E. 147° 36′.....* | 30.02‡ | 762.5‡ | ..... | ..... | 75 | 23.9 | 86 | E | ..... | ..... | 2 | ..... | ck | ..... | E | 0 | 0 | Light | E | D. clouds | |
| New Hampshire, Port Royal, S. C.....* | 30.12 | 765.0 | 62 | 16.7 | 59 | 15.0 | 70 | E | 13 | 5.8 | ..... | ..... | 2 | ..... | E | 0 | 0 | ..... | ..... | Clear | |
| Onward, Callao, Peru.....†* | 30.09 | 764.3 | ..... | ..... | 63 | 17.2 | 94 | Var. | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Foggy | |
| Palos, Tokio, China.....* | 30.15 | 765.8 | 61 | 16.1 | 59 | 15.0 | 76 | SE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 47 | 8.3 | 85 | WNW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Pensacola. Iquique, Peru..... | 30.04‡ | 763.0‡ | ..... | ..... | 63 | 17.2 | 89 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | SSW | Clear | |
| Plymouth. Portsmouth, N. H ..... | 29.77‡ | 756.1‡ | ..... | ..... | 36 | 2.2 | 51 | NNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy | |
| Portsmouth, Norfolk, Va... ..... | 30.06‡ | 763.5‡ | ..... | ..... | 50 | 10.0 | 64 | NW | ..... | ..... | 2 | ..... | 2 | ..... | NW | 0 | 0 | Smooth | ..... | Clear | |
| Powhattan, Norfolk, Va..... | 30.03‡ | 762.8‡ | ..... | ..... | 57 | 13.9 | 65 | WNW | ..... | ..... | 1-2 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Quinnebaug, Algiers, Algeria..... | 29.93‡ | 760.2‡ | ..... | ..... | 73 | 22.8 | 52 | SW | ..... | ..... | 3 | ..... | 5 | ..... | SW | ..... | ..... | ..... | ..... | Fair | |
| Ranger. Takoro, Formosa I.....* | 29.87‡ | 758.7‡ | ..... | ..... | 82 | 27.8 | 79 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Overcast | |
| Richmond. N. 5° 53′ E. 84° 13′ ..... | 29.83‡ | 757.7‡ | ..... | ..... | 86 | 30.0 | 84 | SW | ..... | ..... | 3 | ..... | 2 | ..... | SW | 0 | 0 | Mod'ate | SW | Clear | |
| Rio Bravo, Brownsville, Texas..... | 30.06 | 763.5 | 63 | 17.2 | 63 | 17.2 | 89 | S | ..... | ..... | 1 | ..... | 2 | ..... | N | ..... | ..... | ..... | ..... | Fair | |
| Sautee, Annapolis, Md... ..... | 30.01‡ | 762.2‡ | ..... | ..... | 49 | 9.4 | 50 | NW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0.02 | 0.5 | ..... | ..... | Clear | |
| Saratoga, Horta Bay, Fayal, Azores. | 30.11‡ | 764.8‡ | ..... | ..... | 62 | 16.7 | 94 | W | ..... | ..... | 3 | ..... | 10 | ..... | E | Light | Light | Mod'ate | ..... | Misty | |
| St. Louis, League Island, Pa..... | 29.88 | 758.9 | 62 | 16.7 | 48 | 8.9 | 56 | NW | 12 | 5.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Trenton Villafranca, France...* | 29.96‡ | 761.0‡ | ..... | ..... | 63 | 17.2 | 72 | SE | ..... | ..... | 1 | ..... | 10 | ..... | SE | 0 | 0 | Mod'ate | S | Cloudy | |
| Tuscarora. N. 16° 12′, W. 98° 54′ ...* | 30.01‡ | 762.2‡ | ..... | ..... | 76 | 24.4 | 86 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear | |
| Vandalia N. 36° 06′, W. 74° 35′... | 30.01‡ | 762.2‡ | ..... | ..... | 51 | 10.6 | 65 | SSE | ..... | ..... | 3 | ..... | 0? | ..... | NE? | ..... | ..... | Smooth | ..... | Misty | |
| Wabash, Boston, Mass..... | 29.83‡ | 757.7‡ | ..... | ..... | 40 | 4.4 | 91 | NW | 7 | 3.1 | ..... | ..... | ..... | ..... | ..... | 0.04 | 1.0 | ..... | ..... | Fair | |
| Wyoming. N. 35° 00′ E. 30° 35′. ..* | 30.14‡ | 765.5‡ | ..... | ..... | 67 | 19.4 | 84 | WNW | ..... | ..... | 3-4 | ..... | 2 | ..... | NW | ..... | ..... | Mod'ate | NW | Clear | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell | | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | |
| §S. S. City of Tokio Capt. Maury N. 34° 31′, E. 162° 20′ | | 30.29‡ | 769.4‡ | 62 | 16.7 | | E | | | 6 | | n | | | 0.25 in. or 6.3 mm. | Heavy | NE | Rainy | L. B. Walls. |
| S. S. Colima, N. 21° 33′, W. 105° 24′. † | | 30.03‡ | 762.8‡ | 73 | 22.8 | | NNW | | | 3 | | 4 | | N | | Small | NW | Misty | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitehurst. |
| S. S. Dakota, Capt. H. G. Morse, | | | | | | | | | | | | | | | | | | | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Granada, Capt. Austin. | | | | | | | | | | | | | | | | | | | F. W. Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, Sydney, N. S. W | | 30.40‡ | 772.1‡ | | | | S | | | 1 | | | | S | | | | Fine | R. C. Ghest, 1st Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office. §The date of the S. S. City of Tokio is uncertain, and may be in error one day.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | * | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer. N. 37° 23′, W. 125° 28′ | | 30.32‡ | 770.1‡ | 56 | 13.3 | 81 | WSW | | | 6 | | ks | | | 0 | Heavy | WSW | Squally | D. A. Joyce. |
| S. S. Gaelic, N. 44° 41′, W. 161° 58′ | * | 29.48‡ | 748.8‡ | 40 | 4.4 | | W | | | 6 | | ck | | W | Blank | High | W | Squally | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, N. 28° 45′, E. 118° 01′ | | 29.88‡ | 758.9‡ | 69 | 20.6 | 90 | NE | | | 6 | | 2 | | SW | | 3 | NE | D. clouds | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the S. S. Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the co-operation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 53° 51′, E. 7° 14′ | | 29.64‡ | 752.8‡ | 49.0 | 9.4 | 71 | E | | | 1 | | 2 | | | 0 | Smooth | E | Clear | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 39° 36′, W. 66° 36′ | | 29.65‡ | 753.1‡ | | | | NNW | | | 6 | | 10 | | NW | | Rough | NW | Raining | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the last 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | L'w'r 0—10. | Upper. From— | Lower. From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 48° 53′, W. 25° 24′ | ..... | 29.68‡ | 753.9‡ | 52 | 11.1 | ..... | NNW | ..... | ..... | 2 | ..... | 3 | ..... | N | Mod'ate | Mod'ate | ..... | Fair | Captain Sargent. |
| S. S. Ohio | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. H. Dodge. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud-direction as toward instead of from; sea-swell in general terms, as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Randle. |
| S. S. Switzerland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jackson. |
| S. S. Vaderland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Nichols. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

**ALLAN LINE MARINE SERIES.**

Furnished by the co-operation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Richardson. |
| S. S. Hibernian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Richardson. |
| S. S. Peruvian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Powell, 4th Officer. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the co-operation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Boston, Mass | ..... | 29.86‡ | 758.4‡ | 47 | 8.3 | 77 | WNW | 8 | 3.6 | .. .... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Clear | Capt. James Jorgensen |
| Brigantine "George of Halifax" | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Willard N. Pratt. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively by the letters c, k, s, n, d, f, p, hz., fg. and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 21, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 29.97 | 761.3 | 61.9 | 16.6 | 87 | WNW | | | 2 | | 10 | | | 0.079 | 2.0 | Covered | Kesxuche. |
| Algiers | | | 29.82 | 757.3 | 59.0 | 15.0 | 82 | W | | | 6 | | 10 | | | 0.288 | 7.2 | Raining | Tourillere. |
| La Calle | | | 29.?0 | 756.8 | 70.2 | 21.2 | 67 | N | | | 1 | | 10 | | | 0.016 | 0.4 | Covered | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 29.94 | 76?.5 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 29.97 | 761.1 | 68.1 | 14.5 | 47 | NW | | | 5 | | 10 | | | 0 | 0 | Covered | Herbin. |
| Tebessa | | | 29.92 | 760.0 | 72.5 | 22.5 | 15 | SW | | | 7 | | 8 | | | 0 | 0 | Very cloudy | Watrin. |
| Geriville | | | 30.03 | 762.8 | 66.5 | 18.9 | 73 | NNE | | | 4 | | 8 | | | 0 | 0 | Very cloudy | Brugulaux. |
| Laghouat | | | 29.95 | 760.7 | 77.4 | 25.2 | 25 | SW | | | 5 | | 5 | | | 0 | 0 | Cloudy | Bertrand. |
| Biskra | | | 29.88 | 759.0 | 83.3 | 28.5 | 12 | ESE | | | 1 | | 5 | | | 0.055 | 1.4 | Cloudy | Chanvaux. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

## AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.13 | 739.9 | 29.66 | 753.4 | 64.4 | 18.0 | 50 | SW | | | 4 | | 9 | | | 0 | 0 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 28.81 | 731.8 | 29.55 | 750.6 | 64.4 | 18.0 | 36 | SSW | | | 2 | | 9 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 28.76 | 730.6 | 29.62 | 752.4 | 59.0 | 15.0 | 60 | SE | | | 3 | | 10ks | | N | 0 | 0 | | Julius Mikolik. |
| Gratz | 28.37 | 720.7 | 29.60 | 751.7 | 59.5 | 15.3 | 63 | SW | | | 4 | | 8 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.41 | 721.7 | 29.80 | 757.0 | 65.1 | 18.4 | 74 | ESE | | | 1 | | 1 | | | 0 | 0 | | Prof. A. Gottschling. |
| Kremsmünster | 28.05 | 712.5 | 29.34 | 745.2 | 62.1 | 16.7 | 65 | NE | | | 1 | | 9 | | | 0 | 0 | | Prof. C. Wagner. |
| Lemberg | 28.68 | 728.5 | 29.64 | 752.9 | 60.8 | 16.0 | 42 | SW | | | 4 | | 8 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 29.59 | 751.5 | 29.70 | 754.4 | 56.1 | 13.4 | 86 | SE | | | 5 | | 10 | | | 0 | 0 | | I.R. Hydrographic Office |
| Szathmar | 29.31 | 744.4 | 29.76 | 755.8 | 66.2 | 19.0 | 41 | S | | | 3 | | 7 | | | 0 | 0 | | Julius Csics, S. J. |
| Szegedin | 29.45 | 747.9 | 29.72 | 754.8 | 63.7 | 17.6 | 52 | S | | | 3 | | 6 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 29.61 | 752.0 | 29.71 | 754.6 | 56.5 | 13.6 | 79 | S | | | 2 | | 10 | | | 1.173 | 29.8 | Rainy | P. Busin. |
| Vienna | 28.72 | 729.5 | 29.41 | 746.9 | 65.3 | 18.5 | 44 | SSE | | | 4 | | 7 | | | 0 | 0 | | I. R. Central Met. Obs'y |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

## BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.13 | 740.0 | 29.33 | 745.0 | 48.9 | 9.4 | 96 | ENE | | | 1 | | 10 | | E | 0.248 | 6.30 | Raining | Royal Observatory. |
| Furnes | 29.35 | 745.5 | 29.37 | 746.1 | 46.0 | 7.2 | 83 | NE | | | 4 | | 10 | | | 0.516 | 13.1 | Raining | M. E. de Cae. |
| Maeseyck | 29.25 | 742.9 | 29.37 | 746.1 | 53.1 | 11.7 | 84 | SSE | | | 2 | | 10 | | | 0.220 | 5 6 | Raining | M. Pierrot. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

**Entered at the Post Office at Washington, D. C., as Second-Class Matter.**

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.54 | 750.3 | 29.64 | 752.8 | 43.7 | 6.5 | ..... | ENE | 20 | 8.9 | ..... | ..... | 9 | ..... | ..... | 0.015 | 0.38 | Overcast | W. Boswell. |
| Ardrossan | 29.57 | 751.1 | 29.59 | 751.6 | 51 | 10.6 | ..... | E | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.57 | 751.1 | 40.4 | 4.7 | ..... | ENE | 15 | 6.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.55 | 750.6 | 45.8 | 7.7 | ..... | E | 12 | 5.4 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.54 | 750.3 | 47.6 | 8.7 | ..... | ESE | 12 | 5.4 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | Squally | Thomas Mackereth. |
| Bradford, Yorkshire | 29.19 | 741.4 | 29.59 | 751.6 | 45.1 | 7.3 | ..... | E | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0.32 | 8.1 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 30.00 | 762.0 | 30.03 | 762.8 | 83 | 28.3 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.51 | 749.5 | 47.0 | 8.3 | ..... | NNE | ..... | ..... | 1 | ..... | 10ks | ..... | ..... | ..... | ..... | Overcast | H. Todd. [C. |
| Cardington | ..... | ..... | 29.50 | 749.3 | 45.0 | 7.2 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.33 | 745.0 | 29.46 | 748.3 | 40.7 | 4.8 | ..... | NE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | J. Carmell, Sapper, R. E. |
| Dartmoor | 27.97 | 710.4 | 29.43 | 747.5 | 48.0 | 8.9 | ..... | E | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | Fine | Alexander Watt. |
| Donaghadee | 29.56 | 750.8 | 29.60 | 751.8 | 45 | 7.2 | ..... | SE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 29.39 | 746.5 | 29.41 | 747.0 | 42 | 5.6 | ..... | NNE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | J. Costello. |
| Falmouth, Observatory | 29.30 | 744.2 | 29.53 | 750.0 | 52.7 | 11.5 | ..... | NW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| Fort Napier, (Natal) | 28.98 | 736.1 | 30.29 | 769.4 | 68.0 | 20.0 | ..... | E | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 86 | 30.0 | ..... | NW? | ..... | ..... | 0? | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's college | ..... | ..... | ..... | ..... | 44 | 6.7 | ..... | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 29.94 | 760.5 | 29.99 | 761.7 | 61.5 | 16.4 | ..... | W | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.40 | 746.7 | 29.60 | 751.8 | 46.6 | 8.1 | ..... | ENE | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | D. G. Maclean. [C. |
| Great Yarmouth | 29.48 | 748.6 | 29.49 | 749.0 | 42 | 5.6 | ..... | NE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.30 | 744.2 | 29.48 | 748.8 | 42.4 | 5.8 | ..... | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The staff, for G.B. Airy. |
| Guernsey | 29.25 | 742.9 | 29.47 | 748.5 | 45 | 7.2 | ..... | WNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Dr. S.E. Hoskins, F.R.S. |
| Helston | 29.617 | 752.17 | 29.727 | 754.97 | 55 | 12.8 | ..... | NW | ..... | ..... | 2 | ..... | 3c | ..... | ..... | 0.29 | 5.8 | Fine | M. P. Moyle. |
| Holyhead | 29.49 | 749.0 | 29.54 | 750.3 | 46 | 7.8 | ..... | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | John Tilston. |
| Jersey | 29.20 | 741.7 | 29.49 | 749.0 | 43.4 | 6.3 | ..... | N | ..... | ..... | 5 | ..... | 10 | ..... | ..... | Blank | Blank | Misty | J. Fisher. |
| Kew, Observatory | 29.45 | 748.0 | 29.49 | 749.0 | 42.4 | 5.8 | ..... | N | 18 | 8.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | The Meteorological Of. |
| Leicester, Museum | 29.27 | 743.4 | 29.52 | 749.8 | 46.9 | 8.3 | ..... | NE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.90 | 759.4 | 29.97 | 761.2 | 69 | 20.6 | ..... | SE | ..... | ..... | 1 | ..... | 2s | ..... | ..... | ..... | ..... | Blue sky | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.57 | 751.1 | 29.66 | 753.4 | 46 | 7.8 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.15 | 765.8 | 75.1 | 24.2 | ..... | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.37 | 746.0 | 29.56 | 750.8 | 46.8 | 8.2 | ..... | NE | ..... | ..... | 3 | ..... | 7k | ..... | NE | 0.014 | 0.35 | D. clouds | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.60 | 736.6 | 29.52 | 749.8 | 46.7 | 8.2 | ..... | NE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.52 | 749.8 | 46 | 7.8 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | H. E. Bellamy. |
| Plymouth | 29.41 | 747.0 | 29.48 | 748.8 | 57.0 | 13.9 | ..... | NW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | John Merrifield. |
| Roche's Point | 29.37 | 746.0 | 29.44 | 747.8 | 54 | 12.2 | ..... | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Wm. Kennedy. |
| Saint Ann's Head | 29.34 | 745.2 | 29.50 | 749.3 | 47 | 8.3 | ..... | SE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Raining | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 44.7 | 7.1 | ..... | NE | 21 | 9.4 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.91 | 759.7 | 29.98 | 761.5 | 67.0 | 19.4 | ..... | SW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds | W. H. Lyne. |
| Sheffield | 29.30 | 744.2 | 29.58 | 751.3 | 46.5 | 8.1 | ..... | E | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | Overcast | W. F. Cooper. |
| Silloth Rectory | 29.66 | 753.4 | 29.69 | 754.1 | 53.5 | 11.9 | 49 | SE | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | D. clouds | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.17 | 740.9 | 29.57 | 751.1 | 47.5 | 8.6 | ..... | NE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.27 | 743.4 | 29.49 | 749.0 | 41.3 | 5.2 | ..... | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Squally | C. H. Griffith, F. M. S. |
| Truro, Royal Institution | 29.50 | 749.3 | 29.53 | 750.0 | 56 | 14.4 | ..... | NW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | W. Newcombe. |
| Valencia, Observatory | 29.43 | 747.5 | 29.46 | 748.3 | 50.2 | 10.1 | ..... | NNW | 8 | 3.6 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.14 | 765.5 | 30.18 | 766.6 | 75.5 | 24.2 | 43 | SSE | 9 | 4.0 | ..... | 2 | 4 | ..... | ..... | 0 | 0 | Fine | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.22 | 767.6 | 69.6 | 20 | 60 | N | ..... | ..... | 2 | ..... | 4k | ..... | ..... | 0 | 0 | Fine | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.65 | 753.1 | 46.0 | 7.8 | ..... | E | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Fine | Andrew Gibb. |
| Mauritius, Observatory | 29.89 | 759.2 | 30.08 | 764.1 | 76.6 | 24.8 | 80 | E | 10.5 | 4.7 | ..... | 0 | 5 | ..... | E | 0 | 0 | Fine | C. Meldrum. |
| Melbourne, Observatory | 30.31 | 769.9 | 30.41 | 772.4 | 60.8 | 16.0 | 65 | ENE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very fine | R. L. J. Ellery. |
| MonachLt-house, (Hebrides) | ..... | ..... | 29.68 | 753.9 | 45 | 7.2 | ..... | E | ..... | ..... | 4 | 10 | ..... | E | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.65 | 753.1 | 40 | 4.4 | ..... | NE | ..... | ..... | 6 | 10 | 10 | NE | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

| British Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 42', E. 29° 25' | ..... | ..... | 30.021‡ | 762.51‡ | 68.5 | 20.3 | ..... | NW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle-Isle | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have generally been carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Puata Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.26 | 667.0 | 29.98 | 761.5 | 69.8 | 21.0 | 86 | NE | ..... | ..... | 1 | 9k;s | ..... | ..... | ..... | Inap. | Inap. | ..... | Federico Maison |

NOTE.—For St. Jose the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches for an altitude of 1,145 meters, or 3,756.6 feet; the distinction between the upper and lower clouds is not always made; the rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.46 | 748.2 | 29.51 | 749.4 | 39.2 | 4.0 | 88 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 29.47 | 748.4 | 29.48 | 748.9 | 43.7 | 6.5 | 70 | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.36 | 745.8 | 29.41 | 746.9 | 41.0 | 5.0 | 68 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Faröe) | 29.85 | 758.1 | 29.88 | 759.0 | 42.4 | 5.8 | 64 | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Vestervig | 29.36 | 745.7 | 29.53 | 750.0 | 41.0 | 5.0 | 94 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 28.79 | 731.3 | 29.34 | 745.3 | 45.3 | 7.4 | 97 | NE | ..... | ..... | 2 | ..... | 10 | ..... | NE | 0.43 | 11. | Raining | Collignon, Director. |
| Amiens, Normal School | 29.41 | 747.0 | 29.52 | 749.8 | 51.1 | 10.6 | 83 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.157 | 4.0 | Covered | Bonvallet, Director |
| Avignon, Normal School | 29.38 | 746.2 | 29.46 | 748.2 | 62.6 | 17 | 55 | S | ..... | ..... | 1 | ..... | ..... | ..... | S | 0.575 | 14.6 | ..... | M. Giraud, Director |
| Bar-sur-Seine | 28.84 | 732.4 | 29.37 | 746.1 | 55.8 | 13.2 | 55 | W | ..... | ..... | 1 | ..... | 8kn | ..... | W | 0.354 | 9.0 | Very cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.05 | 737.8 | 29.31 | 744.4 | 52.5 | 11.4 | 88 | ENE | ..... | ..... | . | ..... | 10 | ..... | S | 0.24 | 6. | Covered | Frere Eugene Marie, Dr |
| Besançon, Normal School | 28.58 | 725.9 | 29.46 | 748.3 | 54.6 | 12.2 | 67 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.71 | 18. | Covered | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.72 | 729.4 | 29.62 | 752.3 | 46.9 | 8.3 | 74 | S | ..... | ..... | 1 | 2c | ..... | S | S | 0.996 | 25.3 | Slightly cl'dy | M. Marlot, Director. |
| Bourges, Normal School | 28.75 | 730.3 | 29.29 | 744.0 | 53.6 | 12 | 87 | W | ..... | ..... | 3 | ..... | 10k | NE | W | 0.63 | 16. | Raining | A. Waquet, Director |
| Brest, Naval Observatory | 29.28 | 743.7 | 29.52 | 749.8 | 54.0 | 12.2 | 65 | N | ..... | ..... | 3 | ..... | 7 | ..... | N | 0.020 | 0.50 | ..... | M.de Rermaree, Director |
| Carcassonne, Normal School | 29.04 | 737.5 | 29.44 | 747.7 | 61.5 | 16.4 | 49 | NE | ..... | ..... | 2 | ..... | 2 | SW | S | 0.059 | 1.5 | Slightly cl'dy | September, Director. |
| Caen, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Lair, Director. |
| Chartres, Normal School | 28.67 | 728.2 | 29.24 | 742.8 | 45.3 | 7.3 | 91 | NW | ..... | ..... | 2 | ..... | 5 | ..... | W | 0.08 | 2. | Cloudy | M. Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.02 | 737.1 | 29.34 | 745.1 | 55.0 | 12.8 | 55 | W | ..... | ..... | 1 | ..... | 5 | W | W | 0 | 0 | Cloudy | M. Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.06 | 712.6 | 29.38 | 746.2 | 55.0 | 12.8 | 34 | SW | ..... | ..... | 1 | ..... | 10 | ..... | SW | 0.071 | 1.8 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.58 | 726.0 | 29.44 | 747.7 | 47.7 | 8.7 | 57 | W | ..... | ..... | 1 | ..... | 5kn | ..... | W | 0.59 | 15. | Cloudy | Dr. Coulet, Director |
| Commune de Gréasque* | 28.37 | 720.7 | 29.52 | 749.7 | 57.4 | 14.1 | 67 | SE | ..... | ..... | 4 | ..... | 5 | ..... | SE | 1.42 | 36. | Rainy | M. Kina, Director. |
| Grenoble, Normal School | 28.72 | 729.6 | 29.50 | 749.2 | 46.9 | 8.3 | 83 | ESE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | M. Ablard, Director. |
| La Roche-sur-Yon, N. School | 29.22 | 742.2 | 29.43 | 747.5 | 54.7 | 12.6 | 74 | NNW | ..... | ..... | 4 | ..... | 5 | ..... | NNW | 0.35 | 9. | Cloudy | Mouillot, Director |
| Le Mans, Normal School | 28.92 | 734.5 | 29.22 | 742.2 | 48.0 | 8.9 | 86 | NW | ..... | ..... | 6 | ..... | 8 | ..... | NW | 0.374 | 9.5 | Very cloudy | Poirrier, Director |
| Lons-Le-Saulnier, N.School | 28.58 | 726.0 | 29.50 | 749.2 | 52.7 | 11.5 | 63 | SW | ..... | ..... | ..... | ..... | ..... | ..... | SW | 0.764 | 19.40 | ..... | Baudry, Director. |
| Lorient, Naval Observatory | 29.43 | 747.6 | 29.53 | 750.1 | 53.6 | 12.0 | 67 | NNW | ..... | ..... | 4 | ..... | ..... | ..... | N | Inap. | Inap. | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Galzin, Director |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff |
| Mirecourt, Normal School | 28.36 | 720.4 | 29.39 | 746.4 | 52.9 | 11.6 | 76 | SW | ..... | ..... | 3 | ..... | 10 | ..... | SW | 0.425 | 10.8 | Covered | M. Barbier, Director. |
| Nîmes, Normal School | 29.26 | 743.1 | 29.45 | 748.1 | 63.0 | 17.2 | 68 | S | ..... | ..... | 2 | ..... | 2 | ..... | S | 0.532 | 13.5 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 28.38 | 720.8 | 29.41 | 747.1 | 59.0 | 15 | 58 | S | ..... | ..... | 1 | ..... | 10 | S | S | 0.256 | 6.5 | Raining | M. Cantier, Director. |
| Puy de Dome (Summit) Obs. | 24.60 | 624.9 | ..... | ..... | 31.1 | — 0.5 | 100 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.126 | 3.2 | Covered | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.41 | 746.9 | 29.44 | 747.7 | 51.1 | 10.6 | 85 | NNW | ..... | ..... | 1 | ..... | 10 | NNW | NNW | 0.08 | 2. | Raining | Lt. Decante, Director. |
| Rouen, Normal School | 29.26 | 743.2 | 29.35 | 745.4 | 46.0 | 7.8 | 89 | N | ..... | ..... | 2 | ..... | 10 | ..... | N | 0.157 | 4.0 | Covered | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.43 | 747.4 | 29.46 | 748.2 | 45.1 | 7.3 | 83 | N | ..... | ..... | 4 | ..... | 8 | N | N | 0 | 0 | Very cloudy | Lt. Hercouet, Director |
| Saint Maur, (near Paris) | 29.16 | 740.6 | 29.32 | 744.8 | 52.7 | 11.5 | 79 | SSW | ..... | ..... | 2 | ..... | ..... | ..... | S | 0.417 | 10.6 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.34 | 719.7 | 29.41 | 747.0 | 48.2 | 9 | 61 | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.35 | 9. | Raining | T. Huguet, Director. |
| Toulouse, Observatory | 28.78 | 731.0 | 29.49 | 749.0 | 58.6 | 14.8 | 63 | S | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.091 | 2.3 | ..... | M. Mercadier Julier. |
| Versailles Observatory | 28.81 | 731.8 | 29.30 | 744.3 | 52.9 | 11.6 | 69 | S | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.483 | 12.27 | ..... | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.291 | 7.40 | ..... | M. Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.88 | 759.0 | 29.91 | 759.7 | 81.3 | 27.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 28.84 | 732.6 | 29.44 | 747.8 | 58.3 | 14.6 | 46 | ESE | ..... | ..... | 2 | ..... | 5 | ..... | S | 0.413 | 10.5 | Cloudy | Mr. Jays. |
| Mont-Louis | 24.31 | 617.5 | 29.63 | 752.5 | 39.6 | 4.2 | 65 | SW | 31.8 | 14.2 | ..... | ..... | 6 | ..... | SW | 0.449 | 11.4 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.59 | 751.5 | 55.4 | 13.0 | 90 | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 1.000 | 25.5 | Rainy | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.04 | 737.6 | ..... | ..... | 51.3 | 10.7 | 77 | S | ..... | ..... | 4 | ..... | 10 | ..... | SSW | 0.437 | 11.1 | ..... | Marié Davy, Director. |
| Perpignan | 29.36 | 745.6 | 29.46 | 748.3 | 58.3 | 14.0 | 60 | SE | 15.0 | 6.7 | ..... | ..... | 2 | ..... | ENE | 0.087 | 2.2 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 21.98 | 558.3 | ..... | ..... | 28.0 | — 2.2 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.937 | 23.8 | Snowy | Gen'l de Nansouty. |
| Tours | 29.12 | 739.5 | 29.31 | 744.5 | 48.9 | 9.4 | 89 | SW | ..... | ..... | 4 | ..... | 10 | ..... | W | 0.512 | 13.0 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.11 | 764.9 | 30.14 | 765.5 | 48.4 | 9.1 | 84 | E | 11.6 | 5.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear. | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand, Nice and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a.m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p.m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet: Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,436.2 ft.; Pic du Midi. (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135.0 millimeters, or 5.315 inches has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.53 | 724.6 | 29.36 | 745.6 | 62.1 | 16.7 | 51 | SW | | | 3 | | 8 | W | | | | | Prof. Dr. Hoh. |
| Berlin | 29.30 | 744.1 | 29.46 | 748.3 | 61.0 | 16.1 | 62 | S | | | 1 | | 7 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 28.99 | 736.3 | 29.51 | 749.6 | 63.7 | 17.6 | 44 | ESE | | | 3 | | 8 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 28.96 | 735.5 | 29.37 | 745.9 | 58.3 | 14.6 | 67 | S | | | 1 | | 10 | SE | | 0.087 | 2.2 | Light rain | Albert Senz. |
| Cassel | 28.82 | 731.9 | 29.41 | 747.0 | 58.6 | 14.8 | 56 | NE | | | 2 | | 10 | SW | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.20 | 741.7 | 29.36 | 745.7 | 53.6 | 12.0 | 84 | SE | | | 2 | | 10 | | | | | Raining | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.03 | 737.4 | 29.39 | 746.6 | 57.0 | 13.9 | | N | | | 2 | | 10 | | | 0.031 | 0.8 | | Physical Society. |
| Freienwalde on the Oder | 29.42 | 747.3 | 29.46 | 748.3 | 62.6 | 17.0 | 56 | SW | | | 2 | | 8cs;k | WSW | | 0 | 0 | | Assmann., M. D. |
| Friedrichshafen | 27.93 | 709.4 | 29.33 | 744.9 | 54.7 | 12.6 | 64 | SSW | | | 7 | | 7 | SW | | 0.150 | 0.8 | | M. Wilhelm. |
| Hamburg | 29.37 | 746.0 | 29.44 | 747.8 | 54.7 | 12.6 | 61 | NW | | | 3 | | 4cs;k | W | | 0.008 | 0.2 | Fair | Captain F. Hegeman. |
| Kiel | 29.47 | 748.5 | 29.48 | 748.9 | 43.5 | 6.4 | 72 | NE | | | 3 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.40 | 746.8 | 29.48 | 748.9 | 59.0 | 15.0 | 49 | SW | | | 2 | | 2 | | | 0.004 | 0.1 | | Prof. E. Luther. |
| Köslin | | | 29.43 | 747.6 | 40.3 | 4.6 | | N | | | 2 | | 2 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.00 | 736.5 | 29.41 | 747.0 | 60.8 | 16.0 | 53 | ENE | | | 2 | | 4 | | | 0 | 0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.50 | 749.2 | 29.54 | 750.4 | 48.4 | 9.1 | 61 | ESE | | | 1 | | 9s | | | | | | Skalweit. |
| Neufahrwasser | 29.48 | 748.8 | 29.50 | 749.2 | 48.9 | 9.4 | 74 | ENE | | | 2 | | 8 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.24 | 742.8 | 29.52 | 749.9 | 64.0 | 17.8 | 41 | SW | | | 2 | | 9 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 28.87 | 733.4 | 29.41 | 747.1 | 56.7 | 13.7 | 74 | S | | | 3 | | 10 | W | | 0.066 | 1.60 | | Imp. University Observatory. |
| Stuttgart | 28.41 | 721.7 | 29.32 | 744.8 | 58.6 | 14.8 | 46 | N | | | 1 | | 5 | W | | 0.689 | 17.5 | | Prof. Schoder. |
| Treves (Trier) | 28.99 | 736.4 | 29.51 | 749.5 | 54.1 | 12.3 | 63 | S | | | 3 | | 10 | | | 0.049 | 1.24 | | Prof. Flesch. |
| Weissenburg (Bavaria) | 27.89 | 708.5 | 29.26 | 743.3 | 61.9 | 16.6 | 34 | Calm | 0 | 0 | | | 10 | | | 0 | 0 | | Dr. Van Bebber |
| Wustrow, Naval School | 29.43 | 747.5 | 29.45 | 748.1 | 44.6 | 7.0 | 78 | NE | | | 3 | | 10s | SW | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.65 | 753.1 | 30.04 | 762.9 | 67.1 | 19.5 | | SW | | | 3.5 | | | | | | | ½ Clear | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.73 | 755.2 | 29.78 | 756.4 | 84.9 | 29.4 | 25 | NNW | | | | 7 | | | | 0 | 0 | D. clouds | |
| Deesa | | | | | 94.6 | 34.8 | 25 | W | 18.5 | 8.3 | | 6 | W | | | 0 | 0 | D. clouds | |
| Bombay | 29.86 | 758.4 | 29.90 | 759.3 | 83.3 | 28.5 | 67 | W | 11 | 4.9 | | 4 | | SW | | 0 | 0 | D. clouds | |
| Poona | 27.89 | 708.3 | 29.86 | 758.5 | 85.8 | 29.9 | 32 | WNW | | | | 0 | | | | 0 | 0 | Blue sky | |
| Lahore | 28.94 | 735.2 | 29.67 | 753.5 | 92.1 | 33.4 | 10 | NE | 3.6 | 1.6 | | 9 | | | | 0 | 0 | D. clouds | |
| Belgaum | 27.36 | 695.0 | 29.87 | 758.7 | 82.7 | 28.2 | 63 | W | 12 | 5.4 | | 0 | | | | 0 | 0 | Blue sky | |
| Roorkee | 28.88 | 733.6 | 29.77 | 756.2 | 84.6 | 29.2 | 27 | SE | 5.6 | 2.5 | | 10 | | | | 0 | 0 | Overcast | |
| Agra | 29.19 | 741.5 | 29.74 | 755.5 | 93.1 | 33.9 | 22 | N | | | | | | | | 0 | 0 | | |
| Nagpur | 28.68 | 728.5 | 29.68 | 754.0 | 100.7 | 38.2 | 16 | SW | 4.3 | 1.9 | | 0 | | | | 0 | 0 | Blue sky | |
| Lucknow | 29.28 | 743.8 | 29.65 | 753.2 | 83.8 | 28.8 | 65 | N | 3.4 | 1.5 | | 0 | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.34 | 745.3 | 29.64 | 762.9 | 101.6 | 38.7 | 13 | NW | 3.7 | 1.6 | | 5 | | | | 0 | 0 | D. clouds | |
| Patna | 29.49 | 749.1 | 29.67 | 753.5 | 96.4 | 35.8 | 42 | ENE | 1.3 | 0.6 | | 2 | NE | NE | | 0 | 0 | | |
| Hazaribagh | 27.69 | 705.4 | 29.63 | 752.6 | 96.0 | 35.6 | 36 | WNW | 7.1 | 3.2 | | 0 | | | | 0 | 0 | Blue sky | |
| Cuttack | 29.70 | 754.4 | 29.77 | 756.5 | 86.1 | 30.1 | 64 | S | 11 | 4.9 | | 5 | | | | 0 | 0 | | |
| Calcutta (Alipore) | 29.72 | 754.8 | 29.74 | 755.4 | 84.8 | 29.3 | 95 | SSW | 15.0 | 6.7 | | 5 | SW | SW | | 0 | 0 | D. clouds | |
| Goalpara | 29.37 | 745.9 | 29.75 | 755.7 | 81.8 | 27.7 | 69 | ESE | 6.9 | 3.1 | | 6 | | SW | | 0.21 | 5.3 | D. clouds | |
| Chittagong | 29.73 | 755.2 | 29.82 | 757.5 | 84.7 | 29.3 | 76 | SSW | 5.7 | 2.6 | | 0 | | | | 0 | 0 | Misty | |
| Sibsagar | 29.52 | 749.8 | 29.86 | 758.5 | 73.0 | 22.8 | 93 | SSE | 2.1 | 0.9 | | 10 | W | W | | 0.77 | 19.6 | Overcast | |
| Jubbulpore | 28.38 | 720.8 | 29.70 | 754.2 | 98.5 | 36.9 | 14 | W | 3.5 | 1.6 | | 2 | | | | 0 | 0 | D. clouds | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.32 | 744.7 | 29.73 | 755.1 | 52.5 | 11.4 | 97 | S | 6.3 | 2.8 | ..... | ..... | 10 | ..... | ..... | 0.894 | 22.7 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.04 | 737.7 | 29.56 | 750.8 | 49.6 | 9.8 | 96 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.543 | 13.8 | ..... | Prof. Schiaparelli. |
| Padua | 29.54 | 750.3 | 29.65 | 753.1 | 53.8 | 12.1 | 95 | NE | 10.5 | 4.7 | ..... | ..... | 10 | NE | ..... | 0.280 | 7.1 | ..... | Prof. Dott. Lorenzoni. |
| Moncalieri | 28.69 | 728.7 | 29.59 | 751.5 | 44.1 | 6.7 | 85 | W | 3.8 | 1.7 | ..... | ..... | 10 | N | ..... | 0.819 | 20.8 | ..... | Prof. P. F. Denza. |
| Genoa | 29.36 | 745.8 | 29.55 | 750.6 | 48.4 | 9.1 | 81 | NE | 9.8 | 4.4 | ..... | ..... | 10 | SE | ..... | 3.346 | 85.1 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.69 | 703.3 | 29.59 | 751.6 | 39.2 | 4.0 | 80 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.689 | 17.5 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.59 | 751.6 | 29.64 | 752.9 | 61.3 | 16.3 | 75 | SE | 16.1 | 7.2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.34 | 745.3 | 29.60 | 751.8 | 58.1 | 14.5 | 77 | SE | ..... | ..... | 6 | ..... | 10 | SE | ..... | 0.181 | 4.6 | ..... | Cav. F. Meucci. |
| Leghorn | 29.46 | 748.3 | 29.54 | 750.4 | 59.2 | 15.1 | 84 | S | ..... | ..... | 8 | ..... | 10 | S | ..... | 0.976 | 24.8 | ..... | Prof. P. Monte. |
| Rome | 29.58 | 751.2 | 29.75 | 755.6 | 64.8 | 18.2 | 52 | S | 25.5 | 11.4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.73 | 755.2 | 29.98 | 761.6 | 65.5 | 18.6 | 57 | SW | 11.2 | 5.0 | ..... | ..... | 3 | S | ..... | 0.008 | 0.2 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.06 | 738.0 | 29.93 | 760.3 | 64.4 | 18.0 | 73 | SE | 0 | 0 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.53 | 750.0 | 29.72 | 754.9 | 65.3 | 18.5 | 64 | W | ..... | ..... | 4 | ..... | 10 | W | ..... | 0.008 | 0.2 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.57 | 751.1 | 29.82 | 757.5 | 81.5 | 27.5 | 16 | SW | 24.8 | 11.1 | ..... | ..... | 5 | SW | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.89 | 759.3 | 29.97 | 761.2 | 67.1 | 19.5 | 72 | ESE | 9.8 | 4.4 | ..... | ..... | 5 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.32 | 744.6 | 29.87 | 758.7 | 63.5 | 17.5 | 62 | SW | 4.3 | 1.9 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.18 | 766.6 | 30.20 | 767.1 | 47.1 | 8.4 | 69 | NE | 8.3 | 3.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.97 | 761.2 | 30.18 | 766.6 | 47.9 | 8.8 | 81 | NE | 0.8 | 0.4 | ..... | ..... | 1s | ..... | ..... | 0 | 0 | Clear | S. Takehayashi |
| Tokei, (Yeddo) Observatory | 29.96 | 761.0 | 30.03 | 762.7 | 45.3 | 7.4 | 61 | N | 8.7 | 3.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.04 | 636.1 | 30.14 | 765.6 | 50.0 | 10.0 | 43 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. L. Perez. |
| Leon | 24.41 | 620.0 | 30.07 | 763.9 | 60.1 | 15.6 | 64 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.08 | 586.2 | 30.08 | 764.1 | 53.8 | 12.1 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap | Inap. | Very hazy. | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 57.2 | 14.0 | 37 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. V. de Leon, M. E. |
| Tlacotalpam | 29.90 | 759.4 | 29.91 | 759.7 | 66.6 | 19.2 | 86 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Light fog | M. M. Chàzaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | 22.49 | 571.3 | 30.02 | 762.6 | 60.4 | 15.8 | 33 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | J. Castrillon. |
| Puebla, (Catholic Institute) | 23.39 | 594.1 | 30.15 | 765.9 | 50.9 | 10.5 | 67 | NNW | 1.3 | 0.6 | ..... | 1 | 0 | NW | ..... | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.38 | 720.9 | 30.04 | 763.0 | 74.5 | 23.6 | 62 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 507.3 m., or 1,664.4 ft. The data are published as given, except the conversions, which have been revised; the instrumental correction —0.88 mm., has been applied at this office to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.37 | 746.1 | 29.37 | 746.1 | 48.2 | 9.0 | ..... | NNE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.059 | 1.5 | ..... | |
| Groningen | 29.39 | 746.6 | 29.45 | 748.0 | 47.1 | 8.4 | ..... | NE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.043 | 1.1 | ..... | |
| Helder | 29.48 | 747.5 | 29.43 | 747.5 | 42.4 | 5.8 | ..... | NNE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.067 | 1.7 | ..... | |
| Hellevoetsluis | 29.36 | 745.7 | 29.36 | 745.7 | 54.5 | 12.5 | 65 | ENE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.34 | 745.2 | 29.39 | 746.4 | 52.9 | 11.6 | 71 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.295 | 7.5 | Dull | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.45 | 748.1 | 29.51 | 749.5 | 50.7 | 10.4 | 31 | NW | 6.5 | 2.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönø | 29.46 | 748.3 | 29.50 | 749.3 | 37.4 | 3.0 | 66 | N | 27 | 12 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.36 | 745.7 | 29.50 | 749.4 | 49.1 | 9.5 | 41 | NNE | 2 | 1 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.22 | 742.2 | 29.26 | 743.3 | 33.3 | 0.7 | 70 | W | 18 | 8 | ..... | ..... | 9 | ..... | ..... | 0.228 | 5.8 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.98 | 761.6 | 30.17 | 766.4 | 64.4 | 18.0 | 84 | NW | 16.8 | 7.5 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.89 | 733.8 | 29.93 | 760.1 | 57.7 | 14.3 | 49 | WNW | 16.8 | 7.5 | ..... | ..... | 5 | WNW | ..... | 0.150 | 3.8 | ..... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.11 | 764.8 | 30.20 | 767.0 | 66.6 | 19.2 | 70 | S | 3.8 | 1.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.63 | 752.6 | 29.99 | 761.7 | 57.6 | 14.2 | 59 | WNW | 12.5 | 5.6 | ..... | ..... | 10 | NW | ..... | 0.059 | 1.5 | ..... | The Staff. |
| Ponta Delgada, (Azores). | 30.16 | 766.0 | 30.23 | 767.8 | 68.0 | 20.0 | 78 | WNW | 11.2 | 5.0 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | A. G. da Silva Costa. Com'd.t. |
| D. Fernando | ..... | ..... | ..... | A.M.de Sande,Com'd't. |
| Duque da Terceira, San Jose de Bissao, Senegambia | 0 | 0 | Blue sky | C.C.da Fonseca Ferreira,Comd't |
| India | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, S. 4° 16', E. 10° 05' | 2 | SW | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | J.T.d'Oliveria,Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. San Jose de Bissao, Senegambia | 1 | ... | Blue sky | A. Ferreira, 2d Lt |
| Sá da Bandeira | ..... | ..... | ..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo. Macao, China | 2 | SSE | D clouds | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.13 | 740.0 | 29.55 | 750.5 | 62.2 | 16.8 | 43 | SW | 13 | 6 | ..... | ..... | 6c;ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.18 | 741.2 | 29.60 | 751.8 | 49.8 | 9.9 | 65 | SW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Astronomical Obs. |
| Dorpat | 29.23 | 742.5 | 29.48 | 748.7 | 41.4 | 5.2 | 83 | WNW | 11 | 5 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Raining | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.37 | 746.1 | 29.39 | 746.5 | 39.0 | 3.9 | 77 | NW | 9 | 4 | ..... | ..... | 7kn | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.12 | 739.6 | 29.73 | 755.2 | 63.0 | 17.2 | 38 | SSW | 13 | 6 | ..... | ..... | 4ck | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Nikolaiev | 29.85 | 758.1 | 29.92 | 759.9 | 65.3 | 18.5 | 46 | SSW | 22 | 10 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.01 | 762.2 | 30.03 | 762.7 | 59.0 | 15.0 | 78 | SSE | 4 | 2 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.18 | 741.2 | 29.72 | 755.0 | 53.2 | 11.8 | 52 | S | 13 | 6 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.63 | 752.7 | 29.84 | 757.8 | 69.3 | 20.7 | 31 | SW | 13 | 6 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Archangel | 29.18 | 741.1 | 29.20 | 741.6 | 37.2 | 2.9 | 78 | SW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.58 | 725.8 | 29.93 | 760.2 | 70.3 | 21.3 | 55 | Calm | 0 | 0 | ..... | ..... | 6k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.06 | 763.4 | 29.97 | 761.3 | 67.5 | 19.7 | 50 | SE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.39 | 746.6 | 29.86 | 758.4 | 59.5 | 15.3 | 62 | ESE | 13 | 6 | ..... | ..... | 6kn | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.47 | 748.6 | 29.75 | 755.6 | 45.3 | 7.4 | 94 | S | 2 | 1 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 25.93 | 734.9 | 29.87 | 758.7 | 61.7 | 16.5 | 32 | SW | 13 | 6 | ..... | ..... | 7c | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Nukuss | 29.92 | 760.0 | 30.15 | 765.8 | 69.3 | 20.7 | 45 | ENE | 11 | 5 | ..... | ..... | 1c | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.56 | 725.5 | 30.15 | 765.7 | 53.6 | 12.0 | 75 | SE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.37 | 746.1 | 29.88 | 759.0 | 39.4 | 4.1 | 77 | W | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.69 | 754.2 | 30.00 | 761.9 | 26.1 | — 3.3 | 46 | NE | 16 | 7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking, (China) | 29.67 | 753.7 | 29.82 | 757.3 | 60.1 | 15.6 | 50 | SW | 4 | 2 | ..... | ..... | 9n | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.89 | 759.1 | 29.98 | 761.6 | 35.4 | 1.9 | 62 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.44 | 747.8 | 29.54 | 750.4 | 61.2 | 16.2 | 52 | W | 7.2 | 3.23 | ..... | ..... | 8 | ..... | ..... | 0.205 | 5.20 | ..... | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 29.61 | 752.2 | 29.67 | 753.7 | 51.1 | 10.6 | 100 | NW | 7.5 | 3.34 | ..... | ..... | 10 | ..... | ..... | 0.425 | 10.8 | Raining | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.73 | 678.9 | ..... | ..... | 48.2 | 9.0 | 65 | NW | 17.3 | 7.75 | ..... | ..... | 8 | ..... | ..... | 0.315 | 8.0 | Drizzling | Domingo Martin y Perez. |
| Madrid, Royal Osservatory | 27.50 | 698.4 | ..... | ..... | 55.2 | 12.9 | 71 | W | 20.9 | 9.34 | ..... | 2 | 8 | N | ..... | 0.291 | 7.4 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.59 | 751.6 | 29.74 | 755.4 | 72.0 | 22.2 | 31 | WNW | 3.2 | 1.44 | ..... | 2 | 3 | SE | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.87 | 733.3 | 29.76 | 756.0 | 56.7 | 13.7 | 63 | SW | 9.8 | 4.4 | ..... | ..... | 6 | ..... | ..... | 0.319 | 8.1 | Cloudy | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.02 | 762.6 | 30.09 | 764.3 | 71.7 | 22.1 | 78 | E | 4.5 | 2.0 | ..... | 1c | 2k;ks | ..... | ..... | 0 | 0 | Fair | Benito Vines, S. J |
| Manilla, Philippine Islands. | 29.68 | 753.8 | 29.72 | 755.0 | 82.9 | 28.3 | 91 | ESE | 7.4 | 3.3 | ..... | 3 | 6 | NE | SW | 0.669 | 17.0 | Covered | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 29.94 | 760.5 | 30.04 | 763 0 | 60.6 | 15.9 | 69 | WNW | 19.0 | 8.5 | ..... | 0 | 9 | ..... | W | 0.669 | 17.0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W.I | 29.98 | 761.4 | 30.08 | 763.7 | 80.2 | 26.8 | 78 | SE | 3 9 | 1.75 | ..... | 6k | 5k | SE | SE | 0.443 | 11.25 | Cloudy | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.28 | 743.6 | 29.32 | 744.6 | 39.9 | 4.4 | .... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.20 | 743.9 | 29.34 | 745.2 | 41.7 | 5.4 | 60 | NW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.36 | 745.6 | 29.41 | 746.9 | 42.8 | 6.0 | 76 | SW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0.126 | 3.2 | ..... | |
| Stockholm | 29.30 | 744.1 | 29.47 | 748.6 | 42.1 | 5.6 | 69 | WSW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.094 | 2.4 | ..... | |
| Wisby | 29.41 | 747.1 | 29.47 | 748.6 | 39.6 | 4.2 | 84 | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.004 | 0.1 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.40 | 746.7 | 29.47 | 748.6 | 39.7 | 4.3 | 70 | NNW | 6.0 | 2.7 | ..... | ..... | 10 | ..... | NW | 0.015 | 0.38 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.10 | 713.6 | 29.55 | 750.5 | 45.0 | 7.2 | 77 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.252 | 6.4 | Covered..... | The Observatory. |
| Zurich | 27.81 | 706.3 | 29.44 | 747.8 | 55.0 | 12.8 | 60 | NW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.276 | 7.0 | Cloudy ..... | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —10.7 mm.; Thermometer,—5.6 Cent.; Relative Humidity, +20 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,338.6 feet, and that of Zurich 470 m., or 1,542.0 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.03 | 762.7 | 68.7 | 20.4 | 49 | SW | 4 | 2.0 | ..... | ..... | 2 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.12 | 765.0 | 89.6 | 32.0 | ..... | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 30.00 | 762.1 | 66.7 | 19.3 | ..... | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut. (Syria,) Lee Obs'y | 29.92 | 760.0 | 30.04 | 762.9 | 71.2 | 21.8 | 69 | W | ..... | ..... | 2 | ..... | 1s | ..... | W | 0.008 | 0.02 | D.clouds..... | Prof. C.V.A.Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.83 | 757.7 | 29.90 | 759.4 | 36.7 | 2.6 | 59 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.89 | 759.2 | 30.20 | 767.1 | 49 | 9.4 | ..... | W | 1 | 0.4 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear ..... | W. R. Bigg. |
| *Chatham, N. B | 29.85 | 758.2 | 29.91 | 759.7 | 38 | 3.3 | 39 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | G. A. Blair. |
| Charlottetown, P. E. Island | 29.84 | 757.9 | 29.88 | 758.9 | 34 | 1.1 | 81 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.93 | 760.2 | 30.13 | 765.3 | 41.0 | 5.0 | 58 | NW | ..... | ..... | 1 | 0 | 1s | ..... | ..... | 0 | 0 | Fine..... | James Smith, M. A. |
| Dalhousie, N. B | 29.73 | 755.1 | 29.90 | 759.4 | 38 | 3.3 | ..... | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | H. A. Johnson. |
| Esquimault, B. C | 30.32 | 770.1 | 30.37 | 771.4 | 48.3 | 9.1 | 100 | W | 4 | 1.8 | ..... | 1cs | 0 | ..... | ..... | 0.02 | 0.5 | Fine..... | W. H. Bevis. |
| *Father Point, Quebec | 29.94 | 760.5 | 29.96 | 761.0 | 34 | 1.1 | 72 | NW | 15 | 6.7 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Clear..... | J. McWilliams. |
| Fredericton, N. B | 29.91 | 759.7 | 29.98 | 761.5 | 57.6 | 3.1 | 39 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.13 | 739.9 | 29.95 | 760.7 | 50 | 10.0 | 54 | SE | 8 | 3.6 | ..... | 5k | 5n | S | S | 0 | 0 | Threatening | James Stewart. |
| Granton, Ontario | 29.15 | 740.4 | 30.28 | 769.1 | 42 | 5.6 | ..... | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | James Grant. |
| *Halifax, N. S | 29.75 | 755.6 | 29.89 | 759.2 | 42 | 5.6 | 55 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.90 | 759.4 | 30.28 | 769.1 | 44.5 | 6.9 | 56 | SW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Clear..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.83 | 757.7 | 30.18 | 766.6 | 43 | 6.1 | 62 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.83 | 757.7 | 29.87 | 758.7 | 36.2 | 2.3 | 82 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair ..... | C. H. Rigby. |
| Moose Factory, Ontario | 30.24 | 768.1 | 30.27 | 768.8 | 27.2 | 2.7 | 100 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Misty..... | J. R. Nason. |
| *Montreal, Quebec | 29.92 | 760.0 | 30.13 | 765.3 | 42 | 5.6 | 41 | NW | 12 | 5.4 | ..... | 8cs | 2s | ..... | ..... | 0 | 0 | Cloudy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.54 | 750.3 | 30.26 | 768.6 | 37 | 2.8 | 90 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | Rev. R. Mosly. |
| Peterboro, Ontario | 29.48 | 748.8 | 30.25 | 768.3 | 42.7 | 5.9 | 58 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.56 | 750.8 | 30.28 | 769.1 | 36 | 2.2 | 90 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | H. Morgan. |
| Port Hastings, N. S | 29.85 | 758.2 | 29.90 | 759.4 | 36.4 | 2.4 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine..... | Peter Grant. |
| Port Stanley, Ontario | 29.62 | 752.3 | 30.28 | 769.1 | 38 | 3.3 | 62 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | M. Payne. |
| *Quebec, Quebec | 29.71 | 754.6 | 30.04 | 763.0 | 38 | 3.3 | 63 | NW | ..... | ..... | 1 | 0 | 2ks | ..... | NW | 0 | 0 | Fair..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.76 | 755.9 | 30.24 | 768.1 | 36 | 2.2 | 65 | Calm | 0 | 0 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair..... | W. H. McIntyre. |
| St. Andrews, N. B | 29.92 | 760.0 | 29.97 | 761.2 | 38 | 3.3 | 48 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Dr. Gove. |
| St. John, N. B | 29.78 | 756.4 | 29.95 | 760.7 | 39 | 3.9 | 51 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.53 | 750.0 | 30.26 | 768.6 | 41 | 5.0 | 49 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | K. Stewart. |
| Stayner, Ontario | 29.44 | 747.8 | 30.23 | 767.8 | 46 | 7.8 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | R. J. Cole. |
| Stratford, Ontario | 28.92 | 734.6 | 30.26 | 768.6 | 34.7 | 1.5 | 88 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.83 | 757.7 | 29.87 | 758.7 | 41 | 5.0 | 46 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | T. C. Hill. |
| *Toronto, Ontario | 29.88 | 758.9 | 30.27 | 768.8 | 42 | 5.6 | 48 | W | 2 | 0.9 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear..... | Magnetic Observatory. |
| Windsor, N. S | 29.80 | 756.9 | 29.90 | 759.4 | 41.5 | 5.3 | 70 | W | 3 | 1.3 | ..... | 1cs | 0 | ..... | ..... | 0 | 0 | Fine..... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 32.0 | 0.0 | 100 | NE | ..... | ..... | ..... | 5k | 10s | ..... | ..... | 0 | 0 | Cloudy..... | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the co-operation of Byt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'r 0—10. | Clouds. Amount. Lw'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.97 | 761.2 | 30.20 | 767.1 | 44 | 6.7 | 60 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Alpena, Michigan | 29.61 | 752.1 | 30.28 | 769.1 | 39 | 3.9 | 46 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Atlanta, Georgia | 29.02 | 737.1 | 30.18 | 766.6 | 53 | 11.7 | 60 | E | 6 | 2.7 | ..... | 2c | Haze | Calm | Calm | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 30.22 | 767.6 | 30.23 | 767.8 | 46 | 7.8 | 77 | N | 7 | 3.1 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Augusta, Georgia | 30.05 | 763.3 | 30.23 | 767.8 | 52 | 11.1 | 73 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 30.23 | 767.8 | 30.28 | 769.1 | 51 | 10.6 | 40 | NE | 4 | 1.8 | ..... | 2cs | Sm'e | NW | Calm | 0 | 0 | Fair | |
| Barnegat, New Jersey | 30.19 | 766.8 | 30.21 | 767.3 | 46 | 7.8 | 62 | NW | 8 | 3.6 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Bismarck, Dakota | 27.92 | 709.2 | 29.97 | 761.2 | 47 | 8.3 | 62 | SE | 12 | 5.4 | ..... | 5cs | 5s | SE | SE | Inap. | Inap. | Cloudy | |
| Boerne, Texas | 28.32 | 719.3 | 29.59 | 751.6 | 65 | 18.3 | 54 | SE | 12 | 5.4 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.38 | 695.4 | 30.34 | 770.6 | 37 | 2.8 | 71 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear | |
| Boston, Massachusetts | 29.96 | 761.0 | 30.12 | 765.0 | 48 | 8.9 | 49 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Brackettville, Texas | 28.60 | 726.4 | 29.59 | 751.6 | 66 | 18.9 | 79 | E | 10 | 4.5 | ..... | ..... | 10ks | ..... | E | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 28.86 | 733.0 | 29.85 | 758.2 | 49 | 9.4 | 37 | SE | 14 | 6.3 | ..... | 10c | 0 | W | ..... | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.74 | 755.4 | 29.79 | 756.7 | 75 | 23.9 | 64 | SE | 20 | 8.9 | ..... | 5k | 2s | S | Calm | 0 | 0 | Fair | |
| Buffalo, New York | 29.55 | 750.6 | 30.28 | 769.1 | 38 | 3.3 | 54 | S | 5 | 2.2 | ..... | 1c | Haze | NW | Calm | 0 | 0 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 53 | 11.7 | 19 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.85 | 758.2 | 30.15 | 765.8 | 42 | 5.6 | 58 | N | 1 | 0.4 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Cairo, Illinois | 29.74 | 755.4 | 30.13 | 765.3 | 59 | 15.0 | 33 | E | 8 | 3.6 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.01 | 635.2 | 29.81 | 757.2 | 45 | 7.2 | 46 | NW | 16 | 7.2 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 40 | 4.4 | 48 | NW | ..... | ..... | 4 | 2k | 0 | NW | ..... | 0 | 0 | Clear | |
| Campo, California | 27.45 | 697.2 | 30.02 | 762.5 | 37 | 2.8 | 81 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.27 | 768.8 | 30.28 | 769.1 | 55 | 12.8 | 50 | Calm | 0 | 0 | ..... | 5c | Haze | W | ..... | 0 | 0 | Hazy | |
| Cape Henry, Virginia | 30.23 | 767.8 | 30.25 | 768.3 | 51 | 10.6 | 59 | SW | 8 | 3.6 | ..... | 1c | 5ks | Calm | Calm | 0 | 0 | Fair | |
| Cape Lookout, N. Carolina | 30.25 | 768.3 | 30.26 | 768.6 | 57 | 13.9 | 63 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape May, New Jersey | 30.18 | 766.1 | 30.19 | 766.8 | 47 | 8.3 | 77 | N | 8 | 3.6 | ..... | 8c | 0 | N | ..... | 0 | 0 | Fair | |
| Castroville, Texas | 29.00 | 736.6 | 29.67 | 753.6 | 68 | 20.0 | 74 | S | 12 | 5.4 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 30.18 | 766.6 | 30.24 | 768.1 | 58 | 14.4 | 82 | NE | 4 | 1.8 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 23.61 | 599.7 | 29.55 | 750.6 | 37 | 2.8 | 81 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Threatening | |
| Chicago, Illinois | 29.48 | 748.8 | 30.18 | 766.6 | 49 | 9.4 | 57 | E | 5 | 2.2 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Cincinnati, Ohio | 29.61 | 752.1 | 30.28 | 769.1 | 46 | 7.8 | 69 | Calm | 0 | 0 | ..... | 0 | Sm'e;fr | ..... | Calm | 0 | 0 | Clear | |
| Cleveland, Ohio | 29.54 | 750.3 | 30.29 | 769.4 | 40 | 4.4 | 56 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Coleman City, Texas | 27.91 | 708.9 | 29.51 | 749.5 | 62 | 16.7 | 67 | SE | 16 | 7.2 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Columbus, Ohio | 29.43 | 747.5 | 30.29 | 769.4 | 44 | 6.7 | 60 | NE | 1 | 0.4 | ..... | 0 | Fog | ..... | ..... | 0 | 0 | Clear | |
| Corpus Christi, Texas | 27.76 | 705.1 | 29.32 | 744.7 | 65 | 18.3 | 73 | S | 16 | 7.2 | ..... | 0 | 5s | ..... | S | 0 | 0 | Fair | |
| Corsicana, Texas | 29.36 | 745.7 | 29.81 | 757.2 | 63 | 17.2 | 89 | SE | 8 | 3.6 | ..... | 0 | 8s | ..... | SW | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.46 | 748.3 | 30.10 | 764.5 | 46 | 7.8 | 62 | E | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.01 | 635.2 | ..... | ..... | 45 | 7.2 | 92 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | E | 0.18 | 4.6 | Light rain | |
| Decatur, Texas | 28.54 | 724.9 | 29.66 | 753.4 | 65 | 18.3 | 89 | S | 28 | 12.5 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Denison, Texas | 28.99 | 736.3 | 29.76 | 755.9 | 64 | 17.8 | 78 | SE | 14 | 6.3 | ..... | 2k | 2ks | SW | SW | 0 | 0 | Fair | |
| Denver, Colorado | 24.33 | 618.0 | 29.55 | 750 6 | 41 | 5.0 | 91 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | N | 0.05 | 1.3 | Cloudy | |
| Des Moines, Iowa | 29.02 | 737.1 | 29.89 | 759.2 | 51 | 10.6 | 59 | SE | 16 | 7.2 | ..... | 5c | Haze | NW | Calm | 0 | 0 | Fair | |
| Detroit, Michigan | 29.58 | 751.3 | 30.27 | 768.8 | 45 | 7.2 | 61 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dodge City, Kansas | 26.86 | 682.2 | 29.02 | 737.1 | 57 | 13.9 | 52 | S | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.42 | 747.2 | 30.13 | 765.3 | 48 | 8.9 | 56 | SE | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Duluth, Minnesota | 29.46 | 748.3 | 30.15 | 765.8 | 41 | 5.0 | 57 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 28.92 | 734.6 | 29.64 | 752.8 | 63 | 17.2 | 83 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.91 | 759.7 | 29.98 | 761.5 | 40 | 4.4 | 48 | NW | 10 | 4.5 | ..... | 2cs | 0 | W | ..... | 0 | 0 | Clear | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 68 | 20.0 | 79 | S | ..... | ..... | 6 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| El Paso, Texas | 25.98 | 659.9 | ..... | ..... | 52 | 11.1 | 19 | W | 12 | 5.4 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.55 | 750.6 | 30.28 | 769.1 | 46 | 7.8 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Escanaba, Michigan | 29.60 | 751.8 | 30.29 | 769.4 | 31 | — 0.6 | 58 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.38 | 720.8 | 29.98 | 761.5 | 50 | 10.0 | 32 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.73 | 704.3 | ..... | ..... | 50 | 10.0 | 58 | E | 7 | 3.1 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Fort Craig, New Mexico | 25.25 | 641.3 | 29.31 | 744.5 | 40 | 4.4 | 30 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 24.92 | 633.0 | 29.88 | 758.9 | 59 | 15.0 | 17 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.24 | 742.7 | 29.76 | 755.9 | 65 | 18.3 | 68 | SE | 16 | 7.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Fort Griffin, Texas | 28.36 | 720.3 | 29.57 | 751.1 | 64 | 17.8 | 78 | S | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.20 | 690.9 | ..... | ..... | 45 | 7.2 | 84 | N | 13 | 5.8 | ..... | ..... | 10s | ..... | Calm | 0.38 | 9.7 | Cloudy | |
| Fort McKavett, Texas | 27.44 | 697.0 | 29.26 | 743.2 | 63 | 17.2 | 72 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | 29.79 | 756.7 | 29.82 | 757.4 | 13 | —10.6 | 100 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 28.43 | 722.1 | 29.49 | 749.0 | 62 | 16.7 | 77 | SE | 14 | 6.3 | ..... | 0 | 8s | ..... | S | 0 | 0 | Cloudy | |
| Fort Stevenson, Dakota | 27.94 | 709.7 | ..... | ..... | 48 | 8.9 | 62 | E | 12 | 5.4 | ..... | 4c | 0 | E | ..... | 0 | 0 | Fair | |
| Fredericksburg, Texas | 28.02 | 711.7 | 29.51 | 749.5 | 65 | 18.3 | 84 | S | 20 | 8.9 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Galveston, Texas | 29.86 | 758.4 | 29.90 | 759.4 | 72 | 22.2 | 80 | SE | 11 | 4.9 | ..... | 0 | 5ks | ..... | SE | 0 | 0 | Fair | |
| Graham, Texas | 28.57 | 725.7 | 29.57 | 751.1 | 66 | 18.9 | 69 | SE | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.56 | 750.8 | 30.24 | 768.1 | 38 | 3.3 | 54 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.42 | 747.2 | 30.20 | 767.1 | 50 | 10.0 | 45 | E | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianola, Texas | 29.82 | 757.4 | 29.84 | 757.9 | 72 | 22.2 | 76 | S | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.54 | 724.9 | 29.62 | 752.3 | 69 | 20.6 | 61 | S | 24 | 10.7 | ..... | 0 | 1s | ..... | S | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.17 | 766 3 | 30.20 | 767.1 | 64 | 17.8 | 73 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.38 | 746.2 | 29.99 | 761.7 | 52 | 11.1 | 47 | SE | 21 | 9.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Key West, Florida | 30.09 | 764.3 | 30.13 | 765.3 | 72 | 22.2 | 80 | E | 9 | 4.0 | ..... | 1c | 0 | NW | ..... | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 30.21 | 767.3 | 30.24 | 768.1 | 55 | 12.8 | 62 | W | 10 | 4.5 | ..... | 6c;k | 0 | W;E | ..... | 0 | 0 | Fair | |
| Knoxville, Tennessee | 29.22 | 742.2 | 30.24 | 768.1 | 47 | 8.3 | 73 | NE | 2 | 0.9 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| La Crosse, Wisconsin | 29.38 | 746.2 | 30.12 | 765.0 | 51 | 10.6 | 53 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | |
| La Mesilla, New Mexico | 25.82 | 655.8 | 29.97 | 761.2 | 47 | 8.3 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.30 | 744.2 | 29.62 | 752.3 | 71 | 21.7 | 62 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.93 | 734.8 | 29.75 | 755.6 | 57 | 13.9 | 58 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | ..... | Inap. | Inap. | Cloudy | |
| Los Angeles, California | 29.74 | 755.4 | 30.08 | 764.0 | 55.0 | 12.8 | 39 | W | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.65 | 753.1 | 30.22 | 767.6 | 48 | 8.9 | 49 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.54 | 750.3 | 30.23 | 767.8 | 48 | 8.9 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Madison, Wisconsin | 29.17 | 740.9 | 30.18 | 766.6 | 45 | 7.2 | 53 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.50 | 749.3 | 30.22 | 767.6 | 38 | 3.3 | 63 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.10 | 713.7 | 29.78 | 756.4 | 65 | 18.3 | 73 | SE | 16 | 7.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.77 | 756.1 | 30.08 | 764.0 | 58 | 14.4 | 53 | SE | 6 | 2.7 | ..... | 2c | Sm'e | Calm | Calm | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.47 | 748.5 | 30.21 | 767.3 | 44 | 6.7 | 60 | NE | 2 | 0.9 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| Mobile, Alabama | 30.10 | 764.5 | 30.15 | 765.8 | 57.5 | 14.2 | 96 | SW | 3 | 1.3 | ..... | 0 | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Montgomery, Alabama | 29.93 | 760.2 | 30.17 | 766.3 | 60 | 15.6 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Morgantown, West Virginia | 29.18 | 741.2 | 30.27 | 768.8 | 42 | 5.6 | 74 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mt. Washington, N. H. | 23.62 | 599.9 | 29.98 | 761.5 | 14 | —10.0 | 63 | NW | 48 | 21.5 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Clear | |
| Nashville, Tennessee | 29.65 | 753.1 | 30.19 | 766.8 | 54 | 12.2 | 55 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 30.06 | 763.5 | 30.18 | 766.6 | 50 | 10.0 | 52 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New London, Connecticut | 30.11 | 764.8 | 30.16 | 766.1 | 52 | 11.1 | 47 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Orleans, Louisiana | 30.03 | 762.8 | 30.09 | 764.3 | 60 | 15.6 | 88 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 30.09 | 764.3 | 30.14 | 765.5 | 47.5 | 8.6 | 52 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New York, New York | 30.04 | 763.0 | 30.22 | 767.6 | 46 | 7.8 | 61 | W | 2 | 0.9 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Smoky | |
| Norfolk, Virginia | 30.26 | 767.1 | 30.26 | 768.6 | 52 | 11.1 | 60 | SW | 5 | 2.2 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |

UNITED STATES SERIES.—CONTINUED.

| TATIONS | BAROMETER. Corrected for instrumental error and temperature. Inches. | BAROMETER. Corrected for instrumental error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Upper. 0—10 | CLOUDS. Amount. Lower. 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 26.54 | 674.1 | 28.98 | 736.1 | 52 | 11.1 | 79 | E | 20 | 8.9 | ... | 2c | 2s | SE | SE | Inap. | Inap. | Fair | |
| Olympia, Washington Ter. | 30.42 | 772.6 | 30.46 | 773.7 | 43.2 | 6.2 | 92 | S | 5 | 2.2 | ... | 0 | 4s | ... | S | 0.13 | 3.3 | Fair | |
| Omaha, Nebraska | 28.60 | 726.4 | 29.66 | 753.4 | 56 | 13.3 | 63 | SE | 17 | 7.6 | ... | ... | 10n | ... | Calm | Inap. | Inap. | Light rain | |
| Oswego, New York | 29.91 | 759.7 | 30.24 | 768.1 | 41 | 5.0 | 65 | W | 12 | 5.4 | ... | 8cs | 0 | E | ... | 0 | 0 | Fair | |
| Pembina, Dakota | 29.07 | 738.4 | 29.90 | 759.4 | 47 | 8.3 | 70 | SE | 12 | 5.4 | ... | ... | 10s | ... | W | 0 | 0 | Cloudy | |
| Philadelphia, Pa | 30.18 | 766.6 | 30.23 | 767.8 | 48 | 8.9 | 43 | NW | 12 | 5.4 | ... | 0 | Sm'e | ... | Calm | 0 | 0 | Clear | |
| Phœnix, Arizona | 28.70 | 729.0 | 30.52 | 775.2 | 50 | 10.0 | 45 | W | 1 | 0.4 | ... | 0 | 0 | ... | ... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.28 | 438.9 | 29.49 | 749.0 | 9 | —12.8 | 100 | NE | 8 | 3.6 | ... | ... | 10n | ... | NE | 0.98 | 24.9 | Light snow | |
| Pioche, Nevada | 23.94 | 608.1 | 29.71 | 754.6 | 28 | — 2.2 | 77 | N | 13 | 5.8 | ... | 0 | 8s | ... | NW | 0.02 | 0.5 | Fair | |
| Pittsburg, Pennsylvania | 29.46 | 748.3 | 30.32 | 770.1 | 34 | 1.1 | 90 | NW | 1 | 0.4 | ... | 0 | Fog | ... | Calm | 0 | 0 | Foggy | |
| Port Huron, Michigan | 29.58 | 751.3 | 30.26 | 768.6 | 43 | 6.1 | 59 | Calm | 0 | 0 | ... | 0 | Sm'e | ... | ... | 0 | 0 | Clear | |
| Portland, Maine | 30.01 | 762.2 | 30.06 | 763.5 | 46 | 7.8 | 54 | NW | 4 | 1.8 | ... | 0 | 0 | ... | ... | 0 | 0 | Clear | |
| Portland, Oregon | 30.48 | 774.2 | 30.58 | 776.7 | 45.3 | 7.4 | 76 | S | 2 | 0.9 | ... | 0 | 8s | ... | S | 0.13 | 3.3 | Cloudy | |
| Prescott, Arizona | 24.58 | 624.3 | 29.94 | 760.5 | 36 | 2.2 | 45 | N | 4 | 1.8 | ... | 0 | 0 | ... | ... | 0 | 0 | Clear | |
| Pilot Point, Texas | 28.91 | 734.3 | 29.71 | 754.6 | 61 | 16.1 | 77 | N | 14 | 6.3 | ... | 2k | 0 | NW | ... | 0 | 0 | Fair | |
| Punta Rassa, Florida | 30.19 | 766.8 | 30.21 | 767.3 | 64 | 17.8 | 73 | NE | 9 | 4.0 | ... | 2cs | 0 | SW | ... | 0 | 0 | Clear | |
| Red Bluff, California | 30.01 | 762.2 | 30.39 | 771.9 | 45 | 7.2 | 61 | N | 4 | 1.8 | ... | 0 | 0 | ... | ... | 0 | 0 | Clear | |
| Rio Grande City, Texas | 29.56 | 750.8 | 29.76 | 755.9 | 69 | 20.6 | 70 | SE | 16 | 7.2 | ... | 0 | 0 | ... | ... | 0 | 0 | Clear | |
| Rochester, New York | 29.61 | 752.1 | 30.25 | 768.3 | 41 | 5.0 | 49 | W | 7 | 3.1 | ... | 2c | 0 | W | ... | 0 | 0 | Clear | |
| Roseburg, Oregon | 29.99 | 761.7 | 30.59 | 777.0 | 37.0 | 2.8 | 95 | Calm | 0 | 0 | ... | ... | 10s | ... | Calm | 0.06 | 1.5 | Cloudy | |
| Sacramento, California | 30.21 | 767.3 | 30.29 | 769.4 | 61 | 10.6 | 59 | N | 20 | 8.9 | ... | 0 | 0 | ... | ... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.51 | 749.5 | 30.08 | 764.0 | 52 | 11.1 | 47 | SE | 16 | 7.2 | ... | 0 | Sm'e | ... | ... | 0 | 0 | Clear | |
| St. Marks, Florida | 30.17 | 766.3 | 30.18 | 766.6 | 60 | 15.6 | 94 | Calm | 0 | 0 | ... | 0 | 0 | ... | ... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.16 | 740.7 | 29.98 | 761.5 | 50 | 10.0 | 38 | SE | 15 | 6.7 | ... | 1cs | 0 | Calm | ... | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.51 | 647.9 | 29.84 | 757.9 | 36 | 2.2 | 71 | NW | 10 | 4.5 | ... | ... | 10n | ... | Calm | 0.87 | 22.1 | Light snow | |
| San Antonio, Texas | 29.13 | 739.9 | 29.69 | 754.1 | 70 | 21.1 | 66 | SE | 6 | 2.7 | ... | 10k | 0 | SE | ... | 0 | 0 | Cloudy | |
| San Diego, California | 30.03 | 762.8 | 30.11 | 764.8 | 49 | 9.4 | 85 | Calm | 0 | 0 | ... | 0 | 0 | ... | ... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.61 | 752.1 | 30.30 | 769.6 | 46 | 7.8 | 54 | S | 3 | 1.3 | ... | 0 | Sm'e | ... | Calm | 0 | 0 | Clear | |
| Sandy Hook, New Jersey | 30.16 | 766.1 | 30.19 | 766.8 | 51 | 10.6 | 59 | W | 10 | 4.5 | ... | 0 | 0 | ... | ... | 0 | 0 | Clear | |
| San Francisco, California | 30.25 | 768.3 | 30.32 | 770.1 | 49 | 9.4 | 64 | NW | 8 | 3.6 | ... | 0 | 0 | ... | ... | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 22.87 | 580.9 | 29.41 | 747.0 | 30 | — 1.1 | 61 | S | 10 | 4.5 | ... | 2k | 8s | W | S | 0.03 | 0.8 | Clear | |
| Savannah, Georgia | 30.13 | 765.3 | 30.22 | 767.6 | 64 | 17.8 | 78 | NE | 3 | 1.3 | ... | 1c | Haze | Calm | Calm | 0 | 0 | Cloudy | |
| Shreveport, Louisiana | 29.71 | 754.6 | 29.93 | 760.2 | 63 | 17.2 | 83 | S | 10 | 4.5 | ... | ... | 10s | ... | SW | 0 | 0 | Clear | |
| Silver City, New Mexico | 24.04 | 610.6 | 30.23 | 767.8 | 40 | 4.4 | 40 | NW | 4 | 1.8 | ... | 0 | 0 | ... | ... | 0 | 0 | Cloudy | |
| Smithville, North Carolina | 30.24 | 768.1 | 30.28 | 769.1 | 58 | 14.4 | 82 | S | 4 | 1.8 | ... | 0 | 0 | ... | ... | 0 | 0 | Clear | |
| Springfield, Massachusetts | 30.04 | 763.0 | 30.18 | 766.6 | 46 | 7.8 | 62 | S | 2 | 0.9 | ... | 0 | Sm'e | ... | ... | 0 | 0 | Clear | |
| Stockton, Texas | 26.63 | 676.4 | 29.63 | 752.6 | 60 | 15.6 | 20 | SW | 4 | 1.8 | ... | 0 | 0 | ... | ... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.04 | 763.0 | 30.09 | 764.3 | 48 | 8.9 | 43 | NW | 17 | 7.6 | ... | 0 | 0 | ... | ... | 0 | 0 | Clear | |
| Toledo, Ohio | 29.56 | 750.8 | 30.26 | 768.6 | 50 | 10.0 | 65 | Calm | 0 | 0 | ... | 0 | 0 | ... | ... | 0 | 0 | Clear | |
| Tucson, Arizona | 27.41 | 696.2 | 29.96 | 761.0 | 56 | 13.3 | 34 | W | 5 | 2.2 | ... | 0 | Haze | ... | Calm | 0 | 0 | Clear | |
| Umatilla, Oregon | 30.10 | 764.5 | 30.62 | 777.7 | 43.0 | 6.1 | 75 | SW | 20 | 8.9 | ... | 0 | 0 | ... | ... | 0 | 0 | Clear | |
| Unalashka, Aleutian Islands | ... | ... | ... | ... | 29 | - 1.7 | 100 | NW | ... | ... | 1 | ... | 10s | ... | NW | 0.01 | 0.3 | Clear | |
| Uvalde, Texas | 28.88 | 733.5 | 29.69 | 754.1 | 65 | 18.3 | 78 | E | 4 | 1.8 | ... | ... | 10s | ... | SE | 0.06 | 1.5 | Cloudy | |
| Vicksburg, Mississippi | 29.85 | 758.2 | 30.11 | 764.8 | 59 | 15.0 | 82 | S | 10 | 4.5 | ... | 0 | 0 | ... | ... | 0 | 0 | Cloudy | |
| Virginia City, Montana | 24.28 | 616.7 | 29.76 | 755.9 | 33 | 0.6 | 100 | Calm | 0 | 0 | ... | ... | 10n | ... | Calm | 0.55 | 14.0 | Light snow | |
| Visalia, California | 29.85 | 758.2 | 30.24 | 768.1 | 43.5 | 6.4 | 94 | NW | 2 | 0.9 | ... | 0 | 0 | ... | ... | 0.19 | 4.8 | Clear | |
| Washington, D. C. | 30.15 | 765.8 | 30.27 | 768.8 | 48 | 8.9 | 56 | NE | 3 | 1.3 | ... | 5c | Sm'e | NW | ... | 0 | 0 | Fair | |
| Wickenburg, Arizona | ... | ... | ... | ... | 50 | 10.0 | 39 | NW | ... | ... | 4 | 0 | 0 | ... | ... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.18 | 766.6 | 30.26 | 768.6 | 53 | 11.7 | 80 | Calm | 0 | 0 | ... | 0 | 0 | ... | ... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.85 | 656.6 | 30.21 | 767.3 | 33 | 0.6 | 61 | NW | 18 | 8.0 | ... | 0 | 0 | ... | ... | Inap. | Inap. | Clear | |
| Wood's Holl, Mass | 30.09 | 764.3 | 30.13 | 765.3 | 45 | 7.2 | 68 | NW | 6 | 2.7 | ... | 0 | 0 | ... | ... | 0 | 0 | Clear | |
| Yankton, Dakota | 28.44 | 722.4 | 29.70 | 754.4 | 50 | 10.0 | 79 | SE | 20 | 8.9 | ... | ... | 10n | ... | S | 0.05 | 1.3 | Light rain | |
| Yuma, Arizona | 29.80 | 756.9 | 29.96 | 761.0 | 56 | 13.3 | 57 | W | 2 | 0.9 | ... | 0 | 0 | ... | ... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.27 | 718.0 | 29.64 | 752.8 | 60 | 15.6 | 70 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.04 | 763.0 | 30.09 | 764.3 | 74 | 23.3 | 72 | Calm | 0 | 0 | ... | 2ck | 0 | W | ... | 0 | 0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | James Gall. |
| Medellin, Colombia, S. A. | 25.24 | 641.1 | ... | ... | 66.5 | 19.2 | 82 | Calm | ... | ... | 0 | 4ck | 6ks | ... | ... | 0.27 | 6.9 | ... | Thomas Herran. |
| Navassa, W. I. | 29.95 | 760.7 | 30.03 | 762.8 | 79 | 26.1 | ... | NE | 12 | 5.4 | ... | ... | ... | ... | ... | ... | ... | Cloudy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.06 | 763.5 | 30.06 | 763.5 | 81 | 27.2 | 87 | E | ... | ... | 3 | 8cs | ... | ... | ... | 0 | 0 | ½ clouded | C. J. Hering. |
| Santiago de Cuba, W. I. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | Robert Mason. |
| St. Thomas, W. I. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | G. O. Gellich. |
| York Factory, B. A. | 29.85 | 758.2 | 29.90 | 759.4 | 40.0 | 4.4 | 96 | SE | 13 | 5.8 | ... | ... | 10s | ... | S | 0 | 0 | Threatening | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m., Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.24 | 768.1 | 45 | 7.2 | 44 | 6.7 | 84 | ENE | 0 | 0 | .... | ..... | 0 | ..... | ..... | 1.002 | 25.45 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 30.25 | 768.3 | 63 | 17.2 | 63 | 17.2 | 89 | NE | 3 | 1.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 30.12 | 765.0 | 70 | 21.1 | 42 | 5.6 | 91 | NW | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan.....* | 30.00‡ | 762.0‡ | ..... | ..... | 47.5 | 8.6 | 51 | NNE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0.20 | 5.1 | ..... | ..... | Clear..... | |
| Adams, Panama .....* | 30.00 | 762.0 | 81 | 27.2 | 78 | 25.6 | 95 | NNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Fair ..... | |
| Alaska, Esquimault, Vancouver I. | 30.40‡ | 772.1‡ | ..... | ..... | 48 | 8.9 | 78 | W | ..... | ..... | 4 | ..... | 5 | ..... | E | 0 | 0 | Smooth | ..... | D. clouds..... | |
| Alliance, Naples, Italy..... | 29.83‡ | 757.7‡ | ..... | ..... | 66 | 18.9 | 64 | S | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant..... | |
| Ashuelot, Hong-Kong, China. ...* | 29.98‡ | 761.5‡ | ..... | ..... | 67 | 19.4 | 69 | ESE | ..... | .... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Canonicus, New Orleans, La.....* | 30.09 | 764.3 | 47 | 8.3 | 63 | 17.2 | 83 | ESE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Colorado, New York, N. Y..... | 30.21 | 767.3 | 55 | 12.8 | 49. | 9.4 | 50 | W | 3 | 1.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Hazy..... | |
| Constitution N. 26° 46′, W. 21° 45 ..... | 30.28‡ | 769.1‡ | ..... | ..... | 71 | 21.7 | 85 | NNE | ..... | ..... | 4 | ..... | 7 | ..... | Calm | ..... | ..... | Smooth | NW | Cloudy ..... | |
| Despatch, Genoa, Italy..... | 29.52‡ | 749.8‡ | ..... | ..... | 48 | 8.9 | 100 | NNE | ..... | ..... | 4 | ..... | 10 | ..... | NE | ..... | ..... | Smooth | ..... | Rainy ..... | |
| Essex, Montevideo, Uruguay.* | 30.05 | 763.3 | 66 | 18.9 | 65 | 18.3 | 100 | SSE | ..... | ..... | 3 | ..... | 5 | ..... | S | ..... | ..... | Smooth | ..... | Fair..... | |
| Franklin, Norfolk, Va.....* | 30.36 | 771.1 | 62 | 16.7 | 53 | 11.7 | 73 | WSW | 4.8 | 2.1 | ..... | ..... | 5 | ..... | Calm | 0 | 0 | ..... | ..... | Fair ..... | |
| Gettysburg, Genoa, Italy .....* | 29.65‡ | 753.1‡ | ..... | ..... | 48 | 8.9 | 100 | N | ..... | ..... | 4 | ..... | 10 | ..... | N | 0.9 | 23. | ..... | ..... | Overcast..... | |
| Hartford, Buenos Ayres, S. A.....* | 30.19 | 766.8 | 67 | 19.4 | 64 | 17.8 | 62 | NE | ..... | ..... | 3 | ..... | 10? | ..... | ..... | 0 | 0 | Smooth | ..... | Clear?..... | |
| Michigan, Erie, Pa.....† | 30.10‡ | 764.5‡ | ..... | ..... | 38 | 3.3 | 81 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Monocacy, Shanghai, China.....* | 30.15‡ | 765.8‡ | ..... | ..... | 50 | 10.0 | 79 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Monongahela N. 25° 16′, E. 150° 15′.....* | 30.07‡ | 763.8‡ | ..... | ..... | 79 | 26.1 | 78 | SE | ..... | ..... | 1–2 | ..... | 0 | ..... | ..... | 0 | 0 | Mod'ate | N;E | Blue sky..... | |
| New Hampshire, Port Royal, S. C.....* | 30.30 | 769.6 | 70 | 21.1 | 68 | 20.0 | 95 | NE | 9 | 4.0 | ..... | ..... | 2 | ..... | NE | 0 | 0 | ..... | ..... | Clear..... | |
| Onward, Callao, Peru.....†* | 30.09 | 764.3 | ..... | ..... | 66 | 18.9 | 89 | SSE | ..... | ..... | 2 | ..... | 5 | ..... | S | ..... | ..... | Long | W | Fair..... | |
| Palos, N. 38° 38′, E. 118° 50′.....* | 29.95 | 760.7 | 53 | 11.7 | 47 | 8.3 | 85 | SSE | ..... | ..... | 4 | ..... | 8 | ..... | S | ..... | ..... | Mod'ate | S;E | Cloudy..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 47 | 8.3 | 85 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Pensacola. S. 18° 43′, W. 72° 00′. .... | 30.03‡ | 762.8‡ | ..... | ..... | 70 | 21.1 | 75 | SSW | 3 | 1.3 | ..... | ..... | 10 | ..... | SW | 0 | 0 | Smooth | ..... | Overcast..... | |
| Plymouth, Portsmouth, N. H ..... | 30.07‡ | 763.8‡ | ..... | ..... | 44 | 6.7 | 68 | WNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Portsmouth, Hampton Roads, Va..... | 30.24‡ | 768.1‡ | ..... | ..... | 54 | 12.2 | 67 | W | ..... | ..... | 3 | ..... | 2 | ..... | S;W | 0 | 0 | Slight | S;W | Clear..... | |
| Powhattan, Norfolk, Va..... | 30.18‡ | 766.6‡ | ..... | ..... | 52 | 11.1 | 66 | NNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Quinnebaug, Algiers, Algeria..... | 29.84‡ | 757.9‡ | ..... | ..... | 62 | 16.7 | 77 | W | ..... | ..... | 5 | ..... | 10 | ..... | W | ..... | ..... | ..... | ..... | Raining..... | |
| Ranger. Takoro, Formosa I. ....* | 29.85‡ | 758.9‡ | ..... | ..... | 77 | 25.0 | 82 | S | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Richmond. N. 5° 54′ 06″, E. 87° 24′ 05″ | 29.86‡ | 758.4‡ | ..... | ..... | 85 | 29.4 | 83 | W | ..... | ..... | 3 | ..... | 8 | ..... | W | 1.7 | 43. | Long | W | Cloudy..... | |
| Rio Bravo, Brownsville, Texas..... | 29.81 | 757.2 | 73 | 22.8 | 73 | 22.8 | 85 | SE | ..... | ..... | 2 | ..... | 8 | ..... | S | ..... | ..... | ..... | ..... | Fair..... | |
| Santee, Annapolis, Md.. ..... | 30.21‡ | 767.3‡ | ..... | ..... | 50 | 10.0 | 52 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Saratoga, Horta Bay, Fayal, Azores. | 30.20‡ | 767.1‡ | ..... | ..... | 65 | 18.3 | 84 | W | ..... | ..... | 4–6 | ..... | 10 | ..... | Calm | Slight | Slight | Smooth | ..... | Overcast..... | |
| St. Louis, League Island, Pa ..... | 30.13 | 765.3 | 57 | 13.9 | 47 | 8.3 | 77 | SW | 1 | 0.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Trenton Villafranca, France...* | 29.54‡ | 750.3‡ | ..... | ..... | 55 | 12.8 | 93 | SE | ..... | ..... | 1–2 | ..... | 10 | ..... | SE | 0.08 | 2.0 | Mod'ate | S | Rainy..... | |
| Tuscarora. N. 15° 55′, W. 97° 32′ ...* | 29.92‡ | 760.0‡ | ..... | ..... | 77 | 25.0 | 77 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Vandalia N. 31° 02′, W. 73° 35′... | 30.25‡ | 768.3‡ | ..... | ..... | 61 | 16.1 | 66 | NE | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Long | NE | Clear..... | |
| Wabash, Boston, Mass..... | 30.17‡ | 766.3‡ | ..... | ..... | 44 | 6.7 | 76 | NW | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | Hazy..... | |
| Wyoming, N. 35° 15′ E. 27° 58′. ...* | 30.11‡ | 764.8‡ | ..... | ..... | 67 | 19.4 | 89 | W | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Mod'ate | W | Clear ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'r 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | |
| §S.S. City of Tokio Capt. Maury N. 34° 28′, E. 157° 24′ | | 30.08‡ | 764.0‡ | 64 | 17.8 | | SSW | | | 6 | | 10 | | | | Heavy | NE | Rainy | L. B. Walls. |
| S. S. Colima, Mazatlan, Mexico† | | 29.95‡ | 760.7‡ | 74 | 23.3 | | NNE | | | 3 | | 8 | | S | | | Con-fused | Misty | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota, Capt. H. G. Morse | | | | | | | | | | | | | | | | | | | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, Sydney, N. S. W | | 30.20‡ | 767.1‡ | | | | S | | | 1 | | 0 | | | | | | Fine | R. C. Ghest, 1st Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office. §The date of the S. S. City of Tokio is uncertain, and may be in error one day.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer. N. 36° 57′, W. 130° 04′ | | 30.47‡ | 773.9‡ | 57 | 13.9 | 81 | WSW | | | 6 | | ks | | | 0 | Mod'ate | WSW | D. clouds | D. A. Joyce. |
| S. S. Gaelic, N. 44° 34′, W. 155° 10′ | * | 29.88‡ | 758.9‡ | 41 | 5.0 | | W | | | 6 | | k | | E | Blank | High | W | Squally | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the S. S. Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the co-operation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 40° 53′, W. 61° 31′ | | 30.09‡ | 764.3‡ | | | | WNW | | | 3 | | 5 | | WNW | | Long | NW | Cloudy | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

| NAMES OF VESSELS. | True course toward. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | L'w'r | Upper. | Lower. | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | Character. | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 50° 19′, W. 26° 59′ | | 29.65‡ | 753.1‡ | 51 | 10.6 | | SSE | | | 5 | | 7 | | SW | 0 | Mod'ate | | Cloudy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
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| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
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| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | J. Powell, 4th Officer. |
| S. S. Peruvian | | | | | | | | | | | | | | | | | | | |
| **MARINE SERIES. (Miscellaneous.)** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller, Owls Head, Me., N. 44° 06′, W. 69° 03′ | | 30.21‡ | 767.3‡ | 44 | 6.7 | ?? | NNW | 6 | 2.7 | | | 0 | | | 0 | Smooth | | Clear | Capt. James Jorgensen. |
| Brigantine "George of Halifax" | | | | | | | | | | | | | | | | | | | Willard N. Pratt. |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud-direction as toward instead of from; sea-swell in general terms, as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Anéroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

Note.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively by the letters c, k, s, n, d, f, p, hz., fg. and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$.) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 22, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Morocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 30.01 | 762.2 | 68.9 | 20.5 | 83 | WNW | | | 1 | | 2 | | | 0.055 | 1.4 | Fair | Kesxuche. |
| Algiers | | | 29.86 | 758.5 | 63.3 | 17.4 | 63 | NNW | | | 2 | | 0 | | | Inap. | Inap. | Clear | Touriliere. |
| La Calle | | | 29.84 | 757.9 | 64.9 | 18.3 | 83 | NNW | | | 5 | | 5 | | | 0.063 | 1.6 | Cloudy | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 29.89 | 759.2 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 29.99 | 761.8 | 62.6 | 17.0 | 56 | NW | | | 4 | | 10 | | | 0.098 | 2.5 | Covered | Herbin. |
| Tebessa | | | 29.90 | 759.4 | 59.5 | 15.3 | 53 | W | | | 7 | | 5 | | | 0.012 | 0.3 | Cloudy | Watrin. |
| Geriville | | | 30.02 | 762.4 | 68.5 | 20.3 | 69 | N | | | 5 | | 10 | | | 0 | 0 | Covered | Brugniaux. |
| Laghouat | | | 29.97 | 761.1 | 68.7 | 20.4 | 46 | NW | | | 6 | | 5 | | | 0 | 0 | Cloudy | Bertrand. |
| Biskra | | | 29.87 | 758.6 | 75.6 | 24.2 | 15 | NW | | | 1 | | 2 | | | 0 | 0 | Fair | Chauvaux. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.06 | 738.2 | 29.60 | 751.7 | 62.6 | 17.0 | 72 | SE | | | 3 | | 10 | | | 0.413 | 10.5 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 28.74 | 729.9 | 29.86 | 758.5 | 70.5 | 21.4 | 39 | S | | | 3 | | 10 | | | 0 | 0 | | Dr. Wierzbicki. |
| Eperies | 28.72 | 729.4 | 29.56 | 750.9 | 66.6 | 19.2 | 58 | S | | | 3 | | 10ks | | N | 0 | 0 | | Julius Mikolik. |
| Gratz | 28.30 | 718.7 | 29.50 | 749.3 | 64.6 | 18.1 | 37 | W | | | 2 | | 8 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.34 | 719.8 | 29.69 | 754.0 | 77.5 | 25.3 | 42 | SE | | | 3 | | 8 | | | 0 | 0 | | Prof. A. Gottschling. |
| Kremsmünster | 28.21 | 716.4 | 29.52 | 749.9 | 53.4 | 11.9 | 75 | NE | | | 2 | | 4 | | | 0 | 0 | | Prof. C. Wagner. |
| Lemberg | 28.61 | 726.8 | 29.56 | 750.8 | 65.7 | 18.7 | 54 | S | | | 2 | | 9 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 29.59 | 751.5 | 29.70 | 754.3 | 69.7 | 15.4 | 65 | S | | | 1 | | 8 | | | 0.291 | 7.4 | | I.R.Hydrographic Office |
| Szathmar | 29.23 | 742.5 | 29.68 | 753.8 | 73 8 | 23.2 | 55 | SE | | | 2 | | 10 | | | 0 | 0 | | Julius Csics, S. J. |
| Szegedin | 29.36 | 745.6 | 29.62 | 752.4 | 70.2 | 21.2 | 46 | S | | | 3 | | 8 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 29.56 | 750 7 | 29.66 | 753.3 | 59.0 | 15.0 | 74 | NW | | | 1 | | 9 | | | 0 | 0 | | P. Busin. |
| Vienna | 28.80 | 731.6 | 29.50 | 749.2 | 62.1 | 16.7 | 50 | W | | | 4 | | 5 | | | 0 | 0 | | I. R. Central Met. Obs'y |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.35 | 745.4 | 29.55 | 750.6 | 42.1 | 5.6 | 90 | WNW | | | 2 | | 10 | | WNW | 0.004 | 0.10 | Raining | Royal Observatory. |
| Furnes | 29.60 | 751.7 | 29.62 | 752.3 | 45.5 | 7.5 | 74 | SW | | | 2 | | 7 | | | 0.020 | 0.5 | | M. E. de Cae. |
| Maeseyck | 29.39 | 746.5 | 29.52 | 749.7 | 47.7 | 8.7 | 90 | WNW | | | 4 | | 10 | | | 0.012 | 0.3 | | M. Pierrot. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

**Entered at the Post Office at Washington, D. C., as Second-Class Matter.**

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London. Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.55 | 750.6 | 29.65 | 753.1 | 40.4 | 4.7 | ..... | E | 19 | 8.5 | ..... | ..... | 9 | ..... | ..... | 0.035 | 0.89 | Squally | W. Boswell. |
| Ardrossan | 29.54 | 750.3 | 29.55 | 750.6 | 45 | 7.2 | ..... | E | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.52 | 749.8 | 48.2 | 9.0 | ..... | ESE | 14 | 6.3 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.51 | 749.5 | 50.7 | 10.4 | ..... | ESE | 12 | 5.4 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.52 | 749.8 | 50.7 | 10.4 | ..... | S | 6 | 2.7 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | Blue sky | Thomas Mackereth. |
| Bradford, Yorkshire | 29.15 | 740.4 | 29.55 | 750.6 | 44.6 | 6.9 | ..... | E | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.97 | 761.2 | 30.00 | 762.0 | 84 | 28.9 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.58 | 751.3 | 49.0 | 9.4 | ..... | NW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | H. Todd. [O. |
| Cardington | ..... | ..... | 29.55 | 750.6 | 51.0 | 10.6 | ..... | S | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.47 | 748.5 | 29.60 | 751.8 | 48.3 | 9.1 | ..... | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.04 | 712.2 | 29.50 | 749.3 | 47.0 | 8.3 | ..... | NE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | Showery | Alexander Watt. |
| Donaghadee | 29.52 | 749.8 | 29.56 | 750.8 | 48 | 8.9 | ..... | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | J. Mac Gowan. |
| Dover | 29.57 | 751.1 | 29.60 | 751.8 | 45 | 7.2 | ..... | SSW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | ¾ clouded | J. Costello. |
| Falmouth, Observatory | 29.30 | 744.2 | 29.53 | 750.0 | 51.7 | 10.9 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.82 | 706.6 | 30.13 | 765.3 | 70.6 | 21.4 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.66 | 753.4 | 29.89 | 759.2 | 88 | 31.1 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's college | ..... | ..... | ..... | ..... | 50 | 10.0 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 29.99 | 761.7 | 30.04 | 763.0 | 66.1 | 18.9 | ..... | W | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.36 | 745.7 | 29.77 | 756.1 | 42.0 | 5.6 | ..... | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | D. G. Maclean. [O. |
| Great Yarmouth | 29.57 | 751.1 | 29.57 | 751.1 | 45 | 7.2 | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.42 | 747.2 | 29.59 | 751.6 | 46.8 | 8.2 | ..... | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Almosto'cast | The staff, for G.B. Airy. |
| Guernsey | 29.33 | 745.0 | 29.55 | 750.6 | 52.5 | 11.4 | ..... | SW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | Dr. S.E.Hoskins, F.R.S. |
| Helston | 29.61 | 752.1 | 29.63 | 752.6 | 57 | 13.9 | ..... | SW | ..... | ..... | 4 | ..... | 3c | ..... | ..... | 0.13 | 3.3 | Fine | M. P. Moyle. |
| Holyhead | 29.46 | 748.3 | 29.51 | 749.5 | 49 | 9.4 | ..... | SSW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | John Tilston. |
| Jersey | 29.32 | 744.7 | 29.62 | 752.3 | 50.5 | 10.3 | ..... | SSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast | J. Fisher. |
| Kew, Observatory | 29.55 | 750.6 | 29.58 | 751.3 | 48.8 | 9.3 | ..... | SW | 5 | 2.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty | The Meteorological Of. |
| Leicester, Museum | 29.30 | 744.2 | 29.55 | 750.6 | 49.0 | 9.4 | ..... | NW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Wm, J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.67 | 753.6 | 29.74 | 755.4 | 70 | 21.1 | ..... | SE | ..... | ..... | 2 | ..... | 4k | ..... | ..... | ..... | ..... | D. clouds | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.54 | 750.3 | 29.63 | 752.6 | 45 | 7.2 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.23 | 767.8 | 75.0 | 23.9 | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.38 | 746.2 | 29.56 | 750.8 | 53.4 | 11.9 | ..... | SSE | ..... | ..... | 2 | ..... | 4k | ..... | SE | 0 | 0 | D. clouds | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.03 | 737.3 | 29.55 | 750.6 | 49.8 | 9.9 | ..... | S | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.56 | 750.8 | 47 | 8.3 | ..... | ESE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | H. E. Bellamy. |
| Plymouth | 29.44 | 747.8 | 29.52 | 749.8 | 53.6 | 12.0 | ..... | S | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | John Merrifield. |
| Roche's Point | 29.38 | 746.2 | 29.45 | 748.0 | 52 | 11.1 | ..... | SW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded | Wm. Kennedy. |
| Saint Ann's Head | 29.32 | 744.7 | 29.48 | 748.8 | 46 | 7.8 | ..... | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 43 | 6.1 | ..... | E | 25 | 11.2 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.88 | 758.9 | 29.94 | 760.5 | 69.0 | 20.6 | ..... | S | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | W. H. Lyne. |
| Sheffield | 29.30 | 744.2 | 29.58 | 751.3 | 46.9 | 8.3 | ..... | E | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds | W. F. Cooper. |
| Silloth Rectory | 29.52 | 749.8 | 29.55 | 750.6 | 46.8 | 8.2 | 68 | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | D. clouds | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.14 | 740.1 | 29.54 | 750.3 | 47.9 | 8.8 | ..... | E | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.32 | 744.7 | 29.54 | 750.3 | 48.9 | 9.4 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Showery | C. H. Griffith, F. M. S. |
| Truro, Royal Institution | 29.52 | 749.8 | 29.55 | 750.6 | 58 | 14.4 | ..... | S | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | W. Newcombe. |
| Valencia, Observatory | 29.39 | 746.5 | 29.42 | 747.2 | 53.9 | 12.2 | ..... | SE | 11 | 4.9 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.92 | 760.0 | 29.96 | 761.0 | 84.4 | 29.1 | 28 | SSE | 11 | 4.9 | ..... | 0 | 1 | ..... | ..... | 0 | 0 | Fine | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.23 | 767.8 | 73 | 22.8 | 54 | NW | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.62 | 752.3 | 42.0 | 5.6 | ..... | E | ..... | ..... | 3 | ..... | 10k | ..... | ..... | 0 | 0 | Overcast | Andrew Gibb. |
| Mauritius, Observatory | 29.84 | 757.9 | 30.03 | 762.7 | 77.4 | 25.2 | 73 | E | 15.0 | 6.7 | ..... | ..... | 4 | ..... | E | 0.13 | 3.3 | Fine | C. Meldrum. |
| Melbourne, Observatory | 30.23 | 767.8 | 30.33 | 770.4 | 58.2 | 14.6 | 70 | N | 3 | 1.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Very fine | R. L. J. Ellery. |
| MonachLt-house, (Hebrides) | ..... | ..... | 29.59 | 751.6 | 45 | 7.2 | ..... | E | ..... | ..... | 4 | 10 | ..... | E | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.77 | 756.1 | 40 | 4.4 | ..... | NE | ..... | ..... | 6 | 10 | 10 | NE | ..... | ..... | ..... | ..... | Robert Burnet. |

Note—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

| British Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 42′, E. 29° 25′ | ..... | ..... | 29.95‡ | 760.7‡ | 64 | 17.8 | ..... | NW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle-Isle | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have generally been carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.28 | 667.5 | 30.00 | 762.0 | 67.1 | 19.5 | 86 | SE | ..... | ..... | 1 | 8c;s | ..... | ..... | NE | 0 | 0 | ..... | Federico Maison. |

NOTE.—For St. Jose the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches for an altitude of 1,145 meters, or 3,756.6 feet; the distinction between the upper and lower clouds is not always made; the rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.47 | 748.6 | 29.52 | 749.8 | 43.2 | 6.2 | 65 | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 29.47 | 748.4 | 29.48 | 748.9 | 48.4 | 9.1 | 79 | ENE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.73 | 755.1 | 29.77 | 756.2 | 33.8 | 1.0 | 87 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 29.86 | 758.4 | 29.89 | 759.3 | 38.5 | 3.6 | 62 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.35 | 745.4 | 29.52 | 749.7 | 44.6 | 7.0 | 94 | NE | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.12 | 739.7 | 29.67 | 753.7 | 51.8 | 11 | 75 | SW | ..... | ..... | 1 | ..... | 5 | SW | SW | 0.252 | 6.4 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 29.61 | 752.2 | 29.72 | 755.0 | 51.8 | 11.0 | 75 | WNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.551 | 14.0 | Covered | Bonvallet, Director |
| Avignon, Normal School | 29.67 | 753.5 | 29.74 | 755.5 | 61.9 | 16.6 | 49 | N | ..... | ..... | 1 | ..... | 2 | ..... | WNW | 0 | 0 | Partly cl'dy | Giraud, Director. |
| Bar-sur-Seine | 29.12 | 739.5 | 29.68 | 753.8 | 44.8 | 7.1 | 82 | WNW | ..... | ..... | 1 | ..... | 10 | ..... | NW | 0.236 | 6.0 | Covered | C. Saillard, Director. |
| Beauvais, Normal School | 29.37 | 746.1 | 29.64 | 752.9 | 48.9 | 9.4 | 57 | W | ..... | ..... | ..... | ..... | 8 | ..... | WNW | 0.463 | 11.75 | Very cloudy | Frere Eugene Marie, Dr |
| Besançon, Normal School | 28.82 | 731.9 | 29.72 | 755.0 | 42.4 | 5.8 | 83 | S | ..... | ..... | 4 | ..... | 10 | ..... | SE | 0.146 | 3.7 | Covered | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.89 | 733.9 | 29.80 | 756.8 | 57.4 | 14.1 | 78 | S | ..... | ..... | 1 | ..... | 10n | W | S | 0.138 | 3.5 | Covered | Marlot, Director. |
| Bourges, Normal School | 29.15 | 740.4 | 29.70 | 754.4 | 49.3 | 9.6 | 81 | W | ..... | ..... | 1 | ..... | 10kn | NW | W | 0.28 | 7. | Raining | A. Waquet, Directo |
| Brest, Naval Observatory | 29.31 | 744.4 | 29.55 | 750.6 | 56.8 | 13.8 | 75 | SW | ..... | ..... | 2 | ..... | 9 | ..... | SW | 0.039 | 1.00 | Raining | De Rermaree, Director |
| Carcassonne, Normal School | 29.41 | 746.9 | 29.82 | 757.3 | 60.7 | 16 | 49 | W | ..... | ..... | 1 | ..... | 2 | ..... | NW | 0.213 | 5.4 | Slightly cld'y | September, Director. |
| Caen, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Lair, Director. |
| Chartres, Normal School | 29.01 | 736.9 | 29.57 | 751.1 | 54.3 | 12.4 | 95 | NW | ..... | ..... | 2 | ..... | 9 | ..... | WNW | 0.47 | 12. | ..... | Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.29 | 744.0 | 29.61 | 752.2 | 43.5 | 6.4 | 85 | W | ..... | ..... | 1 | ..... | 10 | W | W | 0 | 0 | Covered | Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.34 | 719.9 | 29.69 | 754.1 | 54.3 | 12.4 | 43 | W | ..... | ..... | 2 | ..... | 8 | ..... | W | 0 | 0 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.75 | 730.3 | 29.61 | 752.2 | 45.5 | 7.5 | 83 | W | ..... | ..... | 1 | ..... | 5kn | ..... | W | 0.173 | 4.4 | Cloudy | Dr. Coulet, Director |
| Commune de Gréasque* | 28.63 | 727.1 | 29.77 | 756.1 | 54.1 | 12.3 | 45 | NW | ..... | ..... | 2 | ..... | 8 | ..... | NW | 0 | 0 | ¾ covered | L. Kina, Director. |
| Grenoble, Normal School | 29.00 | 736.5 | 29.76 | 756.0 | 50.7 | 10.4 | 58 | NW | ..... | ..... | 6 | ..... | 8kn | N | ..... | 0.492 | 12.50 | Very cloudy | Ablard, Director |
| La Roche-sur-Yon, N. School | 29.46 | 748.3 | 29.67 | 753.7 | 52.9 | 11.6 | 80 | SSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.094 | 2.4 | Covered | Mouillot, Director. |
| Le Mans, Normal School | 29.35 | 745.4 | 29.65 | 753.1 | 53.1 | 11.7 | 59 | SW | ..... | ..... | 3 | ..... | 5 | ..... | SW | 0.776 | 19.7 | Cloudy | Poirrier, Director |
| Lons-Le-Saulnier, N. School | 28.82 | 731.9 | 29.74 | 755.3 | 41.9 | 5.5 | 81 | SSW | ..... | ..... | 2 | ..... | 8 | ..... | SSW | 0.630 | 16. | Raining | A. Baudry, Director. |
| Lorient, Naval Observatory | 29.53 | 750.1 | 29.63 | 752.6 | 56.1 | 13.4 | 73 | SSW | ..... | ..... | 3 | ..... | ..... | ..... | SW | 0.012 | 0.3 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Galzin, Director. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mirecourt, Normal School | 28.58 | 725.9 | 29.64 | 752.9 | 44.2 | 6.8 | 88 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | NE | 0.04 | 1. | Foggy | Barbier, Director. |
| Nismes, Normal School | 29.53 | 750.0 | 29.72 | 755.0 | 64.8 | 18.2 | 59 | NW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0 | 0 | Cloudy | Boyer, Director. |
| Privas, Normal School | 28.65 | 727.8 | 29.71 | 754.6 | 54.5 | 12.5 | 69 | N | ..... | ..... | 1 | ..... | 10 | S | N | 0.04 | 1. | Rainy | Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.83 | 630.6 | ..... | ..... | 29.8 | — 1.2 | 100 | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.102 | 2.6 | Covered | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.69 | 754.1 | 29.72 | 754.9 | 56.8 | 13.8 | 68 | SW | ..... | ..... | 1 | ..... | 8 | W | W | 0.04 | 1. | ¾ covered | Lt. E. Decante, Director. |
| Rouen, Normal School | 29.54 | 750.2 | 29.62 | 752.4 | 55.6 | 13.1 | 60 | WSW | ..... | ..... | 1 | ..... | 2 | ..... | W | 0.465 | 11.8 | Slightly cl'dy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.54 | 750.4 | 29.58 | 751.2 | 58.6 | 14.8 | 52 | SW | ..... | ..... | 2 | ..... | 5 | SW | SW | 0.059 | 1.50 | Cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.49 | 749.1 | 29.66 | 753.3 | 51.3 | 10.7 | 58 | WSW | ..... | ..... | 1 | ..... | ..... | NW | NW | 0.043 | 1.1 | Clearing | E. Renou, Director. |
| Tarbes, Normal School | 28.60 | 726.5 | 29.69 | 754.0 | 48.2 | 9 | 73 | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | T. Huguet, Director. |
| Toulouse, Observatory | 29.10 | 739.0 | 29.81 | 757.2 | 55.0 | 12.8 | 68 | NW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0.028 | 0.7 | ..... | Mercadier Julier. |
| Versailles Observatory | 29.16 | 740.6 | 29.65 | 753.1 | 50.0 | 10.0 | 50 | NW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.049 | 1.24 | ..... | Dr. A. Bérigny, Director |
| Villefranche-sur-Saone, N.S. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.89 | 759.2 | 29.92 | 759.9 | 81.3 | 27.4 | .. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marcl ésl. |
| Lyons Obs'y, (Park Station) | 29.14 | 740.1 | 29.75 | 755.7 | 49.6 | 9.8 | 69 | N | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.051 | 1.3 | Covered | Mr. Jays. |
| Mont-Louis | 24.59 | 624.5 | 29.90 | 759.5 | 45.0 | 7.2 | 45 | SW | 28.0 | 12.5 | ..... | ..... | 6 | ..... | W | 0.087 | 2.2 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.63 | 752.6 | 60.8 | 16.0 | 62 | NNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 1.024 | 26.0 | Fair | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.37 | 746.1 | ..... | ..... | 48.6 | 9.2 | 60 | W | ..... | ..... | 2 | ..... | 5 | ..... | WNW | 0.094 | 2.4 | ..... | Marié Davy, Director. |
| Perpignan | 29.67 | 753.6 | 29.78 | 756.3 | 58.6 | 14.8 | 51 | SE | 15.0 | 6.7 | ..... | ..... | 6 | ..... | SW | 0.039 | 1.0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.20 | 564.0 | ..... | ..... | 35.6 | 2.0 | ..... | N | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0.044 | 1.13 | Snowy | Gen'l de Nansouty. |
| Tours | 29.47 | 748.5 | 29.67 | 753.5 | 55.0 | 12.8 | 55 | WSW | ..... | ..... | 2 | ..... | 7 | ..... | NW | 0.205 | 5.2 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.03 | 762.7 | 30.05 | 763.3 | 57.4 | 14.1 | 88 | ESE | 17.0 | 7.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand, Nice and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a.m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p.m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135.0 millimeters, or 5.315 inches has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–1? | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.63 | 727.2 | 29.46 | 748.2 | 55.4 | 13.0 | 67 | W | | | 4 | | 7 | W | | 0.157 | 4.0 | Raining | Prof. Dr. Hoh. |
| Berlin | 29.18 | 741.1 | 29.35 | 745.4 | 54.1 | 12.3 | 88 | SE | | | 1 | | 10 | | | 0.091 | 2.3 | Light rain | Prof. Arndt. |
| Breslau | 28.89 | 733.9 | 29.41 | 747.1 | 64.0 | 17.8 | 52 | SSW | | | 3 | | 10 | SSW | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.12 | 739.7 | 29.54 | 750.3 | 54.0 | 12.2 | 59 | SW | | | 6 | | 10 | SW | | 0.055 | 1.4 | | Albert Senz. |
| Cassel | 28.85 | 732.9 | 29.45 | 748.0 | 51.4 | 10.8 | 81 | WSW | | | 2 | | 10 | W | | 0.099 | 2.53 | Raining | Dr. H. Möhl. |
| Crefeld | 29.31 | 744.4 | 29.47 | 748.4 | 49.1 | 9.5 | 77 | SW | | | 3 | | 10 | | | 0.67 | 17. | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.17 | 740.6 | 29.53 | 750.0 | 49.1 | 9.5 | | WNW | | | 1 | | 10 | | | 0.185 | 4.7 | | Physical Society. |
| Freienwalde on the Oder | 29.68 | 753.9 | 29.72 | 754.9 | 54.3 | 12.4 | 95 | NE | | | 1 | | 10s | SE | | 0.047 | 1.2 | | Assmann., M. D. |
| Friedrichshafen | 28.20 | 716.2 | 29.63 | 752.6 | 47.8 | 8.8 | 74 | SW | | | 5 | | 10 | SW | | 0.008 | 0.2 | Raining | M. Wilhelm. |
| Hamburg | 29.33 | 744.9 | 29.40 | 746.7 | 42.4 | 5.9 | 93 | NE | | | 4 | | 10n | | | 0.492 | 12.5 | Rain & fog | Captain F. Hegeman. |
| Kiel | 29.42 | 747.3 | 29.44 | 747.8 | 42.1 | 5.6 | 88 | NE | | | 3 | | 10 | | | 0.140 | 3.55 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.45 | 748.0 | 29.53 | 750.0 | 61.9 | 16.5 | 61 | E | | | 5 | | 2 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 29.35 | 745.5 | 54.5 | 12.5 | | NE | | | 2 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 28.97 | 735.7 | 29.39 | 746.4 | 50.0 | 10.0 | 92 | SW | | | 4 | | 10 | SW | | 0.012 | 0.3 | Raining | Prof. Brahns, Privy Councilor. |
| Memel, Naval School | 29.55 | 750.5 | 29.60 | 751.7 | 56.8 | 13.8 | 53 | E | | | 4 | | 5cs | | | | | | Skalweit. |
| Neufahrwasser | 29.48 | 748.7 | 29.49 | 749.1 | 47.3 | 8.5 | 79 | NNE | | | 2 | | 10 | ENE | | 0.224 | 5.7 | | A. Lothes. |
| Posen | 29.10 | 739.1 | 29.37 | 746.1 | 67.1 | 19.5 | 56 | E | | | 2 | | 9 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.05 | 737.8 | 29.60 | 751.8 | 49.8 | 9.9 | 65 | SSW | | | 4 | | 10 | SW | | 0.043 | 1.09 | | Imp. University Observatory. |
| Stuttgart | 28.60 | 726.4 | 29.52 | 749.9 | 54.5 | 12.5 | 51 | W | | | 3 | | 9 | W | | 0.008 | 0.2 | | Prof. Schoder. |
| Treves (Trier) | 29.00 | 736.5 | 29.51 | 749.6 | 50.6 | 10.3 | 74 | W | | | 3 | | 10 | | | 0.007 | 0.18 | | Prof. Flesch. |
| Weissenburg (Bavaria) | 28.04 | 712.1 | 29.53 | 750.1 | 51.8 | 11.0 | 66 | WNW | 7 | 3 | | | 8ck | WNW | W | 0.197 | 5.0 | | Dr. Van Bebber |
| Wustrow, Naval School | 29.40 | 746.8 | 29.43 | 747.4 | 42.4 | 5.8 | 87 | ENE | | | 3 | | 10s | SW | | 0.236 | 6.0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.56 | 750.9 | 29.94 | 760.5 | 76.6 | 24.8 | | SW | | | 1.5 | | | | | | | ½ Clear | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.77 | 756.2 | 29.82 | 757.5 | 87.0 | 30.6 | 32 | NW | | | | | | | | 0 | 0 | Blue sky | |
| Deesa | | | | | 93.8 | 34.3 | 13 | WSW | 10.7 | 4.8 | | | 5 | W | | 0 | 0 | D. clouds | |
| Bombay | 29.84 | 757.8 | 29.87 | 758.8 | 81.9 | 27.7 | 75 | NW | 15 | 6.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.87 | 707.8 | 29.84 | 757.8 | 87.8 | 31.0 | 30 | WNW | | | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 28.86 | 732.9 | 29.68 | 751.3 | 90.1 | 32.3 | 6 | W | 3.6 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.32 | 693.8 | 29.80 | 757.0 | 86.2 | 30.1 | 59 | W | 23 | 10.3 | | | 0 | | | 0 | 0 | D clouds | |
| Roorkee | 28.83 | 732.2 | 29.71 | 754.6 | 87.2 | 30.7 | 29 | SE | 3.0 | 1.3 | | | 1 | | | 0 | 0 | D. clouds | |
| Agra | 29.21 | 741.8 | 29.76 | 755.8 | 94.6 | 34.8 | 24 | N | | | | | | | | 0 | 0 | | |
| Nagpur | 28.70 | 728.9 | 29.70 | 754.3 | 101.7 | 38.7 | 19 | W | 3.7 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.39 | 746.4 | 29.76 | 755.8 | 90.2 | 32.3 | 41 | N | 4.5 | 2.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.40 | 746.7 | 29.70 | 754.3 | 98.0 | 36.7 | 21 | N | 2.7 | 1.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.49 | 749.1 | 29.67 | 753.5 | 100.9 | 38.3 | 20 | W | 0.4 | 0.2 | | | 5 | W | W | 0 | 0 | D. clouds | |
| Hazaribagh | 27.67 | 702.9 | 29.61 | 752.1 | 95.8 | 35.4 | 38 | NW | 4.9 | 2.2 | | | 4 | | W | 0 | 0 | | |
| Cuttack | 29.65 | 753.1 | 29.73 | 755.1 | 88.9 | 31.6 | 62 | SSE | 10 | 4.5 | | | 3 | | | 0 | 0 | | |
| Calcutta (Alipore) | 29.70 | 754.4 | 29.72 | 755.0 | 86.3 | 30.2 | 74 | SSW | 7.0 | 3.1 | | | 8 | W | | 0 | 0 | D. clouds | |
| Goalpara | 29.32 | 744.6 | 29.70 | 754.5 | 79.8 | 26.6 | 78 | NE | 7.3 | 3.3 | | | 9 | W | | 0.77 | 19.6 | D. clouds | |
| Chittagong | 29.73 | 755.0 | 29.82 | 757.3 | 84.8 | 29.3 | 76 | S | 7.7 | 3.4 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.43 | 747.6 | 29.77 | 756.1 | 76.3 | 24.6 | 90 | S | 2.1 | 0.9 | | | 10 | SW | SW | 0.10 | 2.5 | Overcast | |
| Jubbulpore | 28.36 | 720.4 | 29.68 | 753.8 | 98.4 | 36.9 | 16 | NW | 5.5 | 2.5 | | | 0 | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,552 ft., or 473.5 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upper. 0—10. | Clouds. Amount. Lower. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.29 | 744.0 | 29.70 | 754.4 | 54.3 | 12.4 | 66 | SE | 0.7 | 0.3 | | | 10 | | | 2.252 | 57.2 | | Prof. Giovanni Clodig. |
| Milan | 29.13 | 739.9 | 29.65 | 753.0 | 54.9 | 12.7 | 70 | S | | | 2 | | 9 | SSE | | 0.953 | 24.2 | | Prof. Schiaparelli. |
| Padua | 29.54 | 750.4 | 29.65 | 753.2 | 59.4 | 15.2 | 60 | E | 3.1 | 1.4 | | | 7 | SW | | 0.336 | 8.5 | | Prof. Dott. Lorenzoni. |
| Moncalieri | 28.73 | 729.7 | 29.63 | 752.5 | 53.2 | 11.8 | 63 | SW | 0.7 | 0.3 | | | 6 | SSE | | 0 | 0 | | Prof. P. F. Denza. |
| Genoa | 29.46 | 748.3 | 29.65 | 753.1 | 58.6 | 14.8 | 76 | S | 4.9 | 2.2 | | | 2 | S | | 0.417 | 10.6 | | Prof. G. M. Garibaldi. |
| Mondovi | 27.74 | 704.7 | 29.64 | 752.9 | 49.5 | 9.7 | 61 | W | | | 2 | | 9 | | | 0.480 | 12.2 | | Prof. D. C. Bruno. |
| Pesaro | 29.66 | 753.3 | 29.71 | 754.5 | 56.3 | 13.5 | 82 | NW | 9.4 | 4.2 | | | 10 | | | 0 | 0 | | Prof. Luigi Guidi. |
| Florence | 29.43 | 747.5 | 29.69 | 754.0 | 57.7 | 14.3 | 79 | SW | | | 2 | | 10 | S | | 0.571 | 14.5 | | Cav. F. Meucci. |
| Leghorn | 29.59 | 751.5 | 29.67 | 753.6 | 59.5 | 15.3 | 70 | S | | | 6 | | 4 | S | | 0.232 | 5.9 | | Prof. P. Monte. |
| Rome | 29.59 | 751.6 | 29.76 | 756.0 | 61.9 | 16.6 | 65 | S | 13.7 | 6.1 | | | 10 | | | 0.059 | 1.5 | | Prof. P. S. Ferrari. |
| Lecce | 29.58 | 751.2 | 29.83 | 757.6 | 67.3 | 19.6 | 58 | SW | 28.0 | 12.5 | | | 9 | SW | | 0 | 0 | | Prof. C. De Giorgi. |
| Cosenza | 28.87 | 733.2 | 29.74 | 755.4 | 72.0 | 22.2 | 81 | SE | 4.9 | 2.2 | | | 10 | | | 0.031 | 0.8 | | Prof. D. Conti. |
| Cagliari | 29.56 | 750.8 | 29.75 | 755.7 | 62.8 | 17.1 | 43 | NW | | | 4 | | 3 | | | 0.016 | 0.4 | | Prof. A. Pacinotti. |
| Palermo | 29.58 | 751.2 | 29.83 | 757.6 | 59.7 | 15.4 | 47 | WNW | 13.7 | 6.1 | | | 10 | | | 0 | 0 | | Prof. G. Cacciatore. |
| Syracuse | 29.66 | 753.3 | 29.73 | 755.2 | 68.9 | 20.5 | 62 | SE | 8.7 | 3.9 | | | 9 | SW | | 0 | 0 | | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.28 | 743.8 | 29.84 | 757.9 | 57.9 | 14.4 | 58 | W | 5.6 | 2.5 | | | 10 | | | 0.126 | 3.2 | | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.27 | 768.8 | 30.28 | 769.1 | 51.8 | 11.0 | 85 | NNE | 3.2 | 1.4 | | | 0 | | | 0 | 0 | Clear | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 30.05 | 763.3 | 30.26 | 768.6 | 52.4 | 11.3 | 82 | ESE | 0.5 | 0.2 | | | 0 | | | 0 | 0 | Clear | S. Takehayashi. |
| Tokei, (Yeddo) Observatory | 30.20 | 767.1 | 30.27 | 768.8 | 52.7 | 11.5 | 83 | S | 4.9 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | 25.02 | 635.6 | 30.15 | 765.8 | 47.3 | 8.5 | 35 | Calm | | | 0 | 0 | 0 | | | 0 | 0 | | P. Ceballos. |
| Guadalajara | 24.38 | 619.3 | 30.00 | 762.2 | 61.0 | 16.1 | 66 | NW | | | 1 | 0 | 0 | | | 0 | 0 | Very clear | Prof. L. Perez. |
| Leon | 23.06 | 585.7 | 30.06 | 763.4 | 54.0 | 12.2 | 37 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | | | | | 54.5 | 12.5 | 38 | W | | | 1 | 0 | 0 | | | 0 | 0 | Very hazy | The Staff. |
| Pabellon, (Aguascallentes) | | | | | 78.6 | 23.1 | 84 | S | | | 3 | 0 | 0 | | | 0 | 0 | Hazy | M. V. de Leon, M. E. |
| Tlacotalpam | 29.81 | 757.2 | 29.82 | 757.5 | | | | | | | | | | | | | | | M. M. Chàzaro. |
| San Luis Potosi | | | | | | | | | | | | | | | | | | | G. Barroeta, M. D. |
| Vera-Cruz | | | | | | | | | | | | | | | | | | | Prof. J. Rossell. |
| Zacatecas | 22.47 | 570.6 | 30.07 | 763.7 | 56.8 | 13.8 | 32 | SW | | | 2 | 0 | 0 | | | 0 | 0 | Very clear | J. Castrillon. |
| Puebla, (Catholic Institute) | 23.37 | 593.5 | 30.13 | 765.3 | 50.9 | 10.5 | 64 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | | | | | | | | | | | | | | | | | | | M. V. de Leon, C. E. |
| Colima | 28.36 | 720.3 | 30.02 | 762.6 | 72.3 | 22.4 | 60 | Calm | | | 0 | | 1 | | | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | | | | | | | | | | | | | | | | | | | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 507.3 m., or 1,664.4 ft. The data are published as given, except the conversions, which have been revised; the instrumental correction —0.88 mm., has been applied at this office to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.58 | 751.4 | 29.58 | 751.4 | 48.9 | 6.6 | | NW | | | | | | | | 0.335 | 8.5 | | |
| Groningen | 29.39 | 746.4 | 29.44 | 747.8 | 47.7 | 8.7 | | SE | | | 1 | | | | | 0.260 | 6.6 | | |
| Helder | 29.48 | 748.9 | 29.48 | 748.9 | 40.8 | 4.9 | | NNW | | | 4 | | | | | 0 | 0 | | |
| Hellevoetsluis | 29.52 | 749.7 | 29.52 | 749.7 | 43.0 | 6.1 | 91 | NNW | | | 2 | | | | | | | | |
| Utrecht | 29.46 | 748.2 | 29.50 | 749.4 | 46.2 | 7.9 | 63 | NNW | | | 2 | | 10 | | | 0.016 | 0.4 | Dull | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.57 | 751.0 | 29.62 | 752.4 | 51.8 | 11.0 | 45 | S | 12.3 | 5.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönø | 29.59 | 751.5 | 29.63 | 752.5 | 32.7 | 0.4 | 75 | W | 18 | 8 | ..... | ..... | 8 | ..... | ..... | 0.098 | 2.5 | ..... | |
| Christiania | 29.52 | 749.9 | 29.67 | 753.6 | 48.9 | 9.4 | 42 | SSW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.04 | 737.6 | 29.08 | 738.7 | 30.7 | — 0.7 | 83 | SW | 18 | 8 | ..... | ..... | 9 | ..... | ..... | 0.142 | 3.6 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p.m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.94 | 760.6 | 30.14 | 765.5 | 63.0 | 17.2 | 88 | NW | 9.8 | 4.4 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.96 | 735.5 | 29.99 | 761.8 | 54.9 | 12.7 | 95 | SSW | 8.1 | 3.6 | ..... | ..... | 10 | SSW | ..... | 0.157 | 4.0 | Light rain.... | Dr. A.M. R. dos Santos. |
| Funchal, (Madeira) | 30.15 | 765.8 | 30.24 | 768.0 | 65.1 | 18.4 | 80 | S | 3.8 | 1.7 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.65 | 753.1 | 30.02 | 762.4 | 59.4 | 15.2 | 99 | WSW | 16.1 | 7.2 | ..... | ..... | 10 | ..... | ..... | 0.331 | 8.4 | Raining..... | The Staff. |
| Ponta Delgada, (Azores) | 30.13 | 765.2 | 30.20 | 767.0 | 66.2 | 19.0 | 84 | W | 9.8 | 4.4 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | A. G. da Silva Costa, Com'd.t. |
| D. Fernando | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| Duque da Terceira, San Jose de Bissao, Senegambia | 0 | ..... | Blue sky..... | C.C.da Fonseca Ferreira, Comd't. |
| India | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, S. 4° 30′, E. 10° 32′ | 1 | SW | D. clouds..... | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa, San Jose de Bissao, Senegambia | 1 | ..... | Blue sky..... | A. Ferreira, 2d Lt |
| Sá da Bandeira | ..... | ..... | ..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | 0 | ..... | Blue sky..... | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.07 | 738.4 | 29.48 | 748.8 | 63.0 | 17.2 | 67 | SE | 9 | 4 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.22 | 742.1 | 29.63 | 752.5 | 60.6 | 15.9 | 62 | ESE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.49 | 749.0 | 29.73 | 755.2 | 48.7 | 9.3 | 46 | SW | 7 | 3 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.60 | 751.8 | 29.61 | 752.2 | 40.1 | 4.5 | 73 | W | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.10 | 739.2 | 29.71 | 754.7 | 68.4 | 20.2 | 40 | SSW | 9 | 4 | ..... | ..... | 10k;ks;ck]. | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.89 | 759.1 | 29.96 | 760.9 | 63.5 | 17.5 | 50 | S | 31? | 14? | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.05 | 763.2 | 30.07 | 763.7 | 60.8 | 16.0 | 77 | S | 4 | 2 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.21 | 742.0 | 29.76 | 755.9 | 50.7 | 10.4 | 54 | SW | 11 | 5 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.70 | 754.4 | 29.90 | 759.5 | 71.8 | 22.1 | 33 | W | 2 | 1 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.17 | 741.0 | 29.19 | 741.5 | 37.2 | 2.9 | 61 | WSW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.52 | 724.5 | 29.93 | 760.1 | 59.5 | 15.3 | 42 | NW | 45 | 20 | ..... | ..... | 5c | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 29.98 | 761.6 | 29.90 | 759.5 | 72.3 | 22.4 | 30 | ESE | 7 | 3 | ..... | ..... | 3s | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.37 | 745.9 | 29.82 | 757.5 | 65.7 | 18.7 | 37 | SW | 27 | 12 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.40 | 746.7 | 29.66 | 753.4 | 58.3 | 14.6 | 62 | SW | 31 | 14 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Raining..... | Physical Cabinet. |
| Ekaterinburg | 28.91 | 734.2 | 29.84 | 757.8 | 56.5 | 13.6 | 64 | WSW | 2 | 1 | ..... | ..... | 8cks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.71 | 754.5 | 29.93 | 760.2 | 74.7 | 23.7 | 45 | SE | 9 | 4 | ..... | ..... | 8s | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.49 | 723.6 | 30.03 | 762.7 | 66.6 | 19.2 | 52 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.69 | 754.2 | 30.21 | 767.3 | 41.9 | 5.5 | 58 | S | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Meteorological Obs. |
| Yeniseisk | 30.04 | 763.0 | 30.34 | 770.7 | 29.1 | — 1.6 | 43 | SE | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking, (China) | 29.75 | 755.7 | 29.89 | 759.3 | 61.5 | 16.4 | 67 | Calm | 0 | 0 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.93 | 760.1 | 30.02 | 762.6 | 37.2 | 2.9 | 85 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.65 | 753.1 | 29.76 | 755.8 | 64.4 | 18 | 47 | WSW | 2.9 | 1.31 | ..... | ..... | 1c | ..... | ..... | 0 | 0 | ..... | Antonio Ravo, Director |
| Bilbao, Met. Obs'y | 29.72 | 754.8 | 29.77 | 756.2 | 54.3 | 12.4 | 100 | W | 2.9 | 1.31 | ..... | 2 | 7 | NW | ..... | 0.311 | 7.9 | Raining..... | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.88 | 682.1 | ..... | ..... | 43.9 | 6.6 | 84 | SE | 8.4 | 3.73 | ..... | ..... | 9 | ..... | ..... | 0.118 | 3.0 | Raining..... | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.64 | 702.1 | ..... | ..... | 48.0 | 8.9 | 78 | SW | 22.4 | 10.00 | ..... | 0 | 10 | ..... | ..... | 0.016 | 0.4 | Covered..... | The Staff. |
| Murcia, Met. Obs'y | 29.73 | 755.2 | 29.88 | 758.9 | 73.2 | 22.9 | 34 | SW | 4.1 | 1.83 | ..... | 3 | 3 | SE | ..... | 0.007 | 0.18 | Misty..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.86 | 733.1 | 29.75 | 755.6 | 59.7 | 15.4 | 78 | SW | 11.2 | 5.0 | ..... | ..... | 8 | ..... | ..... | 0.138 | 3.5 | Almost cov'd | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.08 | 764.0 | 30.14 | 765.6 | 76.9 | 24.9 | 74 | ENE | 19.0 | 8.5 | ..... | 0 | 2ks | ..... | ..... | 0 | 0 | Fair..... | Benito Vines, S. J |
| Manilla, Philippine Islands | 29.72 | 754.7 | 29.76 | 756.1 | 84.4 | 29.1 | 79 | SSW | 10.5 | 4.7 | ..... | 2 | 2 | NE | SW | 0 | 0 | Covered..... | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.01 | 762.2 | 30.11 | 764.7 | 62.1 | 16.7 | 78 | WSW | 9.6 | 4.3 | ..... | 0 | 9 | ..... | NW;SSW | 0.059 | 1.5 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W.I | 29.98 | 761.5 | 30.07 | 763.8 | 82.4 | 28.0 | 76 | SE | 0 | 0 | ..... | 5ks | 2k | SE | SE | 0.010 | 0.25 | Cloudy..... | Leonardo deTejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 666.5 m, or 2,160.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.36 | 745.7 | 29.40 | 746.7 | 34.2 | 1.2 | ..... | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.49 | 749.0 | 29.54 | 750.3 | 38.8 | 3.8 | 45 | NW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.58 | 751.4 | 29.63 | 752.7 | 43.5 | 6.4 | 48 | W | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.52 | 749.9 | 29.70 | 754.4 | 39.9 | 4.4 | 53 | NNE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.56 | 750.7 | 29.61 | 752.2 | 40.6 | 4.8 | 74 | NNE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.62 | 752.4 | 29.70 | 754.3 | 42.3 | 5.7 | 50 | ENE | 7.4 | 3.3 | ..... | ..... | 10 | ..... | SW | 0.01 | 0.03 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.31 | 719.1 | 29.76 | 755.9 | 46.0 | 7.8 | 70 | SSW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.028 | 0.7 | Covered..... | The Observatory. |
| Zurich | 28.02 | 711.7 | 29.69 | 754 0 | 46.4 | 8.0 | 69 | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.28 | 7.0 | Cloudy..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —5.2 mm.; Thermometer,—5.2 Cent.; Relative Humidity, +13 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,338.6 feet, and that of Zurich 470 m., or 1,542.0 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.95 | 760.8 | 70.5 | 21.4 | 49 | S | 8 | 3.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.20 | 767.0 | 91.4 | 33.0 | ..... | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| Valona | ..... | ..... | 29.82 | 757.5 | 76.6 | 24.8 | ..... | S | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut. (Syria,) Lee Obs'y | 29.83 | 757.7 | 29.95 | 760.4 | 67.8 | 19.9 | 65 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Prof. C. V. A. Van Dyck. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.11 | 764.8 | 30.18 | 766.6 | 37.8 | 3.2 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Hon. J. Ferguson. |
| Brockville, Ontario | 30.07 | 763.8 | 30.38 | 771.6 | 49 | 9.4 | ..... | SW | 1 | 0.4 | ..... | 0 | 2s | ..... | W | 0 | 0 | Clear..... | W. R. Bigg. |
| *Chatham, N. B | 30.10 | 764.5 | 30.17 | 766.3 | 40 | 4.4 | 89 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | G. A. Blair. |
| Charlottetown, P. E. Island | 30.06 | 763.5 | 30.10 | 764.5 | 38 | 3.3 | 55 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 30.12 | 765.0 | 30.32 | 770.1 | 44.5 | 6.9 | 69 | NW | ..... | ..... | 1 | 3cs | 0 | ..... | NW | 0 | 0 | Fair..... | James Smith, M. A. |
| Dalhousie, N. B | 29.99 | 761.7 | 30.10 | 764.1 | 39 | 3.9 | ..... | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | H. A. Johnson. |
| Esquimault, B. C | 30.35 | 770.9 | 30.40 | 772.1 | 45.3 | 7.4 | 100 | Calm | 0 | 0 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Overcast..... | W. H. Bevis. |
| *Father Point, Quebec | 30.21 | 767.3 | 30.23 | 767.8 | 36 | 2.2 | 62 | NW | 12 | 5.4 | ..... | 2cs | Haze | Calm | Calm | 0 | 0 | Clear..... | J. McWilliams. |
| Fredericton, N. B | 30.14 | 765.5 | 30.21 | 767.3 | 40.9 | 4.9 | 41 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.41 | 747.0 | 30.25 | 768.3 | 42 | 5.6 | 100 | NE | 18 | 8.0 | ..... | 5k | 5n | NE | NE | 0.080 | 0.76 | Light rain... | James Stewart. |
| Granton, Ontario | 29.32 | 744.7 | 30.43 | 772.9 | 52 | 11.1 | ..... | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | James Grant. |
| *Halifax, N. S | 29.95 | 760.7 | 30.09 | 764.9 | 42 | 5.6 | 50 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | F. Allison, M. A. |
| Hamilton, Ontario | 30.08 | 764.0 | 30.46 | 773.7 | 46.3 | 7.9 | 68 | SW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Clear..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 30.04 | 763.0 | 30.38 | 771.6 | 48 | 6.1 | 86 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.00 | 762.0 | 30.04 | 763.0 | 35.7 | 2.1 | 83 | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair ..... | C. H. Rigby. |
| Moose Factory, Ontario | 30.10 | 764.5 | 30.14 | 765.5 | 42.3 | 5.7 | 59 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Inap. | Inap. | Cloudy..... | J. R. Nason. |
| *Montreal, Quebec | 30.12 | 765.0 | 30.32 | 770.1 | 47 | 8.3 | 64 | NW | 4 | 1.8 | ..... | 5cs | 0 | ..... | ..... | 0 | 0 | Foggy ..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.72 | 754.9 | 30.43 | 772.9 | 40 | 4.4 | 66 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Rev. R. Mosly. |
| Peterboro, Ontario | 29.91 | 759.8 | 30.40 | 772.1 | 52.2 | 11.2 | 85 | N | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.74 | 755.4 | 30.46 | 773.7 | 41 | 5.0 | 74 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | H. Morgan. |
| Port Hastings, N. S | 30.01 | 762.2 | 30.06 | 763.5 | 30.8 | 2.7 | ..... | NW | 7 | 3.1 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine..... | Peter Grant. |
| Port Stanley, Ontario | 29.78 | 756.4 | 30.46 | 773.7 | 38 | 3.3 | 81 | NE | 1 | 0.4 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear..... | M. Payne. |
| *Quebec, Quebec | 29.94 | 760.5 | 30.27 | 768.8 | 40 | 4.4 | 48 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.89 | 759.2 | 30.37 | 771.4 | 38 | 3.3 | 67 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | W. H. McIntyre. |
| St. Andrews, N. B | 30.13 | 765.3 | 30.18 | 766.6 | 42 | 5.6 | 46 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Dr. Gove. |
| St. John, N. B | 30.02 | 762.5 | 30.19 | 766.8 | 40 | 4.4 | 47 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.68 | 753.9 | 30.40 | 772.1 | 49 | 9.4 | 57 | SE | 3 | 1.3 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Hazy..... | K. Stewart. |
| Stayner, Ontario | 29.61 | 752 1 | 30.40 | 772.1 | 47 | 8.3 | 77 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | R. J. Cole. |
| Stratford, Ontario | 29.14 | 740.1 | 30.45 | 773.4 | 43.3 | 6.3 | 83 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.99 | 761.7 | 30.03 | 762.8 | 41 | 5.0 | 52 | NW | 8 | 3.6 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear ..... | T. C. Hill. |
| *Toronto, Ontario | 30.06 | 763.5 | 30.44 | 773.2 | 47 | 8.3 | 61 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Magnetic Observatory. |
| Windsor, N. S | 30.03 | 762.8 | 30.13 | 765.3 | 39.0 | 3.9 | 73 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. .. ..... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 38.0 | 3.3 | 81 | W | ..... | ..... | ..... | 5ck | 5ks | ..... | ..... | 0 | 0 | Fair ..... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'r 0—10. | CLOUDS. Amount. Lw'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 30.15 | 765.8 | 30.38 | 771.6 | 47 | 8.3 | 55 | N | 1 | 0.4 | ..... | 2c | Sm'e | N | ..... | 0 | 0 | Smoky | |
| Alpena, Michigan | 29.75 | 755.6 | 30.42 | 772.6 | 43 | 6.1 | 51 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Atlanta, Georgia | 29.25 | 742.9 | 30.41 | 772.4 | 59 | 15.0 | 59 | E | 6 | 2.7 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 30.41 | 772.4 | 30.42 | 772.6 | 55 | 12.8 | 45 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Augusta, Georgia | 30.27 | 768.8 | 30.45 | 773.4 | 55 | 12.8 | 80 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 30.41 | 772.4 | 30.46 | 773.7 | 56 | 13.3 | 35 | NW | 4 | 1.8 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Smoky | |
| Barnegat, New Jersey | 30.37 | 771.4 | 30.39 | 771.9 | 54 | 12.2 | 43 | NW | 8 | 3.6 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 28.20 | 716.3 | 30.05 | 763.3 | 50 | 10.0 | 86 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | SE | 0.18 | 4.6 | Cloudy | |
| Boerne, Texas | 28 33 | 719.6 | 29.59 | 751.6 | 66 | 18.9 | 89 | SE | 12 | 5.4 | ..... | ..... | 10n | ..... | SE | 0.09 | 2.3 | Light rain | |
| Boise City, Idaho | 27.37 | 695.2 | 30.33 | 770.4 | 36 | 2.2 | 71 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boston, Massachusetts | 30.16 | 766.1 | 30.32 | 770.1 | 49 | 9.4 | 44 | NW | 9 | 4.0 | ..... | 1c | 0 | N | ..... | 0 | 0 | Clear | |
| Brackettville, Texas | 28.64 | 727.4 | 29.65 | 753.1 | 60 | 15.6 | 88 | NW | 10 | 4.5 | ..... | ..... | 10ks | ..... | S | 0.27 | 6.9 | Cloudy | |
| Breckenridge, Minnesota | 29.08 | 738.6 | 30.07 | 763.8 | 52 | 11.1 | 79 | SE | 5 | 2.2 | ..... | ..... | 10ks | ..... | SE | 0.11 | 2.8 | Cloudy | |
| Brownsville, Texas | 29.72 | 754.9 | 29.76 | 755.9 | 75 | 23.9 | 77 | SE | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.74 | 755.4 | 30.47 | 773.9 | 43 | 6.1 | 47 | SW | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 57 | 13.9 | 31 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 30.05 | 763.3 | 30.35 | 770.9 | 44 | 6.7 | 60 | Calm | 0 | 0 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Cairo, Illinois | 29.92 | 760.0 | 30.31 | 769.9 | 67 | 19.4 | 37 | SE | 8 | 3.6 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.06 | 636.5 | 29.86 | 758.4 | 42 | 5.6 | 66 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 43 | 6.1 | 28 | N | ..... | ..... | 4 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.42 | 696.5 | 29.99 | 761.7 | 29 | — 1.7 | 66 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.45 | 773.4 | 30.46 | 773.7 | 57 | 13.9 | 47 | Calm | 0 | 0 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Henry, Virginia | 30.42 | 772.6 | 30.44 | 773.2 | 55 | 12.8 | 50 | SW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.45 | 773.4 | 30.46 | 773.7 | 58 | 14.4 | 76 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape May, New Jersey | 30.36 | 771.1 | 30.39 | 771.9 | 49 | 9.4 | 78 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Castroville, Texas | 29.00 | 736.6 | 29.67 | 753.6 | 71 | 21.7 | 80 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 30.39 | 771.9 | 30.45 | 773.4 | 60 | 15.6 | 77 | NE | 3 | 1.3 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 23 86 | 606.0 | 28.80 | 756.9 | 31 | — 0.6 | 89 | N | 18 | 8.0 | ..... | 0 | 8s | ..... | N | 0.73 | 18.5 | Cloudy | |
| Chicago, Illinois | 29.66 | 753.4 | 30.36 | 771.1 | 53 | 11.7 | 61 | SE | 5 | 2.2 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Cincinnati, Ohio | 29.79 | 756.7 | 30.46 | 773.7 | 48 | 8.9 | 70 | Calm | 0 | 0 | ..... | 0 | 8m;6g | ..... | Calm | 0 | 0 | Clear | |
| Cleveland, Ohio | 29.73 | 755.1 | 30.48 | 774.2 | 46 | 7.2 | 68 | E | 6 | 2.7 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Coleman City, Texas | 27.65 | 709.9 | 29.56 | 750.8 | 59 | 15.0 | 100 | SW | 4 | 1.8 | ..... | ..... | 10n | ..... | SW | 1.46 | 37.1 | Heavy rain | |
| Columbus, Ohio | 29.60 | 751.8 | 30.46 | 773 7 | 52 | 11.1 | 35 | E | 2 | 0.9 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Concho, Texas | 27.87 | 707.9 | 29.51 | 749.5 | 54 | 12.2 | 93 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | W | 1.50 | 38.1 | Cloudy | |
| Corsicana, Texas | 29.43 | 747.6 | 29.88 | 758.9 | 70 | 21.1 | 75 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.62 | 752.3 | 30.26 | 768.6 | 56 | 13.3 | 51 | E | 5 | 2.2 | ..... | 8cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Deadwood, Dakota | 25.34 | 643.6 | ..... | ..... | 40 | 4.4 | 91 | Calm | 0 | 0 | ..... | Haze | 5s | E | E | 2.68 | 68.1 | Cloudy | |
| Decatur, Texas | 28.66 | 728.0 | 29.77 | 756.1 | 70 | 21.1 | 70 | SE | 16 | 7.2 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Denison, Texas | 29.14 | 740.1 | 29.91 | 759.7 | 66 | 18.9 | 72 | E | 11 | 4.9 | ..... | ..... | 10ks | ..... | S | Inap. | Inap. | Cloudy | |
| Denver, Colorado | 24.61 | 625.1 | 29.83 | 757.7 | 37 | 2.8 | 81 | NE | 4 | 1.8 | ..... | 5ck | 2s | Calm | Calm | 0.62 | 15.7 | Fair | |
| Des Moines, Iowa | 29.24 | 742.7 | 30.11 | 764.8 | 60 | 15.6 | 55 | SE | 10 | 4.5 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Fair | |
| Detroit, Michigan | 29.77 | 756.1 | 30.46 | 773.7 | 48 | 8.9 | 63 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Dodge City, Kansas | 27.23 | 691.6 | 29.45 | 748.0 | 55 | 12.8 | 81 | S | 24 | 10.7 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 29.57 | 751.1 | 30.27 | 768.8 | 56 | 13.3 | 57 | S | 1 | 0.4 | ..... | 1c | Haze | SE | Calm | 0 | 0 | Hazy | |
| Duluth, Minnesota | 29.54 | 750.3 | 30.24 | 768.1 | 43 | 6.1 | 67 | NE | 2 | 0.9 | ..... | 5ck | 5s | NW | Calm | 0 | 0 | Cloudy | |
| Eagle Pass, Texa | 29.00 | 736.6 | 29.72 | 754.9 | 64 | 17.8 | 68 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Eastport, Maine | 30.12 | 765.0 | 30.19 | 766.8 | 41 | 5.0 | 49 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 76 | 24.4 | 77 | S | ..... | ..... | 6 | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.05 | 661.7 | ..... | ..... | 45 | 7.2 | 17 | NW | 8 | 3.6 | ..... | 1cs | 0 | NW | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.74 | 755.4 | 30.47 | 773.9 | 52 | 11.1 | 47 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Escanaba, Michigan | 29.70 | 754.4 | 30.40 | 772.1 | 33 | 0.6 | 61 | NE | 3 | 1.3 | ..... | 2c | 0 | N | ..... | 0 | 0 | Fair | |
| Florence, Arizona | 28.47 | 723.1 | 30.07 | 763.8 | 54 | 12.2 | 26 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 28.12 | 714.2 | ..... | ..... | 40 | 4.4 | 90 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | NE | 0.54 | 13.7 | Light rain | |
| Fort Craig, New Mexico | 25.35 | 643.9 | 29.41 | 747.0 | 46 | 7.8 | 38 | NW | 4 | 1 8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort Davis, Texas | 25.03 | 635.8 | 29.99 | 761.7 | 49 | 9.4 | 18 | S | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.47 | 748.5 | 30.00 | 762.0 | 68 | 20.0 | 60 | SE | 12 | 5.4 | ..... | 8cs | 0 | E | ..... | 0 | 0 | Fair | |
| Fort Griffin, Texas | 28.45 | 722.6 | 29.69 | 754.1 | 58 | 14.4 | 100 | E | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 2.49 | 63.2 | Heavy rain | |
| Fort Keogh, Montana | 27.54 | 699.5 | ..... | ..... | 42 | 5.6 | 100 | N | 19 | 8.5 | ..... | ..... | 10n | ..... | Calm | 1.09 | 27.7 | Heavy rain | |
| Fort McKavett, Texas | 27.52 | 699.0 | 29.39 | 746.5 | 56 | 13.3 | 94 | W | 8 | 3.6 | ..... | 0 | 8s | ..... | W | 1.54 | 39.1 | Fair | |
| Fort St. Michael, Alaska | 29.87 | 758.7 | 29.90 | 759.4 | 12 | —11.1 | 100 | SW | 19 | 8.5 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Fort Sill, Indian Territory | 28.61 | 726.7 | 29.69 | 754.1 | 58 | 14.4 | 100 | NE | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 3.64 | 92.5 | Light rain | |
| Fort Stevenson, Dakota | 28.35 | 720.1 | ..... | ..... | 42 | 5.6 | 74 | NE | 21 | 9.4 | ..... | ..... | 10s | ..... | NE | 0.65 | 16.5 | Cloudy | |
| Fredericksburg, Texas | 28.04 | 712.2 | 29.54 | 750.3 | 65 | 18.3 | 100 | S | 19 | 8.5 | ..... | ..... | 10s | ..... | S | 0.20 | 5.1 | Cloudy | |
| Galveston, Texas | 29.90 | 759.4 | 29.95 | 760.7 | 72 | 22.2 | 85 | SE | 20 | 8.9 | ..... | 2ck | 2s | Calm | SE | 0 | 0 | Fair | |
| Graham, Texas | 28.70 | 729.0 | 29.72 | 754 9 | 59 | 15.0 | 100 | NE | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | $3.60 | $76.2 | Heavy rain | |
| Grand Haven, Michigan | 29.75 | 755.6 | 30.41 | 772.4 | 51 | 10.6 | 65 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.59 | 751.6 | 30.38 | 771.6 | 56 | 13.3 | 35 | SE | 1 | 0.4 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Indianola, Texas | 29.83 | 757.7 | 29.86 | 758.4 | 73 | 22.8 | 76 | SE | 28 | 12.5 | ..... | 8c | 2s | SW | SE | Inap. | Inap. | Cloudy | |
| Jacksboro, Texas | 28.64 | 727.4 | 29.73 | 755.1 | 65 | 18.3 | 89 | S | 20 | 8.9 | ..... | ..... | 10s | ..... | S | 0.27 | 6.9 | Cloudy | |
| Jacksonville, Florida | 30.36 | 771.1 | 30.39 | 771.9 | 69 | 20.6 | 56 | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.58 | 751.3 | 30.20 | 767.1 | 55 | 12.8 | 56 | SE | 13 | 5.8 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Key West, Florida | 30.17 | 766.3 | 30.21 | 767.3 | 74 | 23.3 | 72 | E | 20 | 8.9 | ..... | 5k | 0 | E | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 30.42 | 772.6 | 30.44 | 773.2 | 53 | 11.7 | 86 | SW | 10 | 4.5 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Knoxville, Tennessee | 30.43 | 772.9 | 30.47 | 773.9 | 50 | 10.0 | 65 | NE | 2 | 0.9 | ..... | 0 | Fog | ..... | ..... | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 29.49 | 749.0 | 30.23 | 767.8 | 56 | 13.3 | 46 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 25.92 | 658 4 | 30.07 | 763.8 | 38 | 3.3 | 54 | Calm | 0 | 0 | ..... | 8cs | 0 | NE | ..... | 0 | 0 | Cloudy | |
| Laredo, Texas | 29.35 | 745.5 | 29.97 | 753 6 | 77 | 25.0 | 69 | S | 16 | 7.2 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.18 | 741.2 | 29.99 | 761.7 | 64 | 17.8 | 58 | SE | 6 | 2.7 | ..... | 2ck | 2s | SW | S | 0 | 0 | Fair | |
| Los Angeles, California | 29.65 | 753.1 | 30.00 | 762.0 | 48.0 | 8.9 | 63 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentuckey | 29.82 | 757.4 | 30.39 | 771.9 | 52 | 11.1 | 54 | NE | 3 | 1.3 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.76 | 755.9 | 30.46 | 773.7 | 50 | 10.0 | 64 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Madison, Wisconsin | 29.30 | 744.2 | 30.30 | 769.6 | 48 | 8.9 | 63 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.58 | 751.3 | 30.30 | 769.6 | 47 | 8.3 | 48 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.13 | 714.5 | 29.83 | 757.7 | 62 | 16.7 | 88 | SW | 3 | 1.3 | ..... | ..... | 10n | ..... | Calm | 0.50 | 12.7 | Thunder-storm | |
| Memphis, Tennessee | 29.94 | 760.5 | 30.26 | 768.6 | 65 | 18.3 | 57 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.61 | 752 1 | 30.36 | 771.1 | 46 | 7.8 | 62 | E | 4 | 1.8 | ..... | 5c | Sm'e | NW | ..... | 0 | 0 | Fair | |
| Mobile, Alabama | 30.23 | 767.8 | 30.27 | 768.8 | 64 | 17.8 | 83 | SE | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 30.15 | 765.8 | 30.39 | 771.9 | 66 | 18.9 | 73 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Morgantown, West Virginia | 29.38 | 746 2 | 30.46 | 773.7 | 52 | 11.1 | 47 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mt. Washington, N. H | 23.83 | 605.3 | 30.19 | 766.8 | 17 | — 8.3 | 67 | NW | 48 | 21.5 | ..... | 5c | 2ks | NW | NW | 0 | 0 | Fair | |
| Nashville, Tennessee | 29.82 | 757.4 | 30.36 | 771.1 | 59 | 15.0 | 54 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 30.25 | 768.3 | 30.37 | 771.4 | 54 | 12.2 | 43 | NW | 3 | 1.3 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| New London, Connecticut | 30.29 | 769.4 | 30.34 | 770.6 | 52 | 11.1 | 41 | N | 4 | 1.8 | ..... | 8cs | 0 | NW | ..... | 0 | 0 | Fair | |
| New Orleans, Louisiana | 30.11 | 764.8 | 30.17 | 766.3 | 69 | 20.6 | 80 | E | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 30.28 | 769.1 | 30.33 | 770.4 | 49 | 9.4 | 44 | NW | 5 | 2.2 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| New York, New York | 30.22 | 767.6 | 30.41 | 772.4 | 53 | 11.7 | 42 | NW | 4 | 1.8 | ..... | 2cs | Sm'e | Calm | ..... | 0 | 0 | Smoky | |
| Norfolk, Virginia | 30.39 | 771.9 | 30.45 | 773.4 | 53 | 11.7 | 36 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 26.94 | 684.3 | 29.43 | 747.5 | 54 | 12.2 | 83 | SE | 28 | 12.5 | ..... | ..... | 10s | ..... | SE | 0.07 | 1.8 | Cloudy | |
| Olympia, Washington Ter. | 30.38 | 771.6 | 30.43 | 772.9 | 37.2 | 2.9 | 90 | W | 2 | 0.9 | ..... | 4c | Fog | N | Calm | 0.02 | 0.5 | Fair | |
| Omaha, Nebraska | 26.87 | 733.3 | 29.93 | 760.2 | 63 | 17.2 | 62 | SE | 8 | 3.6 | ..... | 8k | 2s | SE | Calm | 0.05 | 1.3 | Cloudy | |
| Oswego, New York | 30.09 | 764.3 | 30.42 | 772.6 | 46 | 7.8 | 64 | SW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pembina, Dakota | 29.28 | 743.7 | 30.12 | 765.0 | 44 | 6.7 | 92 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Philadelphia, Pa. | 30.36 | 771.1 | 30.41 | 772.4 | 57 | 13.9 | 62 | N | 2 | 0.9 | ..... | 2cs | Sm'e | N | Calm | 0 | 0 | Fair | |
| Phœnix, Arizona | 28.73 | 729.7 | 30.54 | 775.7 | 51 | 10.6 | 34 | Calm | 0 | 0 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Fair | |
| Pike's Peak, Colorado | 17.49 | 444.2 | 29.70 | 754.4 | 7 | —13.9 | 100 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 2.42 | 61.5 | Cloudy | |
| Pioche, Nevada | 24.05 | 610.9 | 29.82 | 757.4 | 36 | 1.7 | 61 | N | 10 | 4.5 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.66 | 753.4 | 30.51 | 774.9 | 40 | 4.4 | 73 | N | 2 | 0.9 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Port Huron, Michigan | 29.76 | 755.9 | 30.44 | 773.2 | 49 | 9.4 | 67 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Portland, Maine | 30.23 | 767.6 | 30.28 | 769.1 | 48 | 8.9 | 49 | Calm | 0 | 0 | ..... | 1k | Haze | Calm | Calm | 0 | 0 | Clear | |
| Portland, Oregon | 30.88 | 771.6 | 30.49 | 774.4 | 40.6 | 4.7 | 87 | Calm | 0 | 0 | ..... | 0 | 1s | ..... | ..... | 0 | 0 | Clear | |
| Prescott, Arizona | 24.64 | 625.8 | 30.00 | 762.0 | 36 | 1.7 | 53 | NE | 1 | 0.4 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Punta Rassa, Florida | 30.27 | 768.8 | 30.29 | 769.4 | 71 | 21.7 | 62 | E | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Red Bluff, California | 29.85 | 758.2 | 30.21 | 767.3 | 54 | 12.2 | 49 | N | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rio Grande City, Texas | 29.55 | 750.6 | 29.76 | 755.9 | 76 | 24.4 | 69 | S | 20 | 8.9 | ..... | 0 | 2ks | ..... | S | 0 | 0 | Clear | |
| Rochester, New York | 29.80 | 756.9 | 30.43 | 772.9 | 45 | 7.2 | 46 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Roseburg, Oregon | 29.88 | 758.9 | 30.48 | 774.2 | 38.5 | 3.6 | 96 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sacramento, California | 30.04 | 763.0 | 30.12 | 765.0 | 56.5 | 13.6 | 54 | N | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.70 | 754.4 | 30.28 | 769.1 | 60 | 15.6 | 65 | SE | 11 | 4.9 | ..... | 5cs | Haze | Calm | ..... | 0 | 0 | Fair | |
| St. Marks, Florida | 30.36 | 770.9 | 30.36 | 771.1 | 64 | 17.8 | 73 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.30 | 744.2 | 30.12 | 765.0 | 57 | 13.9 | 40 | SE | 8 | 3.6 | ..... | 8cs | 0 | S | ..... | 0 | 0 | Fair | |
| Salt Lake City, Utah | 25.68 | 652.3 | 30.01 | 762.2 | 39 | 3.9 | 46 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| San Antonio, Texas | 29.13 | 739.9 | 29.69 | 754.1 | 71 | 21.7 | 80 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | SE | 0.03 | 0.8 | Cloudy | |
| San Diego, California | 29.93 | 760.2 | 30.00 | 762.0 | 48 | 8.9 | 56 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.79 | 756.7 | 30.48 | 774.2 | 50 | 10.0 | 52 | S | 2 | 0.9 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Sandy Hook, New Jersey | 30.35 | 770.9 | 30.38 | 771.6 | 55 | 12.8 | 50 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Francisco, California | 30.09 | 764.3 | 30.16 | 766.1 | 51.5 | 10.8 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 23.06 | 585.7 | 29.60 | 751.8 | 35 | 1.7 | 70 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Savannah, Georgia | 30.34 | 770.6 | 30.44 | 773.2 | 64 | 17.8 | 73 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Shreveport, Louisiana | 29.84 | 757.9 | 30.06 | 763.5 | 65 | 18.3 | 78 | SE | 12 | 5.4 | ..... | .... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Silver City, New Mexico | 24.14 | 613.1 | 30.43 | 772.9 | 35 | 1.7 | 61 | Calm | 0 | 0 | ..... | 0 | 6s | ..... | Calm | 0 | 0 | Fair | |
| Smithville, North Carolina | 30.44 | 773.2 | 30.48 | 774.2 | 57 | 13.9 | 75 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Springfield, Massachusetts | 30.24 | 768.1 | 30.37 | 771.4 | 47 | 8.3 | 70 | W | 1 | 0.4 | ..... | 5c | Sm'e | NE | ..... | 0 | 0 | Fair | |
| Stockton, Texas | 26.80 | 680.7 | 29.80 | 756.9 | 58 | 14.4 | 17 | SW | 7 | 3.1 | ..... | 8k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Thatcher's Island, Mass. | 30.27 | 768.8 | 30.32 | 770.1 | 45 | 7.2 | 63 | NW | 12 | 5.4 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Toledo, Ohio | 29.75 | 755.6 | 30.44 | 773.2 | 54 | 12.2 | 55 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Tucson, Arizona | 27.44 | 697.0 | 29.99 | 761.7 | 40 | 7.8 | 40 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 30.05 | 763.3 | 30.53 | 776.7 | 37.0 | 2.8 | 92 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 33 | 0.6 | 79 | SW | ..... | ..... | 4 | ..... | 10s | ..... | SW | 0.03 | 0.8 | Cloudy | |
| Uvalde, Texas | 28.86 | 733.0 | 29.65 | 753.1 | 70 | 21.1 | 85 | NE | 3 | 1.3 | ..... | ..... | 10s | ..... | NE | 0.18 | 4.6 | Cloudy | |
| Vicksburg, Mississippi | 29.98 | 761.5 | 30.24 | 768.1 | 59 | 15.0 | 88 | SE | 4 | 1.8 | ..... | 0 | 5s | ..... | SE | 0 | 0 | Fair | |
| Virginia City, Montana | 24.48 | 621.8 | 29.96 | 761.0 | 37 | 2.8 | 88 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| Visalia, California | 29.74 | 755.4 | 30.12 | 765.0 | 48 | 8.9 | 78 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 30.34 | 770.6 | 30.46 | 773.7 | 49 | 9.4 | 64 | W | 2 | 0.9 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 54 | 12.2 | 61 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.38 | 771.6 | 30.47 | 773.9 | 54 | 12.2 | 74 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.88 | 657.3 | 30.24 | 768.1 | 28 | — 2.2 | 77 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass. | 30.28 | 769.1 | 30.32 | 770.1 | 47 | 8.3 | 55 | N | 6 | 2.7 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Clear | |
| Yankton, Dakota | 28.67 | 728.2 | 29.92 | 760.0 | 60 | 15.6 | 71 | SE | 12 | 5.4 | ..... | ..... | 10n | ..... | SE | 0.04 | 1.0 | Light rain | |
| Yuma, Arizona | 29.73 | 755.1 | 29.89 | 759.2 | 65 | 12.8 | 39 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark. | 28.51 | 724.1 | 29.90 | 759.4 | 62 | 16.7 | 50 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba. W. I. | 30.08 | 764.0 | 30.13 | 765.3 | 77 | 25.0 | 72 | NE | 2.4 | 1.1 | ..... | 0 | 2ks | ..... | NE | 0 | 0 | Cloudy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A. | 25.29 | 642.4 | ..... | ..... | 63.8 | 17.7 | 87 | Calm | ..... | ..... | 0 | ..... | 8n | ..... | ..... | 0.71 | 18.03 | ..... | Thomas Herran. |
| Navassa, W. I. | 29.97 | 761.2 | 30.05 | 763.3 | 80 | 26.7 | ..... | NE | 20 | 8.9 | ..... | ..... | ..... | ..... | ..... | Blank | Blank | Partly cl'dy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.01 | 762.2 | 30.01 | 762.2 | 81 | 27.2 | 87 | E | ..... | ..... | 2 | 5ck | 5k | E | ..... | 1.390 | 45.31 | ⅗ clouded | C. J. Hering. |
| Santiago de Cuba, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A. | 30.29 | 769.4 | 30.35 | 770.9 | 28.0 | — 2.2 | 94 | N | 11 | 4.9 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | J. Fortescue & W. Wood. |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Grima, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,916 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,160. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m., Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.8 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.886 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. §Rain-fall, approximated.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.08 | 764.0 | 54 | 12.2 | 52 | 11.1 | 100 | SSW | 7 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0.080 | 2.18 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 30.44 | 773.2 | 68 | 20.0 | 68 | 20.0 | 90 | E | 25 | 11.2 | ..... | ..... | 5? | ..... | E | 0 | 0 | ..... | ..... | Clear? ..... | |
| Navy Yard, Portsmouth, N.H | 30.29 | 769.4 | 67 | 19.4 | 42 | 5.6 | 91 | W | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan.....* | 30.21‡ | 767.3‡ | ..... | ..... | 56 | 13.3 | 75 | Calm | ..... | ..... | 0 | ..... | 1k | ..... | SW | 0 | 0 | ..... | ..... | Clear..... | |
| Adams, Panama .....* | 30.00 | 762.0 | 80 | 26.7 | 79 | 26.1 | 95 | NW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Fair ..... | |
| Alaska, Esquimault, Vancouver I. | 30.41‡ | 772.4‡ | ..... | ..... | 47 | 8.3 | 85 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | ..... | Overcast.... | |
| Alliance, N. 40° 35′ 30″, E. 14° 11′ 20″ | 29.83‡ | 757.7‡ | ..... | ..... | 61 | 16.1 | 66 | WSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Light | W | Cloudy..... | |
| Ashuelot, Hong-Kong, China. ...* | 29.96‡ | 761.0‡ | ..... | ..... | 68 | 20.0 | 79 | ENE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear ..... | |
| Canonicus, New Orleans, La.....* | 30.22 | 767.6 | 52 | 11.1 | 73 | 22.8 | 63 | SE | ..... | ..... | 4 | ..... | 2 | ..... | SE | ..... | ..... | ..... | ..... | Fair..... | |
| Colorado, New York, N. Y..... | 30.38 | 771.6 | 58 | 14.4 | 54 | 12.2 | 87 | WNW | 7 | 3.1 | ..... | ..... | 2 | ..... | NW | 0 | 0 | ..... | ..... | Clear..... | |
| Constitution N. 25° 11′, W. 24° 14′..... | 30.25‡ | 768.3‡ | ..... | ..... | 70 | 21.1 | 90 | NE | ..... | ..... | 4 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | NE | Cloudy..... | |
| Despatch, Genoa, Italy..... | 29.63‡ | 752.6‡ | ..... | ..... | 60 | 15.6 | 82 | SSE | ..... | ..... | 2 | ..... | 5 | ..... | SE | ..... | ..... | Smooth | ..... | Fair ..... | |
| Essex, Montevideo, Uruguay.* | 30.20 | 767.1 | 62 | 16.7 | 63 | 17.2 | 90 | N | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Franklin, Norfolk, Va.....* | 30.57 | 776.5 | 62 | 16.7 | 53 | 11.7 | 73 | WSW | 2.4 | 1.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Gettysburg, Genoa, Italy .....* | 29.68‡ | 753.9‡ | ..... | ..... | 58 | 14.4 | 88 | SE | ..... | ..... | 3 | ..... | 5 | ..... | SE | 0.7 | 18. | Smooth | ..... | Cloudy..... | |
| Hartford, Buenos Ayres, S. A.....* | 30.18 | 766.6 | 67 | 19.4 | 64 | 17.8 | 73 | N | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Michigan, Erie, Pa.....† | 30.18‡ | 766.6‡ | ..... | ..... | 46 | 7.8 | 77 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Monocacy, Shanghai, China.....* | 30.06‡ | 763.5‡ | ..... | ..... | 59 | 15.0 | 82 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Monongahela N. 27° 12′, E. 148° 50′.....* | 30.17‡ | 766.3‡ | ..... | ..... | 72 | 22.2 | 90 | NNE | ..... | ..... | 2–3 | ..... | ck; n | ..... | N; E | 0 | 0 | Light | N; E | Overcast..... | |
| New Hampshire, Port Royal, S. C.....* | 30.50 | 774.7 | 72 | 22.2 | 70 | 21.1 | 85 | ENE | 8 | 3.6 | ..... | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Clear..... | |
| Onward, Callao, Peru.....†* | 30.10 | 764.5 | ..... | ..... | 65 | 18.3 | 89 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | Long | W | Cloudy..... | |
| Palos, Cheefoo, China.....* | 30.05 | 763.3 | 58 | 14.4 | 47 | 8.3 | 78 | SSW | ..... | ..... | 3 | ..... | 5 | ..... | S | ..... | ..... | Smooth | ..... | Fair ..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 50 | 10.0 | 79 | S | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Pensacola. S. 17° 06′, W. 73° 30′..... | 30.02‡ | 762.5‡ | ..... | ..... | 72 | 22.2 | 85 | E | 3 | 1.3 | ..... | ..... | 5 | ..... | SE | 0 | 0 | Smooth | ..... | Fair..... | |
| Plymouth. Portsmouth, N. H..... | 30.27‡ | 768.8‡ | ..... | ..... | 43 | 6.1 | 60 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Portsmouth, Hampton Roads, Va..... | 30.43‡ | 772.9‡ | ..... | ..... | 59 | 15.0 | 59 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Slight | S; W | Clear..... | |
| Powhatan, Norfolk, Va..... | 30.40‡ | 772.1‡ | ..... | ..... | 53 | 11.7 | 73 | WNW | ..... | ..... | 0–1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Quinnebaug, N. 36° 54′, E. 3° 35′..... | 29.94‡ | 760.5‡ | ..... | ..... | 65 | 18.3 | 73 | W | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Ranger. Takoro, Formosa I.....* | 29.81‡ | 757.2‡ | ..... | ..... | 75 | 23.9 | 90 | NNW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear ..... | |
| Richmond. N. 6° 03′, E. 90° 10′ 09″..... | 29.85‡ | 758.2‡ | ..... | ..... | 84 | 28.9 | 79 | WSW | ..... | ..... | 1–2 | ..... | 2 | ..... | WSW | 0 | 0 | Long | WSW | Clear..... | |
| Rio Bravo, Brownsville, Texas..... | 29.85 | 758 2 | 76 | 24.4 | 76 | 24.4 | 86 | SE | ..... | ..... | 2 | ..... | 2 | ..... | SE | ..... | ..... | ..... | ..... | Fair ..... | |
| Santee, Annapolis, Md..... | 30.42‡ | 772.6‡ | ..... | ..... | 54 | 12.2 | 57 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Saratoga, Horta Bay, Fayal, Azores. | 30.16‡ | 766.1‡ | ..... | ..... | 63 | 17.2 | 94 | W | ..... | ..... | 4 | ..... | 10 | ..... | Calm | Slight | Slight | Smooth | ..... | Overcast..... | |
| St. Louis, League Island, Pa..... | 30.30 | 769.6 | 56 | 13.3 | 48 | 8.9 | 78 | SW | 4 | 1.8 | ..... | ..... | 2 | ..... | N | 0 | 0 | ..... | ..... | Clear..... | |
| Trenton Villafranca, France...* | 29.60‡ | 751.8‡ | ..... | ..... | 65 | 18.3 | 73 | ESE | ..... | ..... | 1–3 | ..... | 0 | ..... | ..... | 0.03 | 0.8 | Mod'ate | S | Clear. ..... | |
| Tuscarora. N. 15° 40′, W. 96° 24′ ...* | 29.89‡ | 759.2‡ | ..... | ..... | 78 | 25.6 | 78 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Hazy..... | |
| Vandalia N. 31° 20′, W. 73° 23′... | 30.48‡ | 774.2‡ | ..... | ..... | 63 | 17.2 | 72 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear ..... | |
| Wabash, Boston, Mass..... | 30.47‡ | 773.9‡ | ..... | ..... | 44 | 6.7 | 84 | NW | 5 | 2.2 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Fair..... | |
| Wyoming, N. 36° 26′ E. 24° 55′.....* | 29.96‡ | 761.0‡ | ..... | ..... | 66 | 18.9 | 94 | W | ..... | ..... | 2–3 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | W | Clear..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | |
| §S. S. City of Tokio Capt. Maury N. 34° 27′, E. 152° 32′ | | 30.29‡ | 769.4‡ | 62 | 16.7 | | WNW | | | 4 | | 2s | | NW | 0 | Mod'ate | NW | Blue sky | L. B. Walls. |
| S. S. Colima N. 29° 03′, W. 109° 01′ | | 29.93‡ | 760.2‡ | 73 | 22.8 | | NNW | | | 4 | | 0 | | | 0 | Small | NNW | Misty | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota, Capt. H. G. Morse, | | | | | | | | | | | | | | | | | | | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly |
| S. S. Granada, Capt. Austin. | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, Sydney, N. S. W. | | 30.07‡ | 763.8‡ | | | | W | | | 1 | | 0 | | | | | | Fine | R. C. Ghest, 1st Officer. |
| **WHITE STAR LINE MARINE SERIES.** Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kenn dy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |
| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, Capt. L. Meyer, N. 36° 46′, W. 135° 21′ | | 30.46‡ | 773.7‡ | 59 | 15.0 | 81 | WSW | | | 6 | | ks | | | 0 | Heavy | WSW | D. clouds | D. A. Joyce. |
| S. S. Gaelic, N. 44° 13′, W. 149° 02′ | | 30.18‡ | 766.6‡ | 40 | 4.4 | | Var. | | | 3 | | s | | Var. | Blank | Swell | W | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic, Capt. J. Metcalf, | | | | | | | | | | | | | | | | | | | J. G. Cameron. |
| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** Furnished by the co-operation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 41° 07′, W. 56° 24′ | | 30.04‡ | 763.0‡ | | | | Calm | | | 0 | | 2 | | NW | | Smooth | NW | Fair | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office. §The date of the S. S. City of Tokio is uncertain, and may be in error one day.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the S. S. Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

| NAMES OF VESSELS. | True course toward. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | L'w'r | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, N. 51° 26′, W. 13° 05′ | | 29.44‡ | 747.8‡ | 51 | 10.6 | | SSE | | | 5 | | 9 | | SE | Mod'ate | Smooth | | Cloudy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud-direction as toward instead of from; sea-swell in general terms, as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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**ALLAN LINE MARINE SERIES.**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | J. Powell, 4th Officer. |
| S. S. Peruvian | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the co-operation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Rockport, Me. | | 30.19‡ | 766.8‡ | 47 | 8.3 | 34 | Calm | 0 | 0 | | | 0 | | | 0 | | | Clear | Capt. James Jorgensen. |
| Brigantine "George of Halifax" | | | | | | | | | | | | | | | | | | | Willard N. Pratt. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively by the letters c, k, s, n, d, f, p, hz., fg. and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 23, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum't'al error and temperature. Inches. | Barometer. Corrected for instrum't'al error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | 30.08 | 764.1 | 69.8 | 21.0 | 73 | WSW | | | 2 | | 5 | | | 0 | 0 | Cloudy | Kesxuche. |
| Nemours | | | 29.88 | 759.0 | 67.6 | 19.8 | 60 | W | | | 5 | | 0 | | | 0.059 | 1.5 | Clear | Tourilliere. |
| Algiers | | | 29.79 | 756.6 | 66.4 | 19.1 | 83 | NW | | | 3 | | 8 | | | 0.039 | 1.0 | Very cloudy | Foufrede. |
| La Calle | | | | | | | | | | | | | | | | | | | Jacques. |
| Tunis | | | | | | | | | | | | | | | | | | | Gau. |
| Sfax | | | 29.86 | 758.5 | | | | | | | | | | | | | | | |
| Saida | | | 30.04 | 763.1 | 69.8 | 21.0 | 45 | NW | | | 5 | | 8 | | | 0 | 0 | Very cloudy | Herbin. |
| Tebessa | | | 29.86 | 758.5 | 62.2 | 16.8 | 33 | W | | | 7 | | 10 | | | 0.008 | 0.2 | Covered | Watrin. |
| Geriville | | | 30.02 | 762.5 | 63.0 | 17.2 | 32 | N | | | 4 | | 8 | | | 0 | 0 | Very cloudy | Brugnlaux. |
| Laghouat | | | 29.90 | 760.9 | 73.8 | 23.2 | 42 | NW | | | 5 | | 5 | | | 0 | 0 | Cloudy | Bertrand. |
| Biskra | | | 29.84 | 757.9 | 78.1 | 25.6 | 53 | WNW | | | 2 | | 5 | | | 0 | 0 | Cloudy | Chanvaux. |

NOTE.—In the originals the amount of cloudiness is given by the scale 0-4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

## AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrum't'al error and temperature. Inches. | Barometer. Corrected for instrum't'al error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.01 | 736.8 | 29.56 | 750.7 | 48.7 | 9.3 | 92 | NE | | | 3 | | 10 | | | 0.299 | 7.6 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 28.83 | 732.2 | 29.58 | 751.2 | 58.8 | 14.9 | 67 | SW | | | 1 | | 10 | | | 0.075 | 1.9 | | Dr. Wiersbiski. |
| Eperies | 28.65 | 727.8 | 29.50 | 749.2 | 66.0 | 18.9 | 55 | Calm | | | 0 | | 10ks | | | | | | Julius Mikolik. |
| Gratz | 28.85 | 720.2 | 29.60 | 751.7 | 52.3 | 11.3 | 73 | SE | | | 3 | | 10 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.13 | 714.6 | 29.46 | 748.3 | 79.2 | 26.2 | 34 | SSE | | | 4 | | 4 | | | 0 | 0 | | Prof. A. Gottschling. |
| Kremsmünster | 28.28 | 718.2 | 29.60 | 751.9 | 52.0 | 11.1 | 55 | NNE | | | 2 | | 7 | | | 0.150 | 3.8 | | Prof. C. Wagner. |
| Lemberg | 28.51 | 724.1 | 29.44 | 747.8 | 71.6 | 22.0 | 44 | S | | | 1 | | 10 | | | 0.161 | 4.1 | | Dr. T. Stanecki. |
| Pola | 29.43 | 747.4 | 29.54 | 750.2 | 57.7 | 14.3 | 84 | WNW | | | 3 | | 6 | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.05 | 737.8 | 29.49 | 749.0 | 73.8 | 23.2 | 55 | E | | | 3 | | 7 | | | 0.055 | 1.4 | | Julius Csics, S. J. |
| Szegedin | 29.25 | 742.9 | 29.52 | 749.7 | 65.3 | 18.5 | 79 | Calm | | | 0 | | 10 | | | 0.451 | 11.45 | | Karl Stancel. |
| Trieste | 29.46 | 748.2 | 29.56 | 750.8 | 59.0 | 15.0 | 87 | W | | | 1 | | 10 | | | 0.346 | 8.8 | Raining | P. Busin. |
| Vienna | 28.89 | 733.9 | 29.60 | 751.8 | 54.7 | 12.6 | 49 | NNW | | | 2 | | 10 | | | 0 | 0 | | I. R. Central Met. Obs'y |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 367 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

## BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instrum't'al error and temperature. Inches. | Barometer. Corrected for instrum't'al error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.33 | 744.9 | 29.52 | 749.9 | 52.3 | 11.3 | 71 | SSW | | | 2 | | 10 | | S | 0.138 | 3.50 | Light rain | Royal Observatory. |
| Furnes | 29.47 | 748.5 | 29.49 | 749.1 | 56.7 | 13.7 | 64 | S | | | 2 | | 5 | | | 0.465 | 11.8 | Thunder-storm. | M. E. de Cae. |
| Maeseyck | 29.43 | 747.4 | 29.55 | 750.6 | 57.7 | 14.3 | 68 | NW | | | 2 | | 2 | | | 0.008 | 0 2 | | M. Pierrot. |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

**Entered at the Post Office at Washington, D. C., as Second-Class Matter.**

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0 -10. | Clouds. Amount. Upper. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.52 | 749.8 | 29.62 | 752.3 | 38.5 | 3.6 | ..... | E | 28 | 12.5 | ..... | ..... | 10 | ..... | ..... | 0.290 | 7.37 | Raining..... | W. Boswell. |
| Ardrossan | 29.50 | 749.3 | 29.51 | 749.5 | 44 | 6.7 | ..... | SSE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Raining..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.50 | 749.3 | 43.9 | 6.6 | ..... | ENE | 9 | 4.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast... | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.45 | 748.0 | 48.2 | 9.0 | ..... | E | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast.... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.48 | 748.8 | 45.4 | 7.4 | ..... | E | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Thomas Mackereth. |
| Bradford, Yorkshire | 29.10 | 739.1 | 29.50 | 749.3 | 43.3 | 6.3 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.06 | 1.5 | Overcast.... | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.92 | 760.0 | 29.94 | 760.5 | 83.5 | 28.6 | ..... | E | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.48 | 748.8 | 53.0 | 11.7 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | H. Todd. [C. |
| Cardington | ..... | ..... | 29.44 | 747.8 | 51.0 | 10.6 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast.... | John McLaren. |
| Chatham, School M. E. | 29.35 | 745.5 | 29.48 | 748.8 | 55.1 | 12.8 | ..... | SW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | Blank | Blank | Overcast.... | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.04 | 712.2 | 29.50 | 749.3 | 46.0 | 8.9 | ..... | S | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | Showery..... | Alexander Watt. |
| Donaghadee | 29.48 | 748.8 | 29.52 | 749.8 | 43 | 6.1 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast.... | J. Mac Gowan. |
| Dover | 29.45 | 748.0 | 29.47 | 748.5 | 48 | 8.9 | ..... | E | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | ¾ clouded... | J. Costello. |
| Falmouth, Observatory | 29.25 | 742.9 | 29.47 | 748.5 | 54.3 | 12.4 | ..... | WNW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast.... | The Staff. |
| Fort Napier, (Natal) | 27.64 | 702.0 | 29.94 | 760.5 | 74.0 | 23.3 | ..... | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 88 | 31.1 | ..... | N | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | |
| Galway, Queen's college | ..... | ..... | ..... | ..... | 50 | 10.0 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Rain & snow | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 29.90 | 759.4 | 30.06 | 763.5 | 66.7 | 19.3 | ..... | W | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.32 | 744.7 | 29.52 | 749.8 | 46.3 | 7.9 | ..... | NNE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. [C. |
| Great Yarmouth | 29.54 | 750.3 | 29.55 | 750.6 | 44 | 6.7 | ..... | SE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.30 | 744.2 | 29.47 | 748.5 | 52.8 | 11.6 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast.... | The staff, for G.B. Airy |
| Guernsey | 29.23 | 742.4 | 29.45 | 748.0 | 53 | 11.7 | ..... | NW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Dr. S.E.Hoskins, F.R.S |
| Helston | 30.08 | 764.0 | 30.20 | 767.1 | 55 | 12.8 | ..... | N | ..... | ..... | 6 | ..... | 1ck | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 29.42 | 747.3 | 29.46 | 748.3 | 51 | 10.6 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling.... | John Tilston. |
| Jersey | 29.20 | 741.7 | 29.49 | 749.0 | 52.9 | 11.6 | ..... | W | ..... | ..... | 3 | ..... | 8 | ..... | ..... | Blank | Blank | Gloomy ..... | J. Fisher. |
| Kew, Observatory | 29.44 | 747.8 | 29.47 | 748.5 | 48.5 | 9.2 | ..... | SSW | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | The Meteorological Of. |
| Leicester, Museum | 29.22 | 742.2 | 29.47 | 748.5 | 52.3 | 11.3 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Wm, J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.66 | 753.4 | 29.74 | 755.4 | 63 | 17.2 | ..... | W | ..... | ..... | 3 | ..... | 4ck | ..... | ..... | ..... | ..... | D. clouds.... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.53 | 750.0 | 29.63 | 752.6 | 40 | 4.4 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast.... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.24 | 768.1 | 73.0 | 22.8 | ..... | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 29.29 | 744.0 | 29.48 | 748.8 | 52.9 | 11.6 | ..... | SSE | ..... | ..... | 3 | ..... | 10k;d | ..... | ESE | 0.137 | 3.48 | Raining..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 28.94 | 735.1 | 29.46 | 748.3 | 48.0 | 8.9 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.46 | 748.3 | 49 | 9.4 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | H. E. Bellamy. |
| Plymouth | 29.36 | 745.7 | 29.43 | 747.5 | 53.6 | 12.0 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast.... | John Merrifield. |
| Roche's Point | 29.39 | 746.5 | 29.46 | 748.3 | 51 | 10.6 | ..... | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Wm. Kennedy. |
| Saint Ann's Head | 29.28 | 743.7 | 29.45 | 748.0 | 47 | 8.3 | ..... | W | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | Misty..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 38.9 | 3.8 | ..... | ENE | 20 | 8.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast.... | Rev C.Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.62 | 752.3 | 29.68 | 753.9 | 74.4 | 23.6 | ..... | SW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | Blank | Blank | D. clouds.... | W. H.Lyne. |
| Sheffield | 29.23 | 742.4 | 29.51 | 749.5 | 49.3 | 9.6 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.40 | 10.2 | Overcast.... | W. F. Cooper. |
| Silloth Rectory | 29.47 | 748.5 | 29.50 | 749.3 | 47.1 | 8.4 | 73 | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast .... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.10 | 739.1 | 29.51 | 749.5 | 43.0 | 6.1 | ..... | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.24 | 742.7 | 29.46 | 748.3 | 50.2 | 10.1 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | C. H. Griffith, F. M. S. |
| Truro, Royal Institution | 29.43 | 747.5 | 29.48 | 748.8 | 57 | 13.9 | ..... | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | W. Newcombe. |
| Valencia, Observatory | 29.51 | 749.5 | 29.53 | 750.0 | 51.0 | 10.6 | ..... | WNW | 19 | 8.5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds.... | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.04 | 763.0 | 30.08 | 764.0 | 62 | 16.7 | 72 | SSE | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy ..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.19 | 766.8 | 71 | 21.7 | 54 | N | ..... | ..... | 1 | ..... | 4k | ..... | ..... | 0 | 0 | Clear..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.56 | 750.8 | 44.2 | 6.8 | ..... | E | ..... | ..... | 2 | ..... | 5k | ..... | ..... | 0.02 | 0.5 | Cloudy..... | Andrew Gibb. |
| Mauritius, Observatory | 29.84 | 757.9 | 30.03 | 762.8 | 77.3 | 25.2 | 71 | E | 11.0 | 4.9 | ..... | ..... | 8 | ..... | E | 0 | 0 | Fine..... | C. Meldrum. |
| Melbourne, Observatory | 30.15 | 765.8 | 30.24 | 768.1 | 60.7 | 15.9 | 62 | NE | 5 | 2.2 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | Very fine..... | R. L. J. Ellery. |
| MonachLt-house, (Hebrides) | ..... | ..... | 29.60 | 751.8 | 42 | 5.6 | ..... | E | ..... | ..... | 6 | 10 | ..... | E | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.74 | 755.4 | 38 | 3.3 | ..... | NE | ..... | ..... | 4 | 8 | 10 | E | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

| British Marine Series. Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 42', E. 29° 25' | ..... | ..... | D. clouds.... | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... |
| Brig Alliance | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda. | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle-Isle | ..... | ..... | ..... | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra, | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole. | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | Capt. W.R. McMontry. |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have generally been carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected or instru'm'tal error and temperature. Inches. | BAROMETER. Corrected or instru'm'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity Miles per hour. | WIND. Velocity Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.25 | 666.7 | 29.97 | 761.2 | 68.0 | 20.0 | 86 | Calm | ..... | ..... | 0 | 3ckys | ..... | ..... | ..... | 0 | 0 | ..... | Federico Maison |

NOTE.—For St. Jose the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches for an altitude of 1,145 meters, or 3,756.6 feet; the distinction between the upper and lower clouds is not always made; the rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.43 | 747.6 | 29.48 | 748.8 | 38.1 | 3.4 | 71 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 29.52 | 749.9 | 29.54 | 750.4 | 49.5 | 9.7 | 47 | NE | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.87 | 758.8 | 29.92 | 759.9 | 34.2 | 1.2 | 77 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 29.84 | 757.9 | 29.87 | 758.8 | 34.7 | 1.5 | 56 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.39 | 746.5 | 29.56 | 750.8 | 45.0 | 7.2 | 94 | NE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 28.97 | 735.7 | 29.52 | 749.7 | 54.7 | 12.6 | 93 | SW | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.126 | 3.2 | Covered | Collignon, Director. |
| Amiens, Normal School | 29.45 | 748.0 | 29.56 | 750.7 | 62.2 | 16.8 | 87 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bonvallet, Director |
| Avignon, Normal School | 29.58 | 751.3 | 29.66 | 753.3 | 65.7 | 18.7 | 54 | NW | ..... | ..... | 1 | ..... | kn | ..... | NW | 0 | 0 | ..... | Giraud, Director |
| Bar-sur-Seine | 29.00 | 736.6 | 29.55 | 750.5 | 55.0 | 12.8 | 63 | S | ..... | ..... | 1 | ..... | 8kn | ..... | SW | 0.134 | 3.4 | Very cloudy | G. Saillard, Director. |
| Beauvais, Normal School | 29.21 | 742.0 | 29.48 | 748.7 | 51.1 | 10.6 | 91 | SE | ..... | ..... | ..... | ..... | 10 | ..... | SSE | 0.089 | 2.25 | Covered | Frere Eugene Marie, Dr |
| Besançon, Normal School | 28.74 | 729.9 | 29.57 | 751.1 | 57.6 | 14.2 | 53 | SW | ..... | ..... | 2 | ..... | 2 | ..... | W | 0.343 | 8.7 | Slightly cl'dy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.78 | 731.1 | 29.68 | 753.9 | 49.5 | 9.7 | 58 | S | ..... | ..... | 2 | ..... | ckn | N | N | 0.16 | 4. | ..... | Marlot, Director. |
| Bourges, Normal School | 29.00 | 736.6 | 29.55 | 750.5 | 50.5 | 10.3 | 89 | S | ..... | ..... | 3 | ..... | 10n | S | S | 0.20 | 5. | Raining | A. Waquet, Director |
| Brest, Naval Observatory | 29.27 | 743.4 | 29.51 | 749.6 | 58.3 | 14.6 | 63 | NW | ..... | ..... | 3 | ..... | 9 | ..... | NW | 0.128 | 3.25 | ..... | De Rermaree, Director |
| Carcassonne, Normal School | 29.32 | 744.8 | 29.73 | 755.2 | 56.1 | 13.4 | 77 | NW | ..... | ..... | ..... | ..... | 5 | W | NW | 0 | 0 | Cloudy | September, Director. |
| Caen, Normal School | 29.34 | 745.1 | 29.37 | 746.9 | 57.2 | 14 | 64 | NW | ..... | ..... | 1 | ..... | 5 | ..... | NW | 0.378 | 9.6 | Cloudy | Lair, Director. |
| Chartres, Normal School | 28.84 | 732.6 | 29.39 | 746.6 | 58.3 | 14.6 | 93 | W | ..... | ..... | 2 | ..... | 5 | ..... | ENE | 0.142 | 3.6 | Cloudy | Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.25 | 742.9 | 29.56 | 750.9 | 54.5 | 12.5 | 54 | S | ..... | ..... | 3 | ..... | 8 | S | S | 0 | 0 | Very cloudy | Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.24 | 717.4 | 29.58 | 751.3 | 55.4 | 13.0 | 60 | W | ..... | ..... | 1 | ..... | 10 | ..... | W | 0.024 | 0.6 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.75 | 730.3 | 29.63 | 752.5 | 53.2 | 11.8 | 74 | SW | ..... | ..... | 3 | ..... | 5c; kn | ..... | ..... | 0 | 0 | Cloudy | Dr. Coulet, Dire tor |
| Commune de Grèasque* | 28.56 | 725.3 | 29.70 | 754.3 | 58.8 | 14.9 | 60 | W | ..... | ..... | 3 | ..... | 5 | NW | W | 0 | 0 | ⅗ covered | L. Kina, Director. |
| Grenoble, Normal School | 28.90 | 734.1 | 29.66 | 753.3 | 57.2 | 14.0 | 45 | WNW | ..... | ..... | 1 | ..... | 5ks | W | ..... | 0 | 0 | Cloudy | Ablard, Director |
| La Roche-sur-Yon, N. School | 29.31 | 744.4 | 29.52 | 749.8 | 53.6 | 12.0 | 93 | W | ..... | ..... | 3 | ..... | 10 | ..... | W | 0.169 | 4.3 | Covered | Mouillot, Director |
| Le Mans, Normal School | 29.19 | 741.3 | 29.48 | 748.9 | 57.6 | 14.2 | 65 | WSW | ..... | ..... | 3 | ..... | 8 | ..... | W | 0.08 | 2. | Very cloudy | Poirrier, Director |
| Lens-Le-Saulnier, N.School | 28.71 | 729.1 | 29.62 | 752.4 | 56.7 | 13.7 | 42 | SW | ..... | ..... | 4 | ..... | 2ck | ..... | W | 0.008 | 0.2 | Slightly cl'dy | A. Baudry, Director. |
| Lorient, Naval Observatory | 29.43 | 747.5 | 29.53 | 750.0 | 57.0 | 14.0 | 76 | W | ..... | ..... | 3 | ..... | ..... | ..... | W | 0.102 | 2.6 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Galzin, Director. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff |
| Mirecourt, Normal School | 28.58 | 725.8 | 29.60 | 751.8 | 54.7 | 12.6 | 57 | SW | ..... | ..... | 1 | ..... | 10 | ..... | NE | 0.04 | 1. | Covered | Barbier, Director. |
| Nîmes, Normal School | 29.45 | 748.0 | 29.65 | 753.1 | 65.1 | 18.4 | 53 | W | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0 | 0 | Cloudy | Boyer, Director. |
| Privas, Normal School | 28.57 | 725.7 | 29.62 | 752.4 | 56.3 | 13.5 | 80 | N | ..... | ..... | 1 | ..... | 10 | SW | N | ..... | ..... | Rainy | Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.73 | 628.2 | ..... | ..... | 35.2 | 1.8 | 100 | SW | ..... | ..... | 8 | ..... | ..... | ..... | ..... | 0.043 | 1.1 | Misty | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.56 | 750.9 | 29.60 | 751.7 | 57.6 | 14.2 | 77 | WSW | ..... | ..... | 6 | ..... | 8 | W | W | 0.20 | 5. | ⅘ covered | Lt. E. Decante, Director. |
| Rouen, Normal School | 29.37 | 746.0 | 29.46 | 748.2 | 54.9 | 12.7 | 79 | SSE | ..... | ..... | 1 | ..... | 8 | ..... | SW | 0.094 | 2.4 | Very cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.45 | 748.0 | 29.48 | 748.8 | 56.3 | 13.5 | 82 | WNW | ..... | ..... | 2 | ..... | 1 | WNW | WNW | 0.181 | 4.59 | Clear | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.32 | 744.8 | 29.49 | 749.0 | 57.7 | 14.3 | 78 | S | ..... | ..... | 1 | ..... | 10 | ..... | S | 0.429 | 10.9 | Hailing | E. Renou, Director. |
| Tarbes, Normal School | 28.73 | 729.7 | 29.82 | 757.3 | 48.2 | 9 | 73 | W | ..... | ..... | 2 | ..... | 10 | WSW | SSW | 0.16 | 4. | Raining | T. Huguet, Director. |
| Toulouse, Observatory | 29.05 | 737.9 | 29.81 | 757.1 | 56.8 | 13.8 | 80 | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.213 | 5.4 | ..... | Mercadier Julier. |
| Versailles Observatory | 28.98 | 736.2 | 29.48 | 748.7 | 54.0 | 12.2 | 81 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.267 | 6.77 | Light rain | Dr. A. Berigny, Director |
| Villefranche-sur-Saone, N.S. | 28.95 | 735.4 | 29.65 | 753.2 | 57.9 | 14.4 | 75 | ESE | ..... | ..... | 1 | ..... | 10 | S | N | 0.04 | 1. | Covered | Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.81 | 757.1 | 29.84 | 757.8 | 81.0 | 27.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Lyons Obs'y, (Park Station) | 29.00 | 736.6 | 29.60 | 751.9 | 59.5 | 15.3 | 46 | S | ..... | ..... | 1 | ..... | 4 | ..... | SSW | 0 | 0 | Cloudy | Mr. Jays. |
| Mont-Louis | 24.54 | 623.4 | 29.86 | 758.4 | 44.2 | 6.8 | 61 | NE | 13.0 | 5.8 | ..... | ..... | 9 | ..... | ..... | 0.031 | 0.8 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.61 | 752.9 | 60.4 | 15.8 | 52 | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.20 | 741.7 | ..... | ..... | 53.8 | 12.1 | 83 | SSE | ..... | ..... | 3 | ..... | 10 | ..... | S | 0.087 | 2.2 | Raining | Marié Davy, Director. |
| Perpignan | 29.61 | 752.2 | 29.72 | 754.9 | 56.8 | 13.8 | 68 | N | 20.6 | 9.2 | ..... | ..... | 9 | ..... | NW | 0.083 | 2.1 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.22 | 564.5 | ..... | ..... | 30.2 | — 1.0 | ..... | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.126 | 3.21 | Snowy | Gen'l de Nansouty. |
| Tours | 29.32 | 744.7 | 29.52 | 749.7 | 53.8 | 12.1 | 83 | SSW | ..... | ..... | 1 | ..... | 10 | ..... | WSW | 0.169 | 4.3 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 29.94 | 760.5 | 29.96 | 761.1 | 66.9 | 19.4 | 97 | SE | 13.9 | 6.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand, Nice and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,436.2 ft.; Pic du Midi. (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135.0 millimeters, or 5 315 inches has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–1 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.77 | 730.8 | 29.61 | 752.0 | 50.0 | 10.0 | 75 | W | | | 4 | | 7 | W | | 0.079 | 2.0 | Raining | Prof. Dr. Hoh. |
| Berlin | 29.43 | 747.4 | 29.60 | 751.8 | 48.4 | 9.1 | 72 | SW | | | 4 | | 9 | | | 0.283 | 7.2 | Raining | Prof. Arndt. |
| Breslau | 29.10 | 739.0 | 29.62 | 752.3 | 56.5 | 13.6 | 49 | WNW | | | 3 | | 8 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.17 | 741.0 | 29.59 | 751.5 | 58.1 | 14.5 | 48 | SW | | | 1 | | 5 | S | | 0 | 0 | | Albert Senz. |
| Cassel | 28.98 | 736.0 | 29.57 | 751.1 | 55.0 | 12.8 | 61 | SSE | | | 2 | | 7 | W | | 0.638 | 16.20 | Raining | Dr. H. Möhl. |
| Crefeld | 29.40 | 746.7 | 29.56 | 750.8 | 55.4 | 13.0 | 61 | S | | | 2 | | 7k | | | 0.08 | 2. | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.26 | 743.1 | 29.62 | 752.3 | 58.1 | 14.5 | | SSW | | | 2 | | 6 | | | 0.008 | 0.2 | | Physical Society. |
| Freienwalde on the Oder | 29.52 | 749.8 | 29.56 | 750.8 | 47.1 | 8.4 | 82 | W | | | 4 | | 10ks | W | | 0.118 | 3.0 | | Assmann., M. D. |
| Friedrichshafen | 28.20 | 716.3 | 29.61 | 752.2 | 53.6 | 12.0 | 33 | SW | | | 4 | | 4 | WSW | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.48 | 748.9 | 29.56 | 750.7 | 49.1 | 9.5 | 67 | W | | | 2 | | 7k | | | 0.591 | 15.0 | Pleasant | Captain F. Hegeman. |
| Kiel | 29.54 | 750.4 | 29.56 | 750.8 | 46.0 | 7.8 | 61 | NE | | | 2 | | 2 | | | 0.355 | 9.03 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.41 | 746.9 | 29.49 | 749.0 | 58.1 | 14.5 | 53 | SW | | | 6 | | 4 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 29.48 | 748.8 | 41.9 | 5.5 | | SW | | | 4 | | 4 | | | 0.134 | 3.4 | | H. Müller. |
| Leipsic, Observatory | 29.19 | 741.4 | 29.61 | 752.0 | 51.8 | 11.0 | 50 | WSW | | | 4 | | 7 | W | | 0.315 | 8.0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.43 | 747.5 | 29.48 | 748.7 | 49.8 | 9.9 | 68 | SSE | | | 3 | | 4cs | | | | | | Skalweit. |
| Neufahrwasser | 29.49 | 749.0 | 29.50 | 749.4 | 51.8 | 11.0 | 63 | SW | | | 5 | | 10 | | | 0.012 | 0.3 | | A. Lothes. |
| Posen | 29.32 | 744.7 | 29.60 | 751.9 | 55.4 | 13.0 | 57 | W | | | 6 | | 10 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.08 | 738.5 | 29.61 | 752.2 | 57.4 | 14.1 | 52 | S | | | 2 | | 5 | N | | 0.130 | 3.31 | | Imp. University Observatory. |
| Stuttgart | 28.67 | 728.3 | 29.60 | 751.8 | 55.0 | 12.8 | 52 | SW | | | 1 | | 8 | N | | 0 | 0 | | Prof. Schoder. |
| Treves (Trier) | 29.02 | 737.2 | 29.54 | 750.3 | 58.6 | 14.8 | 51 | SW | | | 6 | | 5 | | | 0.035 | 0.9 | | Prof. Flesch. |
| Weissenburg (Bavaria) | 28.14 | 714.7 | 29.65 | 753.0 | 50.9 | 10.5 | 53 | W | 4 | 2 | | | 6ck | WNW | WNW | 0.039 | 1.0 | Hazy | Dr. Van Bebber |
| Wustrow, Naval School | 29.51 | 749.5 | 29.53 | 750.1 | 39.9 | 4.4 | 89 | W | | | 3 | | 10s | | | 0.764 | 19.4 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.35 | 745.5 | 29.74 | 755.4 | 65.7 | 17.6 | | SE | | | 1.0 | | | | | | | Sprinkling | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.81 | 757.1 | 29.86 | 758.3 | 87.2 | 30.7 | 34 | SSW | | | | 3 | | | | 0 | 0 | D. clouds | |
| Deesa | | | | | 96.5 | 35.8 | 10 | WNW | 6.8 | 3.0 | | 2 | WSW | | | 0 | 0 | D. clouds | |
| Bombay | 29.81 | 757.2 | 29.85 | 758.2 | 82.5 | 28.1 | 77 | NW | 20 | 8.9 | | 0 | | | | 0 | 0 | Blue sky | |
| Poona | 27.86 | 707.5 | 29.81 | 757.1 | 92.3 | 33.5 | 25 | WNW | | | | 0 | | | | 0 | 0 | Blue sky | |
| Lahore | 29.04 | 737.6 | 29.77 | 756.1 | 89.1 | 31.7 | 11 | NW | 3.7 | 1.6 | | 0 | | | | 0 | 0 | Blue sky | |
| Belgaum | 27.30 | 693.5 | 29.77 | 756.1 | 91.0 | 32.8 | 56 | W | 15 | 6.7 | | 4 | E | E | | | | Thunder-storm. | |
| Roorkee | 28.86 | 733.1 | 29.74 | 755.3 | 92.2 | 33.4 | 12 | SE | 3.3 | 1.5 | | 1 | | | | 0.01 | 0.3 | D. clouds | |
| Agra | 29.23 | 742.3 | 29.77 | 756.2 | 95.6 | 35.3 | 12 | NW | | | | | | | | 0 | 0 | | |
| Nagpur | 28.72 | 729.4 | 29.72 | 754.8 | 102.5 | 39.2 | 18 | NW | 6.1 | 2.7 | | 1 | | | | 0 | 0 | Blue sky | |
| Lucknow | 29.38 | 746.1 | 29.74 | 755.4 | 94.6 | 34.8 | 51 | WNW | 1.3 | 0.6 | | 0 | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.44 | 747.7 | 29.74 | 755.4 | 98.9 | 37.2 | 26 | Calm | 2.7 | 1.2 | | 7 | | | | 0 | 0 | D. clouds | |
| Patna | 29.50 | 749.3 | 29.67 | 753.7 | 100.2 | 37.9 | 19 | NW | 2.4 | 1.1 | | 0 | | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.75 | 704.9 | 29.70 | 754.3 | 94.8 | 34.9 | 38 | NNW | 6.2 | 2.8 | | 0 | | | | 0 | 0 | Blue sky | |
| Cuttack | 29.72 | 754.9 | 29.80 | 757.0 | 88.1 | 31.2 | 67 | S | 10 | 4.5 | | 6 | | | | 0 | 0 | | |
| Calcutta (Alipore) | 29.74 | 755.4 | 29.76 | 755.9 | 85.2 | 29.6 | 77 | SW | 10.0 | 4.5 | | 7 | SW | | | 0 | 0 | D. clouds | |
| Goalpara | 29.29 | 744.0 | 29.68 | 753.8 | 87.9 | 31.1 | 62 | Calm | 6.0 | 2.7 | | 10 | | | | 0.77 | 19.6 | Thunder-storm. | |
| Chittagong | 29.75 | 755.7 | 29.84 | 758.0 | 84.8 | 29.3 | 77 | S | 7.0 | 3.1 | | 1 | | | | 0 | 0 | Misty | |
| Sibsagar | 29.47 | 748.5 | 29.81 | 757.1 | 73.6 | 23.1 | 93 | NE | 2.1 | 0.9 | | 10 | E | E | | 0.80 | 20.3 | Gloomy | |
| Jubbulpore | 28.40 | 721.4 | 29.72 | 754.8 | 98.6 | 37.0 | 16 | Calm | 3.3 | 1.5 | | 0 | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation. Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected or instrum'tal error and temperature. Inches. | Barometer. Corrected or instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.15 | 740.3 | 29.56 | 750.7 | 61.5 | 16.4 | 36 | E | 1.8 | 0.8 | ..... | ..... | 6 | ..... | ..... | 0.154 | 3.9 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.06 | 738.2 | 29.58 | 751.3 | 59.0 | 15.0 | 47 | WSW | ..... | ..... | 2 | ..... | 3 | E | ..... | 0.079 | 2.0 | ..... | Prof. Schiaparelli. |
| Padua | 29.44 | 747.9 | 29.56 | 750.7 | 60.3 | 15.7 | 52 | NW | 6.9 | 3.1 | ..... | ..... | 9 | WNW | ..... | 0.315 | 8.0 | ..... | Prof. Dott. Lorenzoni. |
| Moncalieri | 28.70 | 728.9 | 29.60 | 751.7 | 57.9 | 14.4 | 46 | SW | 1.8 | 0.8 | ..... | ..... | 4 | NNE | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.43 | 747.5 | 29.62 | 752.3 | 59.4 | 15.2 | 62 | SW | 5.6 | 2.5 | ..... | ..... | 2 | SW | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.70 | 703.6 | 29.60 | 751.9 | 54.3 | 12.4 | 41 | NW | ..... | ..... | 2 | ..... | 4 | S | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.54 | 750.2 | 29.59 | 751.5 | 56.5 | 13.6 | 74 | N | 11.9 | 5.3 | ..... | ..... | 10 | W | ..... | 0.016 | 0.4 | ..... | Prof. Luigi Guidi. |
| Florence | 29.38 | 746.3 | 29.63 | 752.7 | 56.8 | 13.8 | 71 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.169 | 4.3 | ..... | Cav. F. Meucci |
| Leghorn | 29.54 | 750.4 | 29.63 | 752.5 | 59.5 | 15.3 | 65 | W | ..... | ..... | 6 | ..... | 4 | W | ..... | 0.142 | 3.6 | ..... | Prof. P. Monte. |
| Rome | 29.50 | 749.3 | 29.67 | 753.7 | 63.1 | 17.3 | 54 | W | 13.0 | 5.8 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.41 | 747.1 | 29.67 | 753.5 | 61.9 | 16.6 | 64 | NNW | 12.5 | 5.6 | ..... | ..... | 4 | W | ..... | 0.386 | 9.8 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.84 | 732.6 | 29.72 | 754.9 | 60.4 | 15.8 | 67 | NW | 6.3 | 2.8 | ..... | ..... | 10 | ..... | ..... | 0.287 | 7.3 | ..... | Prof. D. Conti. |
| Cagliari | 29.51 | 749.6 | 29.70 | 754.5 | 67.3 | 19.6 | 43 | S | ..... | ..... | 2 | ..... | 10 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.52 | 749.7 | 29.77 | 756.1 | 65.1 | 18.4 | 36 | WSW | 5.6 | 2.5 | ..... | ..... | 6 | WSW | ..... | 0.087 | 2.2 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.65 | 753.0 | 29.72 | 754.8 | 66.7 | 19.3 | 43 | W | 8.7 | 3.9 | ..... | ..... | 6 | SW | ..... | 0.039 | 1.0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.16 | 740.6 | 29.71 | 754.7 | 55.9 | 13.3 | 63 | SSW | 12.5 | 5.6 | ..... | ..... | 8 | ..... | ..... | 0.031 | 0.8 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.22 | 767.6 | 30.23 | 767.8 | 57.1 | 13.9 | 85 | Calm | 0.5 | 0.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.96 | 761.0 | 30.16 | 766.0 | 65.2 | 18.4 | 67 | SE | 1.2 | 0.5 | ..... | ..... | 10s | ..... | ..... | 0.010 | 0.25 | Cloudy | S. Takehayashi. |
| Tokei, (Yeddo) Observatory | 30.25 | 768.3 | 30.32 | 770.1 | 59.3 | 15.2 | 84 | S | 8.2 | 3.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.05 | 636.3 | 30.20 | 767.0 | 46.0 | 7.8 | 40 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear... | Prof. L. Perez. |
| Leon | 24.41 | 620.0 | 30.08 | 764.1 | 59.4 | 15.2 | 79 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.08 | 586.2 | 30.06 | 763.4 | 55.4 | 13.0 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy... | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 51.4 | 10.8 | 41 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Pleasant | M. V. de Leon, M. E. |
| Tlacotalpam | 29.85 | 758.1 | 29.86 | 758.4 | 73.8 | 23.2 | 87 | S | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. M. Chàzaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | 22.50 | 571.5 | 30.11 | 764.9 | 56.3 | 13.5 | 31 | W | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear... | J. Castrillon. |
| Puebla, (Catholic Institu e) | 23.39 | 594.1 | 30.15 | 765.9 | 50.0 | 10.0 | 54 | NNE | 0.4 | 0.2 | ..... | 1 | 0 | W | ..... | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.37 | 720.5 | 30.05 | 763.3 | 69.8 | 21.0 | 48 | NE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 507.3 m., or 1,664.4 ft. The data are published as given, except the conversions, which have been revised; the instrumental correction —0.88 mm., has been applied at this office to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.54 | 750.3 | 29.54 | 750.3 | 55.8 | 13.2 | ..... | ESE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.008 | 0.2 | ..... | |
| Groningen | 29.54 | 750.2 | 29.59 | 751.6 | 42.8 | 6.0 | ..... | NW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.256 | 6.5 | ..... | |
| Helder | 29.58 | 751.2 | 29.58 | 751.2 | 43.3 | 6.3 | ..... | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.54 | 750.3 | 29.54 | 750.3 | 53.2 | 11.8 | 65 | ESE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.53 | 750.1 | 29.58 | 751.3 | 54.6 | 12.3 | 59 | SSE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Light clouds | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.48 | 748.9 | 29.54 | 750.3 | 44.2 | 6.8 | 60 | SW | 12.3 | 5.5 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.57 | 751.1 | 29.61 | 752.1 | 33.4 | 0.8 | 81 | S | 18 | 8 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.40 | 746.8 | 29.55 | 750.5 | 49.8 | 9.9 | 37 | SW | 4 | 2 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.53 | 750.1 | 29.58 | 751.2 | 34.9 | 1.6 | 84 | SW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Rain & snow | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra (Azores) | 30.02 | 762.5 | 30.21 | 767.4 | 62.6 | 17.0 | 92 | S. | 4.2 | 1.9 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.02 | 737.0 | 30.04 | 763.0 | 62.1 | 16.7 | 59 | WNW | 15.0 | 6.7 | ..... | ..... | 9 | WNW | ..... | 0.240 | 6 1 | ..... | Dr. A.M. R. dos Santos. |
| Funchal (Madeira) | 30.15 | 765.9 | 30.24 | 768.1 | 66.7 | 19.3 | 63 | SW | 6.9 | 3.1 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.79 | 756.7 | 30.15 | 765.9 | 60.1 | 15.6 | 64 | NW | 17.4 | 7.8 | ..... | ..... | 8 | SW | ..... | 0.055 | 1.4 | ..... | The Staff. |
| Ponta Delgada (Azores) | 30.17 | 766.2 | 30.24 | 768.0 | 71.2 | 21.8 | 66 | W | 5.6 | 2.5 | ..... | ..... | 5 | ..... | ..... | 0.016 | 0.4 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0— | Sea or swell. Direction from | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| Duque da Terceira, San Jose de Bissao, Senegambia | ..... | ..... | 30.04 | 763.0 | 74.3 | 23.5 | ..... | W | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | ..... | Blue sky | C.C.da Fonseca Ferreira, Comd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, S. 4° 44′, E. 10° 45′ | ..... | ..... | 29.85 | 758.3 | 83.3 | 28.5 | ..... | SW | ..... | ..... | 1 | ..... | 3 | ..... | SW | 2 | SW | D clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa, San Jose de Bissao, Senegambia | ..... | ..... | 29.90 | 759.5 | 79.2 | 26.2 | ..... | WSW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 1 | ..... | Blue sky | A. Ferreira, 2d Lt |
| Sá da Bandeira | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 29.94 | 760.5 | 74.3 | 23.5 | ..... | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | ..... | Blue sky | J. M. T. Guimaraes, Com'd't. |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.15 | 740.3 | 29.56 | 750.7 | 62.6 | 17.0 | 52 | SW | 7 | 3 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.17 | 741.0 | 29.58 | 751.2 | 64.9 | 18.3 | 44 | WSW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.28 | 743.6 | 29.52 | 749.7 | 55.0 | 12.5 | 78 | W | 2 | 1 | ..... | ..... | 6k | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.54 | 750.4 | 29.56 | 750.8 | 38.3 | 3.5 | 93 | E | 11 | 5 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Raining | Central Physical Obs. |
| Kieff | 29.07 | 738.4 | 29.68 | 753.8 | 71.4 | 21.9 | 42 | SSW | 18 | 8 | ..... | ..... | 3cs | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Nikolaiev | 29.81 | 757.2 | 29.88 | 759.0 | 69.6 | 20 9 | 39 | SSW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.81 | 757.1 | 29.83 | 757.6 | 63.3 | 17.4 | 87 | ESE | 4 | 2 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.19 | 741.3 | 29.71 | 754.6 | 71.2 | 21.8 | 43 | S | 9 | 4 | ..... | ..... | 2ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.70 | 754.5 | 29.90 | 759.5 | 74.3 | 23.5 | 38 | SE | 4 | 2 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.67 | 753.7 | 29.69 | 754.2 | 37.6 | 3.1 | 68 | WSW | 9 | 4 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.52 | 724.2 | 29.88 | 758.9 | 72.0 | 22.2 | 37 | ESE | 13 | 6 | ..... | ..... | 4cs | ..... | ..... | ..... | ..... | Light clouds | Physical Observatory. |
| Astrakhan | 30.04 | 763.1 | 29.96 | 761.0 | 75.4 | 24.1 | 28 | SSE | 2 | 1 | ..... | ..... | 1cs | ..... | ..... | ..... | ..... | Light clouds | Capt. Wisganow. |
| Krotkowo* | 29.48 | 748.9 | 29.94 | 760.5 | 67.5 | 19.7 | 45 | SSW | 2 | 1 | ..... | ..... | 9k | ..... | ..... | ..... | ..... | Heavy clouds | Cand. Fatjanow. |
| Kasan | 29.64 | 752.8 | 29.90 | 759.5 | 59.2 | 15.1 | 67 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 28.84 | 732.5 | 29.79 | 756.6 | 55.8 | 13.2 | 81 | SW | 27 | 12 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.69 | 754.2 | 29.91 | 759.8 | 85.3 | 29.6 | 50 | SSE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Dust-haze | |
| Tashkend | 28.48 | 723.5 | 29.98 | 761.5 | 78.8 | 26.0 | 31 | Calm | 0. | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Light clouds | Teich, A. M. |
| Barnaul | 29.44 | 747.8 | 29.92 | 760.0 | 67.1 | 19.5 | 34 | SW | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseïsk | 29.58 | 751.2 | 29.87 | 758.7 | 38.8 | 3.8 | 73 | ESE | 16 | 7 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking (China) | 29.90 | 759.4 | 30.04 | 763.0 | 54.5 | 12.5 | 91 | Calm | 0 | 0 | ..... | ..... | 9n | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.96 | 761.1 | 30.06 | 763.6 | 44.4 | 6.9 | 67 | NE | 4 | 2 | ..... | ..... | 8n | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.61 | 752.2 | 29.72 | 754.8 | 68.0 | 20 | 55 | SW | 5.9 | 2.64 | ..... | ..... | 1k | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 29.79 | 756.6 | 29.54 | 758.0 | 62.6 | 17.0 | 93 | NW | 2.5 | 1.10 | ..... | 3 | 6 | NW | ..... | 0.157 | 4.0 | Almost cov'd | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.88 | 682.8 | ..... | ..... | 51.8 | 11.0 | 73 | SW | 12.1 | 5.40 | ..... | ..... | 5 | ..... | ..... | 0.138 | 3.5 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.66 | 702.5 | ..... | ..... | 63.0 | 17.2 | 51 | W | 28.4 | 12.67 | ..... | 1 | 4 | ..... | ..... | Inap. | Inap. | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.67 | 753.5 | 29.70 | 754.3 | 69.6 | 20.9 | 36 | NNW | 4.0 | 1.81 | ..... | 3 | 4 | ESE | ..... | 0 | 0 | ..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.06 | 638.2 | 29.57 | 751.0 | 54.9 | 12.7 | 69 | NW | 18.1 | 8.1 | ..... | ..... | 8 | ..... | ..... | 0.260 | 6.6 | Sprinkling | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.11 | 764.8 | 30.18 | 766.4 | 75.9 | 24.4 | 64 | E | 8.7 | 3.9 | ..... | 1c | 1k | ..... | ..... | 0 | 0 | ..... | Benito Vines, S. J |
| Manilla, Philippine Islands | 29.76 | 755.8 | 29.81 | 757.2 | 85.3 | 29.6 | 79 | SSW | 8.3 | 3.7 | ..... | 1 | 3 | NE | SW | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.05 | 763.3 | 30.16 | 766.8 | 62.8 | 17.1 | 76 | WNW | 11.9 | 5.3 | ..... | 0 | 8 | ..... | NW | 0.020 | 0.5 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W.I | 29.94 | 760.6 | 30.04 | 762.9 | 76.3 | 24.6 | 86 | SE | 0 | 0 | ..... | 6k | 6k | SE | SE | 2.077 | 52.75 | Cloudy | Leonardo de Tejeda, Ch'f Eng'r. |

Note.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.59 | 751.5 | 29.63 | 752.5 | 34.5 | 1.4 | ..... | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.60 | 751.9 | 29.65 | 753.2 | 34.9 | 1.6 | 66 | SW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.58 | 751.3 | 29.63 | 752.6 | 36.5 | 2.5 | 58 | S | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.31 | 744.5 | 29.49 | 749.0 | 31.6— | 0.2 | 78 | N | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.28 | 743.6 | 29.34 | 745.1 | 39.9 | 4.4 | 90 | NE | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.114 | 2.9 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.50 | 749.2 | 29.57 | 751.1 | 32.4 | 0.2 | 84 | NE | 14.3 | 6.4 | ..... | ..... | 10 | ..... | NE | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.22 | 716.7 | 29.63 | 752.7 | 57.2 | 14.0 | 85 | S | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | Cloudy..... | The Observatory. |
| Zurich | 28.01 | 711.6 | 29.64 | 752 8 | 57.6 | 14.2 | 46 | W | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | Fair..... | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —7.7 mm.; Thermometer, +0.9 Cent.; Relative Humidity,—22 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,338.6 feet, and that of Zurich 470 m., or 1,542.0 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.72 | 755.0 | 76.8 | 24.9 | 31 | S | 4 | 2.0 | ..... | ..... | 6 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.20 | 767.0 | 87.8 | 31.0 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.76 | 755.9 | 64.9 | 18.3 | ..... | SW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0.28 | 7. | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut. (Syria,) Lee Obs'y | 29.74 | 755.4 | 29.85 | 758.3 | 70.3 | 21.3 | 70 | NW | ..... | ..... | 2 | ..... | 9ks | ..... | NW | 0 | 0 | D clouds..... | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.83 | 757.7 | 29.90 | 759.4 | 39.3 | 4.1 | 86 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.88 | 758.9 | 30.19 | 766.8 | 51 | 10.6 | ..... | NW | 5 | 2.2 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy ..... | W. R. Bigg. |
| *Chatham, N. B | 29.80 | 756.9 | 29.86 | 758.4 | 48 | 6.1 | 51 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | .0 | 0 | Cloudy ..... | G. A. Blair. |
| Charlottetown, P. E. Island | 29.83 | 757.7 | 29.87 | 758.7 | 38 | 3.3 | 72 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy..... | H J. Cundall, C. E. |
| Cornwall, Ontario | 29.93 | 760.2 | 30.12 | 765.0 | 50.1 | 10.1 | 54 | NW | ..... | ..... | 2 | 6cs | 4s | NW | ..... | 0.05 | 1 3. | Cloudy..... | James Smith, M. A. |
| Dalhousie, N. B | 29.74 | 755.4 | 29.90 | 759.4 | 38 | 3.3 | ..... | W | ..... | ..... | 2 | ..... | 10n | ..... | ..... | ..... | ..... | Raining ..... | H. A. Johnson. |
| Esquimault, B. C | 30.24 | 768.1 | 30.28 | 769.1 | 43.2 | 6.2 | 92 | W | 4 | 1.8 | ..... | 1cs | 0 | ..... | ..... | 0 | 0 | Clear ..... | W. H. Bevis. |
| *Father Point, Quebec | 29.97 | 761.2 | 29.99 | 761.7 | 35 | 1.7 | 95 | NE | 36 | 16.1 | ..... | ..... | 10s | ..... | NE | 0.25 | 6.3 | Sleeting ..... | J. McWilliams. |
| Fredericton, N. B | 29.83 | 757.7 | 29.90 | 759.4 | 35.3 | 1.8 | 95 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.47 | 11.9 | Raining ..... | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.35 | 745.5 | 30.19 | 766.8 | 45 | 7.2 | 88 | E | 6 | 2.7 | ..... | 5k | 5n | E | NE | 0.020 | 0.51 | Cloudy..... | James Stewart. |
| Granton, Ontario | 29.17 | 740.9 | 30.27 | 768.8 | 58 | 11.7 | ..... | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | James Grant. |
| *Halifax, N. S | 29.75 | 755.6 | 29.89 | 759.2 | 40 | 4.4 | 81 | W | 3 | 1.3 | ..... | ..... | 10n | ..... | SW | 0 | 0 | Cloudy..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.93 | 760.2 | 30.30 | 769.6 | 55.7 | 13.2 | 61 | SW | ..... | ..... | 1 | 10cs | 0 | SW | ..... | 0 | 0 | Cloudy..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.85 | 758.2 | 30.20 | 767.1 | 44 | 6.7 | 81 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.85 | 758.2 | 29.89 | 759.2 | 37.7 | 3.2 | 83 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Overcast..... | C. H. Rigby. |
| Moose Factory, Ontario | 30.56 | 776.2 | 30.60 | 777.2 | 33.0 | 0.6 | 78 | N | ..... | ..... | 3 | 6k | 0 | ..... | ..... | Inap. | Inap. | ..... | J. R. Nason. |
| *Montreal, Quebec | 29.88 | 758.9 | 30.08 | 764.0 | 49 | 9.4 | 56 | NW | 23 | 10.3 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.64 | 752.8 | 30.35 | 770.9 | 43 | 6.1 | 83 | N | 15 | 6.7 | ..... | 5k | 5n | NW | NW | 0.09 | 2.3 | Cloudy ..... | Rev. R. Mosly. |
| Peterboro, Ontario | 29.49 | 749.0 | 30.25 | 768.3 | 49.7 | 9.8 | 70 | W | ..... | ..... | 3 | ..... | 10n | ..... | ..... | 0 | 0 | Overcast .... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.57 | 751.1 | 30.27 | 768.8 | 51 | 10.6 | 65 | Calm | 0 | 0 | ..... | 10ck | 0 | NW | ..... | 0 | 0 | Fair..... | H. Morgan. |
| Port Hastings, N. S | 29.84 | 757.9 | 29.89 | 759.2 | 38.0 | 3.7 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine..... | Peter Grant. |
| Port Stanley, Ontario | 29.63 | 752.6 | 30.28 | 769.1 | 49 | 9.4 | 69 | W | 3 | 1.3 | ..... | 5ck | Haze | NW | ..... | 0 | 0 | Hazy. ..... | M. Payne. |
| *Quebec, Quebec | 29.72 | 754 9 | 30.04 | 763.0 | 45 | 7.2 | 68 | N | ..... | ..... | 5 | 0 | 2ks | ..... | N | 0 | 0 | Fair..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.87 | 758.7 | 30.34 | 770.6 | 43 | 6.1 | 69 | N | 5 | 2.2 | ..... | ..... | 5s | ..... | N | 0 | 0 | Fair..... | W. H. McIntyre. |
| St. Andrews, N. B | 29.84 | 757.9 | 29.89 | 759.2 | 39 | 3.9 | 91 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | 0.17 | 4.3 | Light rain... | Dr. Gove. |
| St. John, N. B | 29.74 | 755.4 | 29.90 | 759.4 | 40 | 4.4 | 82 | SW | 3 | 1.3 | ..... | ..... | 10n | ..... | ..... | 0.28 | 7.1 | Light rain... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.60 | 751.8 | 30.32 | 770.1 | 49 | 9.4 | 70 | NE | 7 | 3.1 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy ..... | K. Stewart. |
| Stayner, Ontario | 29.53 | 750.0 | 30.33 | 770.4 | 47 | 8.3 | 70 | NW | 11 | 4.9 | ..... | ..... | 10n | ..... | NW | 0 | 0 | Threatening | R. J. Cole. |
| Stratford, Ontario | 29.98 | 736 1 | 30.27 | 768.8 | 49.0 | 9.4 | 64 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Overcast.... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.88 | 758.9 | 29.92 | 760.0 | 39 | 3.9 | 61 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy..... | T. C. Hill. |
| *Toronto, Ontario | 29.91 | 759.7 | 30.29 | 769.4 | 55 | 12.8 | 45 | N | 12 | 5.4 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy..... | Magnetic Observatory. |
| Windsor, N. S | 29.78 | 756.4 | 29.87 | 758.7 | 39.0 | 3.9 | 82 | W | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast..... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 33.0 | 0.6 | 89 | E | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.06 | 1.5 | Overcast..... | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'r 0—10. | Clouds. Amount. Lw'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.87 | 758.7 | 30.10 | 764.5 | 53 | 11.7 | 36 | W | 20 | 8.9 | | | 10ks | | W | 0 | 0 | Cloudy | |
| Alpena, Michigan | 29.73 | 755.1 | 30.39 | 771.9 | 50 | 10.0 | 45 | NE | 12 | 5.4 | | 0 | Haze | | | 0 | 0 | Hazy | |
| Atlanta, Georgia | 29.25 | 742.9 | 30.40 | 772.1 | 63 | 17.2 | 51 | E | 3 | 1.3 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 30.21 | 767.3 | 30.23 | 767.8 | 57 | 13.9 | 52 | W | 12 | 5.4 | | 0 | 5s | | W | 0 | 0 | Fair | |
| Augusta, Georgia | 30.28 | 769.1 | 30.46 | 773.7 | 54 | 12.2 | 87 | Calm | 0 | 0 | | 0 | Sm'e | | Calm | 0 | 0 | Clear | |
| Baltimore, Maryland | 30.22 | 767.6 | 30.27 | 768.8 | 59 | 15.0 | 43 | W | 4 | 1.8 | | Haze | Sm'e | | Calm | 0 | 0 | Smoky | |
| Barnegat, New Jersey | 30.15 | 765.8 | 30.18 | 766.6 | 52 | 11.1 | 73 | W | 16 | 7.2 | | 10cs | 0 | W | | 0 | 0 | Cloudy | |
| Bismarck, Dakota | 28.11 | 714.0 | 29.96 | 761.0 | 47 | 8.3 | 100 | N | 4 | 1.8 | | | 10n | | NE | 0.76 | 19.6 | Light rain | |
| Boerne, Texas | 28.49 | 723.6 | 29.77 | 756.1 | 66 | 18.9 | 100 | E | 6 | 2.7 | | | 10s | | SE | 0.71 | 18.0 | Threatening | |
| Boise City, Idaho | 27.31 | 693.7 | 30.27 | 768.8 | 38 | 3.3 | 63 | SE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Boston, Massachusetts | 29.82 | 757.4 | 29.98 | 761.5 | 55 | 12.8 | 39 | W | 14 | 6.3 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Brackettville, Texas | 28.77 | 730.7 | 29.79 | 756.7 | 57 | 13.9 | 100 | NW | 8 | 3.6 | | | 10n | | Calm | 2.76 | 70.1 | Heavy rain | |
| Breckenridge, Minnesota | 28.96 | 735.6 | 29.94 | 760.5 | 56 | 13.3 | 69 | E | 7 | 3.1 | | | 10ks | | SE | 0.36 | 9.1 | Cloudy | |
| Brownsville, Texas | 29.83 | 757.7 | 29.87 | 758.7 | 78 | 25.6 | 78 | SE | 8 | 3.6 | | 8k | 0 | SE | | 0 | 0 | Fair | |
| Buffalo, New York | 29.57 | 751.1 | 30.30 | 769.6 | 42 | 5.6 | 74 | SW | 5 | 2.2 | | 10cs | Haze | NW | Calm | 0 | 0 | Cloudy | |
| Burkes, Arizona | | | | | 56 | 13.3 | 24 | Calm | | | 0 | 0 | 0 | | | 0 | 0 | Clear | |
| Burlington, Vermont | 29.75 | 755.6 | 30.04 | 763.0 | 49 | 9.4 | 64 | W | 10 | 4.5 | | | 10s | | Calm | 0.01 | 0.3 | Cloudy | |
| Cairo, Illinois | 29.94 | 760.5 | 30.33 | 770.4 | 71 | 21.7 | 49 | S | 8 | 3.6 | | 0 | Sm'e | | | 0 | 0 | Clear | |
| Camp Apache, Arizona | | | | | | | | | | | | | | | | | | | |
| Camp Grant, Arizona | 25.16 | 639.0 | 29.96 | 761.0 | 48 | 8.9 | 43 | N | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Camp Verde, Arizona | | | | | 49 | 9.4 | 51 | NW | | | 2 | 0 | 0 | | | 0 | 0 | Clear | |
| Campo, California | 27.42 | 696.5 | 29.99 | 761.7 | 33 | 0.6 | 70 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.36 | 771.1 | 30.37 | 771.4 | 61 | 16.1 | 77 | SW | 11 | 4.9 | | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Cape Henry, Virginia | 30.27 | 768.8 | 30.29 | 769.4 | 59 | 15.0 | 70 | S | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.30 | 771.1 | 30.38 | 771.6 | 62 | 16.7 | 77 | SW | 16 | 7.2 | | 2c | Haze | NW | | 0 | 0 | Fair | |
| Cape May, New Jersey | 30.18 | 766.6 | 30.21 | 767.3 | 50 | 10.0 | 79 | W | 8 | 3.6 | | | 10s | | S | 0.23 | 5.8 | Threatening | |
| Castroville, Texas | 29.15 | 740.4 | 29.83 | 757.7 | 69 | 20.6 | 95 | S | 8 | 3.6 | | 0 | Fog | | Calm | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.36 | 771.1 | 30.42 | 772.6 | 69 | 15.6 | 82 | N | 3 | 1.3 | | | 10s | | Calm | 0.19 | 4.8 | Threatening | |
| Cheyenne, Wyoming | 23.96 | 608.6 | 29.90 | 759.4 | 33 | 0.6 | 89 | N | 15 | 6.7 | | Haze | Haze | | | 0 | 0 | Hazy | |
| Chicago, Illinois | 29.56 | 750.8 | 30.25 | 768.3 | 62 | 16.7 | 46 | S | 6 | 2.7 | | 0 | Sm'fg | | Calm | 0 | 0 | Clear | |
| Cincinnati, Ohio | 29.72 | 754.9 | 30.38 | 771.6 | 51 | 10.6 | 72 | SE | 2 | 0.9 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Cleveland, Ohio | 29.58 | 751.3 | 30.30 | 769.6 | 59 | 15.0 | 38 | S | 7 | 3.1 | | | | | | | | | |
| Coleman City, Texas | | | | | | | | | | | | | Fog | | Calm | 0 | 0 | Foggy | |
| Columbus, Ohio | 29.50 | 749.3 | 30.36 | 771.1 | 49 | 9.4 | 71 | Calm | 0 | 0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Concho, Texas | 28.05 | 712.5 | 29.69 | 754.1 | 58 | 14.4 | 82 | N | 4 | 1.8 | | | 10s | | Calm | 6.68 | 169.7 | Cloudy | |
| Corsicana, Texas | 29.59 | 751.6 | 30.06 | 763.5 | 59 | 15.0 | 94 | S | 4 | 1.8 | | 5cs | 0 | Calm | | 0 | 0 | Fair | |
| Davenport, Iowa | 29.55 | 750.6 | 30.18 | 766.6 | 63 | 17.2 | 57 | SE | 7 | 3.1 | | | 10n | | S | 2.35 | 59.7 | Heavy rain | |
| Deadwood, Dakota | 25.29 | 642.4 | | | 35 | 1.7 | 100 | S | 2 | 0.9 | | | 8s | | W | 0.20 | 5.1 | Cloudy | |
| Decatur, Texas | 28.79 | 731.3 | 29.94 | 760.5 | 60 | 15.6 | 82 | W | 8 | 3.6 | | 0 | 2s | | SE | 2.10 | 53.3 | Fair | |
| Denison, Texas | 29.26 | 743.2 | 30.05 | 763.3 | 59 | 15.0 | 88 | SE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Denver, Colorado | 24.74 | 628.4 | 29.96 | 761.0 | 35 | 1.7 | 90 | S | 8 | 3.6 | | 2cs | 2s | W | SW | 0 | 0 | Fair | |
| Des Moines, Iowa | 29.21 | 741.9 | 30.07 | 763.8 | 62 | 16.7 | 61 | S | 9 | 4.0 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Detroit, Michigan | 29.60 | 751.8 | 30.28 | 769.1 | 51 | 10.6 | 53 | SW | 3 | 1.3 | | | 10s | | S | 0.17 | 4.3 | Cloudy | |
| Dodge City, Kansas | 27.40 | 696.0 | 29.66 | 753.4 | 52 | 11.1 | 93 | SE | 12 | 5.4 | | | 10s | | Calm | 0 | 0 | Hazy | |
| Dubuque, Iowa | 29.49 | 749.0 | 30.17 | 766.3 | 64 | 17.8 | 63 | S | 2 | 0.9 | | Haze | Haze | Calm | NE | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 29.60 | 751.8 | 30.30 | 769.6 | 40 | 4.4 | 82 | NE | 28 | 12.5 | | | 10s | | SE | 0.07 | 1.8 | Cloudy | |
| Eagle Pass, Texas | 29.07 | 738.4 | 29.79 | 756.7 | 71 | 21.7 | 90 | SE | 6 | 2.7 | | | 10s | | W | 0.18 | 4.6 | Light rain | |
| Eastport, Maine | 29.52 | 757.4 | 29.89 | 759.2 | 40 | 4.4 | 86 | SW | 3 | 1.3 | | | 10n | | S | 0 | 0 | Cloudy | |
| Edinburg, Texas | | | | | 70 | 21.1 | 90 | S | | | 6 | | 10s | | | 0 | 0 | Clear | |
| El Paso, Texas | 26.21 | 665.7 | | | 40 | 4.4 | 56 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.57 | 751.1 | 30.28 | 769.1 | 58 | 14.4 | 42 | SW | 7 | 3.1 | | 2c | Sm'e | NW | Calm | 0 | 0 | Fair | |
| Escanaba, Michigan | 29.66 | 753.4 | 30.34 | 770.6 | 40 | 4.4 | 73 | N | 16 | 7.2 | | 10ck | 0 | NW | | 0 | 0 | Cloudy | |
| Florence, Arizona | 28.44 | 722.4 | 30.04 | 763.0 | 56 | 13.3 | 24 | SE | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Buford, Dakota | 28.07 | 713.0 | | | 40 | 4.4 | 91 | NE | 4 | 1.8 | | | 10s | | NE | 0.30 | 7.6 | Cloudy | |
| Fort Craig, New Mexico | 25.51 | 647.9 | 29.68 | 751.3 | 42 | 5.6 | 35 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.15 | 638.8 | 30.11 | 764.8 | 52 | 11.1 | 11 | N | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.54 | 750.3 | 30.07 | 763.8 | 60 | 15.6 | 94 | S | 8 | 3.6 | | 5cs | 0 | S | | 1.30 | 33.0 | Fair | |
| Fort Griffin, Texas | 28.71 | 729.2 | 29.97 | 761.2 | 56 | 13.3 | 94 | Calm | 0 | 0 | | | 10s | | Calm | 0.18 | 4.6 | Cloudy | |
| Fort Keogh, Montana | 27.51 | 698.7 | | | 42 | 5.6 | 91 | Calm | 0 | 0 | | | 10s | | Calm | 0.28 | 7.1 | Cloudy | |
| Fort McKavett, Texas | 27.67 | 702.8 | 29.62 | 749.8 | 65 | 18.3 | 84 | E | 8 | 3.6 | | | 10s | | E | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | 29.44 | 747.8 | 29.48 | 748.8 | 33 | 0.6 | 100 | S | 46 | 20.6 | | | 10s | | Calm | Inap. | Inap. | Cloudy | |
| Fort Sill, Indian Territory | 28.81 | 731.8 | 29.90 | 759.4 | 60 | 15.6 | 88 | SE | 14 | 6.3 | | | 10s | | SE | 1.99 | 50.5 | Cloudy | |
| Fort Stevenson, Dakota | 27.75 | 704.8 | | | 40 | 4.4 | 100 | NE | 20 | 8.9 | | | 10n | | Calm | 0.60 | 15.2 | Heavy rain | |
| Fredericksburg, Texas | 28.27 | 718.0 | 29.80 | 756.9 | 63 | 17.2 | 100 | SW | 5 | 2.2 | | | 10n | | Calm | 1.33 | 33.8 | Heavy rain | |
| Galveston, Texas | 30.02 | 762.5 | 30.06 | 763.5 | 72 | 22.2 | 85 | E | 18 | 8.0 | | | 10s | | SE | Inap | Inap. | Cloudy | |
| Graham, Texas | 28.90 | 734.0 | 29.83 | 760.2 | 61 | 16.1 | 94 | Calm | 0 | 0 | | 0 | 0 | | | 1.03 | 26.2 | Clear | |
| Grand Haven, Michigan | 29.62 | 752.3 | 30.26 | 768.6 | 65 | 18.3 | 35 | S | 16 | 7.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.53 | 750.0 | 30.31 | 769.9 | 59 | 15.0 | 59 | Calm | 0 | 0 | | 5cs | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Indianola, Texas | 29.97 | 761.2 | 29.99 | 761.7 | 73 | 22.8 | 90 | SE | 18 | 8.0 | | 8c | 0 | SW | | Inap. | Inap. | Fair | |
| Jacksboro, Texas | 28.89 | 733.8 | 30.01 | 762.2 | 62 | 16.7 | 88 | SE | 4 | 1.8 | | | 10s | | SE | 1.85 | 47.0 | Cloudy | |
| Jacksonville, Florida | 30.38 | 771.6 | 30.40 | 772.1 | 68 | 20.0 | 65 | NE | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.52 | 749.8 | 30.13 | 765.3 | 63 | 17.2 | 62 | S | 7 | 3.1 | | 5c | 0 | W | | 0 | 0 | Fair | |
| Key West, Florida | 30.18 | 766.6 | 30.22 | 767.6 | 73 | 22.8 | 72 | NE | 14 | 6.3 | | 1k | 0 | NE | | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 30.30 | 769.6 | 30.32 | 770.1 | 58 | 14.4 | 76 | SW | 12 | 5.4 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.43 | 747.5 | 30.46 | 773.7 | 56 | 13.3 | 69 | Calm | 0 | 0 | | 0 | Haze | | | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 29.41 | 747.0 | 30.13 | 765.3 | 61 | 16.1 | 66 | S | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.06 | 661.9 | 30.21 | 767.3 | 35 | 1.7 | 70 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Cloudy | |
| Laredo, Texas | 29.45 | 748.0 | 29.77 | 756.1 | 78 | 25.6 | 69 | S | 9 | 4.0 | | | 10ks | | S | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.24 | 742.7 | 30.07 | 763.8 | 60 | 15.6 | 77 | SE | 7 | 3.1 | | | 8ks | | SW | Inap. | Inap. | Cloudy | |
| Los Angeles, California | 29.65 | 753.1 | 29.99 | 761.7 | 50.0 | 10.0 | 65 | NE | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Louisville, Kentuckey | 29.78 | 756.4 | 30.34 | 770.6 | 60 | 15.6 | 55 | E | 1 | 0.4 | | 0 | Sm'e | | Calm | 0 | 0 | Smoky | |
| Lynchburg, Virginia | 29.64 | 752.8 | 30.33 | 770.4 | 55 | 12.8 | 56 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Madison, Wisconsin | 29.22 | 742.2 | 30.20 | 767.1 | 58 | 14.4 | 70 | SE | 6 | 2.7 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Marquette, Michigan | 29.65 | 753.1 | 30.38 | 771.6 | 42 | 5.6 | 66 | Calm | 0 | 0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Mason, Texas | 28.36 | 720.3 | 30.07 | 763.8 | 66 | 18.9 | 79 | E | 1 | 0.4 | | | 10n | | SE | 0.84 | 21.3 | Light rain | |
| Memphis, Tennessee | 29.97 | 761.2 | 30.29 | 769.4 | 67 | 19.4 | 56 | S | 4 | 1.8 | | 2c | 0 | Calm | | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.51 | 749.5 | 30.23 | 767.8 | 59 | 15.0 | 59 | SW | 3 | 1.3 | | 0 | Sm'e | | | 0 | 0 | Clear | |
| Mobile, Alabama | 30.28 | 769.1 | 30.32 | 770.1 | 67.5 | 19.7 | 76 | SE | 10 | 4.5 | | | 10s | | SE | 0 | 0 | Cloudy | |
| Montgomery, Alabama | 30.17 | 766.3 | 30.40 | 772.1 | 63 | 17.2 | 67 | SE | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Morgantown, West Virginia | 29.26 | 743.2 | 30.34 | 770.6 | 51 | 10.6 | 59 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Mt. Washington, N. H. | 23.52 | 597.4 | 29.88 | 758.9 | 25 | — 3.9 | 100 | NW | 78 | 34.9 | | | 10n | | NW | 0.07 | 1.8 | Light snow | |
| Nashville, Tennessee | 29.86 | 758.4 | 30.40 | 772.1 | 61 | 17.8 | 53 | Calm | 0 | 0 | | 0 | Sm'e | | | 0 | 0 | Clear | |
| New Haven, Connecticut | 29.97 | 761.2 | 30.08 | 764.0 | 58 | 14.4 | 48 | W | 3 | 1.3 | | 8cs | Haze | Calm | Calm | 0 | 0 | Cloudy | |
| New London, Connecticut | 30.04 | 763.0 | 30.09 | 764.3 | 52 | 11.1 | 60 | SW | 4 | 1.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| New Orleans, Louisiana | 30.16 | 766.1 | 30.22 | 767.6 | 70 | 21.1 | 80 | E | 17 | 7.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Newport, Rhode Island | 30.01 | 762.2 | 30.06 | 763 5 | 53 | 11.7 | 61 | SW | 11 | 4.9 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| New York, New York | 29.98 | 761.5 | 30.16 | 766.1 | 52 | 11.1 | 53 | SW | 6 | 2.7 | | 5ck | 2s | NW | Calm | 0 | 0 | Fair | |
| Norfolk, Virginia | 30.25 | 768.3 | 30.31 | 769.9 | 59 | 15.0 | 65 | SW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |

## UNITED STATES SERIES.—Continued.

| STATIONS | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 26.94 | 684.3 | 29.46 | 748.3 | 49 | 9.4 | 82 | S | 40 | 17.9 | ..... | 8k | 2s | SW | S | 0.25 | 6.3 | Cloudy | |
| Olympia, Washington Ter. | 30.26 | 768.6 | 30.30 | 769.6 | 50.0 | 10.0 | 86 | W | 1 | 0.4 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 28.90 | 734.0 | 29.97 | 761.2 | 62 | 16.7 | 67 | S | 12 | 5.4 | ..... | 10k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Oswego, New York | 29.90 | 759.4 | 30.24 | 768.1 | 44 | 6.7 | 84 | NW | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.12 | 3.0 | Light rain | |
| Pembina, Dakota | 29.28 | 743.7 | 30.11 | 764.8 | 46 | 7.8 | 100 | NE | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Light rain | |
| Philadelphia, Pa | 30.16 | 766.1 | 30.21 | 767.3 | 58 | 11.7 | 67 | SW | 4 | 1.8 | ..... | 6cs | Sm'e | N | Calm | 0 | 0 | Fair | |
| Phœnix, Arizona | 28.74 | 730.0 | 30.55 | 776.0 | 54 | 12.2 | 43 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.62 | 447.5 | 29.83 | 757.7 | 10 | —12.2 | 100 | SE | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | 0.22 | 5.6 | Light snow | |
| Pioche, Nevada | 24.10 | 612.1 | 29.87 | 758.7 | 42 | 5.6 | 34 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.58 | 750.0 | 30.37 | 771.4 | 42 | 5.6 | 83 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Port Huron, Michigan | 29.61 | 752.1 | 30.27 | 768.8 | 58 | 11.7 | 42 | NE | 8 | 3.6 | ..... | 10k | Sm'e | W | ..... | 0 | 0 | Cloudy | |
| Portland, Maine | 29.85 | 758.2 | 29.90 | 759.4 | 48 | 8.9 | 68 | NW | 4 | 1.8 | ..... | 8k | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Portland, Oregon | 30.27 | 768.8 | 30.37 | 771.4 | 48.5 | 9.2 | 89 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Prescott, Arizona | 24.69 | 627.1 | 30.05 | 763.3 | 37 | 2.8 | 53 | E | 1 | 0.4 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Pilot Point, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Punta Rassa, Florida | 30.29 | 769.4 | 30.31 | 769.9 | 67 | 19.4 | 60 | NE | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Red Bluff, California | 29.71 | 754.6 | 30.07 | 763.8 | 62 | 16.7 | 61 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rio Grande City, Texas | 29.69 | 754.1 | 29.90 | 759.4 | 74 | 23.3 | 81 | SE | 16 | 7.2 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Rochester, New York | 29.62 | 752.3 | 30.24 | 768.1 | 53 | 11.7 | 73 | NW | 9 | 4.0 | ..... | ..... | 10n | ..... | NW | 0.01 | 0.3 | Light rain | |
| Roseburg, Oregon | 29.76 | 755.9 | 30.36 | 771.1 | 41.0 | 5.0 | 95 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sacramento, California | 29.92 | 760.0 | 30.00 | 762.0 | 58 | 14.4 | 64 | NE | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.69 | 754.1 | 30.25 | 768.3 | 69 | 20.6 | 39 | S | 11 | 4.9 | ..... | 2c | Sm'e | Calm | ..... | 0 | 0 | Fair | |
| St. Marks, Florida | 30.37 | 771.4 | 30.38 | 771.6 | 63 | 17.2 | 72 | SE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.22 | 742.2 | 30.04 | 763.0 | 58 | 14.4 | 58 | Calm | 0 | 0 | ..... | 1cs | Haze | Calm | ..... | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.67 | 652.0 | 30.00 | 762 0 | 44 | 6.7 | 52 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.27 | 743 4 | 29.83 | 757.7 | 69 | 20.6 | 95 | E | 2 | 0.9 | ..... | ..... | 10s | ..... | E | 2.09 | 53.1 | Cloudy | |
| San Diego, California | 29.95 | 760.7 | 30.02 | 762.5 | 47 | 8.3 | 85 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.64 | 752.8 | 30.32 | 770.1 | 58 | 14.4 | 42 | SW | 11 | 4.9 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Sandy Hook, New Jersey | 30.18 | 766.6 | 30.21 | 767.3 | 53 | 11.7 | 61 | W | 17 | 7.6 | ..... | 5c | Haze | NW | Calm | 0 | 0 | Hazy | |
| San Francisco, California | 29.95 | 760.7 | 30.01 | 762.2 | 53.9 | 12.2 | 80 | W | 2 | 0.9 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| Santa Fé, New Mexico | 23.24 | 590.3 | 29.78 | 756.4 | 32 | 0.0 | 69 | SE | 5 | 2.2 | ..... | 1cs | 0 | NW | ..... | 0.13 | 3.3 | Clear | |
| Savannah, Georgia | 30.34 | 770 6 | 30.44 | 773.2 | 62 | 16.7 | 83 | N | 1 | 0.4 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Shreveport, Louisiana | 29.94 | 760.5 | 30.16 | 766.1 | 64 | 17.8 | 83 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Silver City, New Mexico | 24.26 | 616.2 | 30.54 | 775.7 | 38 | 3.3 | 63 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.40 | 772.1 | 30.44 | 773.2 | 61 | 16.1 | 66 | NW | 6 | 2.7 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.94 | 760.5 | 30.07 | 763.8 | 57 | 18.9 | 47 | W | 4 | 1.8 | ..... | 0 | 8s | ..... | W | 0 | 0 | Cloudy | |
| Stockton, Texas | 29.91 | 683.5 | 29.91 | 759.7 | 62 | 16.7 | 46 | Calm | 0 | 0 | ..... | 8k | 0 | SE | ..... | 0 | 0 | Cloudy | |
| Thatcher's Island, Mass | 29.90 | 759.4 | 29.95 | 760.7 | 52 | 11.1 | 60 | W | 23 | 10.3 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Toledo, Ohio | 29.61 | 752 1 | 30.29 | 769.4 | 59 | 15.0 | 48 | W | 9 | 4.0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| Tucson, Arizona | 27.50 | 698.5 | 30.05 | 763.3 | 49 | 9.4 | 43 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.88 | 758.9 | 30.38 | 771.6 | 45.0 | 7.2 | 84 | E | 8 | 3.6 | ..... | 0 | 2ks | ..... | W | 0 | 0 | Fair | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 40 | 4.4 | 82 | S | ..... | ..... | 2 | ..... | 10n | ..... | SW | 0 | 0 | Cloudy | |
| Uvalde, Texas | 29.05 | 737.9 | 29.80 | 758.4 | 61 | 16.1 | 88 | W | 5 | 2.2 | ..... | ..... | 10n | ..... | E | 0.68 | 17.3 | Light rain | |
| Vicksburg, Mississippi | 30.06 | 763.5 | 30.32 | 770.1 | 64 | 17.8 | 73 | SE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Virginia City, Montana | 24.39 | 619.5 | 29.87 | 758.7 | 36 | 2.2 | 53 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.62 | 752.3 | 29.99 | 761.7 | 53.5 | 11.9 | 70 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 30.16 | 766.1 | 30.28 | 769.1 | 54 | 12.2 | 67 | W | 1 | 0.4 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 58 | 11.7 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.33 | 770.4 | 30.40 | 772.1 | 63 | 17.2 | 57 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.80 | 655.3 | 30.16 | 766.1 | 30 | — 1.1 | 68 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass | 29.97 | 761.2 | 30.01 | 762.2 | 47 | 8.3 | 69 | W | 25 | 11.2 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy | |
| Yankton, Dakota | 28.68 | 728.5 | 29.94 | 760.5 | 57 | 13.9 | 75 | S | 16 | 7.2 | ..... | 10cs;ck | 0 | S;SW | ..... | 0.03 | 0.8 | Cloudy | |
| Yuma, Arizona | 29.73 | 755.1 | 29.89 | 759.2 | 55 | 12.8 | 50 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.56 | 725.4 | 29.95 | 760.7 | 60 | 15.6 | 70 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.10 | 764.5 | 30.15 | 765.8 | 76 | 24.4 | 50 | NE | 4.8 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbr nk. |
| Kingston, Jamaica, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A. | 25.22 | 640.6 | ..... | ..... | 65.0 | 18.3 | 82 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | 0.82 | 20.8 | ..... | Thomas Herran. |
| Navassa, W. I. | 29.96 | 761 0 | 30.04 | 763.0 | 78 | 25.6 | ..... | NE | 25 | 11.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 29.99 | 761 7 | 29.99 | 761.7 | 81 | 27.2 | 83 | E | ..... | ..... | 3 | 5c | 7ks | E | ..... | 0 | 0 | Cloudy | O. J. Hering. |
| Santiago de Cuba, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A. | 30.23 | 767.8 | 30.28 | 769.1 | 36.0 | 2.2 | 95 | S | 14 | 6.3 | ..... | ..... | 9s | ..... | SW | 0 | 0 | Cloudy | J. Fortescue & W. Wood. |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,037.6 ft., or 313.3 m.: Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,160. 7 ft.,or 4,313.1 m.; Pioche, 5,776.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.8 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,336.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.98 | 761.5 | 54 | 12.2 | 56 | 13.3 | 81 | SW | 5 | 2.2 | .... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 30.45 | 773.4 | 68 | 20.0 | 68 | 20.0 | 79 | E | 27 | 12.1 | ..... | ..... | 5 | ..... | E | 0 | 0 | ..... | ..... | Fair ..... | |
| Navy Yard, Portsmouth, N.H | 29.98 | 761.5 | 62 | 16.7 | 46 | 7.8 | 54 | WSW | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Overcast.... | |
| Naval Hospital, Yokohama, Japan.....* | 30.29‡ | 769.4‡ | ..... | ..... | 59.4 | 15.2 | 82 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0" | 0 | ..... | ..... | Clear..... | |
| Adams, Panama .....* | 29.96 | 761.0 | 79 | 26.1 | 79 | 26.1 | 95 | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Fair..... | |
| Alaska, N. 49° 22′, W. 124° 08′ | 30.30‡ | 769.6‡ | ..... | ..... | 45 | 7.2 | 84 | NW | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Blue sky.... | |
| Alliance, Palermo, Sicilly..... | 29.77‡ | 756.1‡ | ..... | ..... | 64 | 17.8 | 53 | NNW | ..... | .... | 2-3 | ..... | 3 | ..... | S;W | ..... | ..... | ..... | ..... | Pleasant.... | |
| Ashuelot, Hong-Kong, China. ...* | 29.92‡ | 760.0‡ | ..... | ..... | 72 | 22.2 | 85 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Light haze.. | |
| Canonicus, New Orleans, La.....* | 30.25 | 768.3 | 51 | 10.6 | 70 | 21.1 | 85 | SE | ..... | ..... | 6 | ..... | 8 | ..... | SE | ..... | ..... | ..... | ..... | Fair..... | |
| Colorado, New York, N. Y..... | 30.20 | 767.1 | 59 | 15.0 | 57 | 13.9 | 47 | SW | 10 | 4.5 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Pleasant.... | |
| Constitution N. 24° 48′, W. 27° 24′..... | 30.18‡ | 766.6‡ | ..... | ..... | 72 | 22.2 | 90 | NE | ..... | ... | 4 | ..... | 2 | ..... | NE | ..... | ..... | Smooth | NE | Clear..... | |
| Despatch, Genoa, Italy..... | 29.62‡ | 752.3‡ | ..... | ..... | 67 | 19.4 | 50 | W | ..... | ..... | 1 | ..... | 5 | ..... | SW | ..... | ..... | Smooth | ..... | Fair ..... | |
| Essex, Montevideo, Uruguay.* | 30.12 | 765.0 | 64 | 17.8 | 62 | 16.7 | 88 | NNW | ..... | ..... | 3 | ..... | 2 | ..... | N | ..... | ..... | Smooth | E | Fair..... | |
| Franklin, Norfolk, Va.....* | 30.44 | 773.2 | 65 | 18.3 | 58 | 14.4 | 76 | S | 7 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Gettysburg, Genoa, Italy .....* | 29.67‡ | 753.6‡ | ..... | ..... | 70 | 21.1 | 80 | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Hartford, Buenos Ayres, S. A.....* | 30.10 | 764 5 | 67 | 19.4 | 69 | 20.6 | 65 | NNE | ..... | ..... | 4 | ..... | 8? | ..... | ..... | 0 | 0 | Smooth | ..... | Clear?..... | |
| Michigan, Erie, Pa.....† | 30.03‡ | 764.3‡ | ..... | ..... | 57 | 13.9 | 58 | WSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast.... | |
| Monocacy, Shanghai, China.....* | 29.98‡ | 761.5‡ | ..... | ..... | 68 | 20.0 | 90 | SE | ..... | ..... | 3 | ..... | 2 | ..... | SE | ..... | ..... | ..... | ..... | Fair..... | |
| Monongahela N. 29° 03′, E. 146° 24′.....* | 30.28‡ | 769.1‡ | ..... | ..... | 65 | 18.3 | 84 | ENE | ..... | ..... | 4 | ..... | kn | ..... | N;E | Light | Light | Light | N;E | D. clouds.... | |
| New Hampshire, Port Royal, S. C.....* | 30.51 | 774.9 | 72 | 22.2 | 69 | 20.6 | 80 | NNE | 6 | 2.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Onward, Callao, Peru.....†* | 30.07 | 763.8 | ..... | ..... | 62 | 16.7 | 94 | Var. | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Smooth | W | Foggy ..... | |
| Palos, N. 36° 47′, E. 122° 38′..... | 30.04 | 763.0 | 56 | 13.3 | 47 | 8.3 | ?? | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Smooth | ..... | Rainy..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 55 | 12.8 | 87 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Pensacola. S. 14° 46′, W. 76° 07′..... | 30.01‡ | 762.2‡ | ..... | ..... | 67 | 19.4 | 95 | SE | 11 | 4.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair..... | |
| Plymouth. Portsmouth, N. H ..... | 29.95‡ | 760.7‡ | ..... | ..... | 47 | 8.3 | 62 | WNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Portsmouth, Hampton Roads, Va..... | 30.29‡ | 769.4‡ | ..... | ..... | 57 | 13.9 | 75 | SW | ..... | ..... | 3 | ..... | 2 | ..... | Calm | 0 | 0 | Slight | S;W | Misty..... | |
| Powhatan, Norfolk, Va ..... | 30.25‡ | 768.3‡ | ..... | ..... | 59 | 15.0 | 70 | SSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Quinnebaug, N. 37° 25′, E. 6° 54′..... | 29.82‡ | 757.4‡ | ..... | ..... | 66 | 18.9 | 89 | W | ..... | ..... | 3 | ..... | 10 | ..... | W | ..... | ..... | Smooth | ..... | Raining..... | |
| Ranger. N. 23° 17′, E 119° 40′..* | 29.78‡ | 756.4‡ | ..... | ..... | 78 | 25.6 | 86 | NW | ..... | ..... | 2 | ..... | 8 | ..... | Calm | ..... | ..... | Long swell | NE | Cloudy..... | |
| Richmond. N. 5° 55′, E. 93° 06′..... | 29.85‡ | 758.2‡ | ..... | ..... | 84 | 28 9 | 83 | NW | ..... | ..... | 1 | ..... | 2 | ..... | NW | 0 | 0 | Long | NW | Clear ..... | |
| Rio Bravo, Brownsville, Texas..... | 29.91 | 759.7 | 75 | 23.9 | 75 | 23.9 | 95 | SE | ..... | ..... | 2 | ..... | 5 | ..... | S | ..... | ..... | ..... | ..... | Fair..... | |
| Santee, Annapolis, Md... ..... | 30.24‡ | 768.1‡ | ..... | ..... | 60 | 15.6 | 45 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Saratoga, Horta Bay, Fayal, Azores. | 30.20‡ | 767.1‡ | ..... | ..... | 62 | 16.7 | 83 | NE | ..... | ..... | 2 | ..... | 10 | ..... | Calm | Slight | Slight | Smooth | ..... | Hazy..... | |
| St. Louis, League Island, Pa ..... | 30.15 | 765.8 | 63 | 17.2 | 53 | 11.7 | 54 | WSW | 6 | 2.7 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Fair..... | |
| Trenton Villafranca, France...* | 29.59‡ | 751.6‡ | ..... | ..... | 68 | 20.0 | 60 | ESE | ..... | ..... | 1 | ..... | 2 | ..... | Calm | 0 | 0 | Mod'ate | S | Fair ..... | |
| Tuscarora. Port Sacrificios, Mex..* | 30.01‡ | 762.2‡ | ..... | ..... | 75 | 23.9 | 77 | SW | ..... | ..... | 1 | ..... | 5 | ..... | Calm | 0 | 0 | Long | S;W | Hazy..... | |
| Vandalia N. 28° 10′, W. 73° 42′... | 30.35‡ | 770.9‡ | ..... | ..... | 67 | 19.4 | 74 | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Mod'ate | E | Clear..... | |
| Wabash, Boston, Mass..... | 30.06‡ | 763.5‡ | ..... | ..... | 54 | 12.2 | 74 | NW | 10 | 4.5 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Wyoming, Athens, Greece.....* | 29.70‡ | 754.4‡ | ..... | ..... | 62 | 16.7 | 100 | SE | ..... | ..... | 2-5 | ..... | 10 | ..... | SE | ..... | ..... | Smooth | SE | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Upper | Lower | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From — | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| S. S. Samaria, Capt. T. Roberts, N. 42° 13′, W. 52° 14′....† | | | 29.81 | 767.2 | 45 | 7.2 | | NNE | | | 3 | | 0 | | | Mod'ate | NNW | Clear | M. C. Miles. |

NOTE.—†Aneroid.

## PACIFIC MAIL S. S. CO. MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | |
| §S.S. City of Tokio Capt. Maury N. 34° 29′, E. 147° 19′ | | 30.16‡ | 766.1‡ | 62 | 16.7 | | W | | | 5 | | 5k | | W | 0 | Mod'ate | NW | Blue sky | L. B. Walls. |
| S. S. Colima. N. 25° 00′, W. 112° 44′...† | | 29.96‡ | 760.7‡ | 61 | 16.1 | | NW | | | 3 | | 0 | | | 0 | Small | NNW | Misty | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitelaw. |
| S. S. Dakota, Capt. H. G. Morse, | | | | | | | | | | | | | | | | | | | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Granada, Capt. Austin. | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, Sydney, N. S. W. | | 30.08‡ | 764.0‡ | | | | W | | | 1 | | 0 | | | | | | Fine | R. C. Ghest, 1st Officer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office. §The date of the S. S. City of Tokio is uncertain, and may be in error one day.

## WHITE STAR LINE MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer. N. 36° 46′, W. 140° 44′ | | 30.21‡ | 767.3‡ | 60 | 15.6 | 88 | SSW | | | 4 | | kn | | | Blank | Light | SW | D. clouds | D. A. Joyce. |
| S. S. Gaelic, N. 48° 09′, W. 142° 10′ | | 30.48‡ | 774.2‡ | 45 | 7.2 | | N | | | 5 | | k | | N | Blank | Swell | N | D. clouds | Capt. W. H. Kidley. |
| S. S. Oceanic, Capt. J. Metcalf, | | | | | | | | | | | | | | | | | | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the S. S. Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the co-operation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andreesen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 42° 51′, W. 50° 07′ | | 29.80‡ | 759.2‡ | | | | NNW | | | 5 | | 8 | | NW | | Long | NW | Cloudy | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Corrections for temperature instrumental error and elevation applied at this office.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward. | Barometer reduced to sea-level. Inches. | Barometer reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. L'w'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. | Sea-swell. Character. | Sea-swell. Direction From— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AMERICAN S. S. CO. MARINE SERIES.** Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, St George's Channel, Eng. | ..... | 29.49‡ | 749.0‡ | 49 | 9.4 | ..... | E | ..... | ..... | 3 | ..... | 8 | ..... | E | Mod'ate | Smooth | ..... | Cloudy..... | Captain Sargent. |
| S. S. Ohio | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. H. Dodge. |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud-direction as toward instead of from; sea-swell in general terms, as published; rain-fall for Indiana and Ohio in general terms. ‡Correction for temperature and elevation applied at this office.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RED STAR LINE MARINE SERIES.** Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Nederland | ... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Randle. |
| S. S. Switzerland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jackson. |
| S. S. Vaderland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Nichols. |
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| **ALLAN LINE MARINE SERIES.** Furnished by the co-operation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Austrian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Richardson. |
| S. S. Hibernian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Powell, 4th Officer. |
| S. S. Peruvian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Anéroid. *The error of the barometer is not known. ‡Correction for temperature and elevation applied at this office.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MARINE SERIES. (Miscellaneous.)** Furnished by the co-operation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller, Rockport, Me | ..... | 29.92‡ | 760.0‡ | 44 | 6.7 | 100 | Calm | 0 | 0 | .. .... | ..... | 10n | ..... | Calm | ..... | ..... | ..... | Light rain... | Capt. James Jorgensen. |
| Brigantine "George of Halifax" | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Willard N. Pratt. |
| Schooner Harry and Fred, N. 37° 50', W. 70° 56' | ..... | 30.20‡ | 767.1‡ | ..... | ..... | ..... | W | 20 | 8.9 | ..... | ..... | 2 | ..... | W | 0 | Smooth | NW | Fair | Capt. George Gardner. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Correction for temperature and elevation applied at this office.

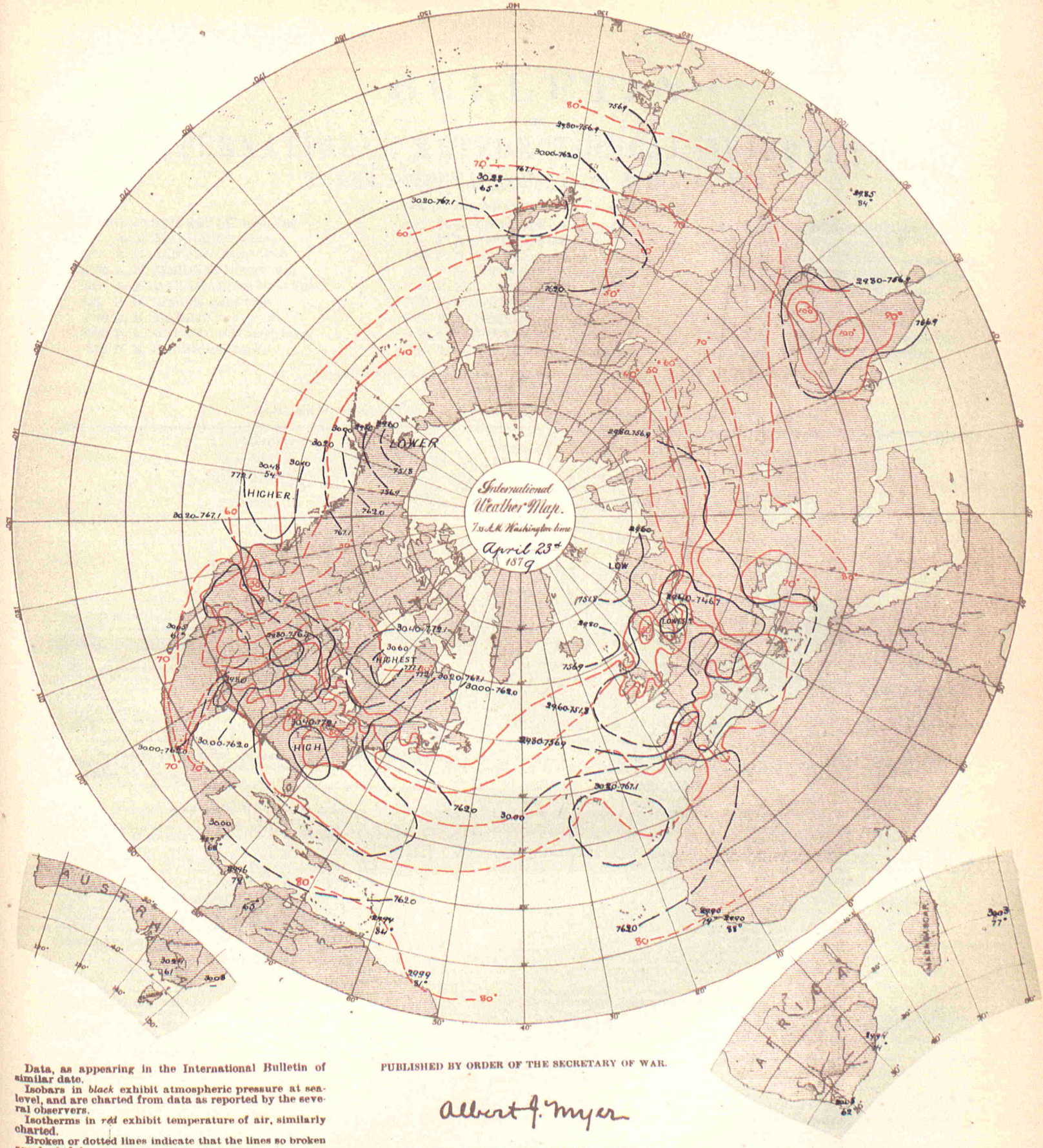
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively by the letters c, k, s, n, d, f, p, hz., fg. and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 24, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 30.23 | 767.7 | 67.1 | 19.5 | 74 | WNW | | | 2 | | 2 | | | 0 | 0 | Fair | Kesxuche. |
| Algiers | | | 30.04 | 762.9 | 62.2 | 16.8 | 58 | NW | | | 6 | | 0 | | | 0.028 | 0.7 | Clear | Tourilliere. |
| La Calle | | | 29.86 | 758.3 | 62.6 | 17.0 | 73 | NW | | | 4 | | 10 | | | 0.646 | 16.4 | Covered | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 29.89 | 759.2 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 30.15 | 765.9 | 59.0 | 15.0 | 39 | NW | | | 6 | | 8 | | | 0 | 0 | Very cloudy | Herbin. |
| Tebessa | | | 29.93 | 760.3 | 48.9 | 9.4 | 31 | NNW | | | 7 | | 8 | | | 0.272 | 6.9 | Very cloudy | Watrin. |
| Geriville | | | 30.07 | 763.7 | 64.9 | 18.3 | 45 | NW | | | 4 | | 2 | | | 0 | 0 | Fair | Brugniaux. |
| Laghouat | | | 30.04 | 762.9 | 65.5 | 18.6 | 38 | NW | | | 6 | | 0 | | | 0 | 0 | Clear | Bertrand. |
| Biskra | | | 29.95 | 760.7 | 68.9 | 20.5 | 37 | WNW | | | 5 | | 8 | | | 0 | 0 | Very cloudy | Chanvaux. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—In the originals the amount of cloudiness is given by the scale 0-4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

## AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.02 | 737.0 | 29.56 | 750.9 | 49.5 | 9.7 | 74 | Calm | | | 0 | | 10 | | | 0.177 | 4.5 | Raining | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 28.84 | 732.4 | 29.60 | 751.9 | 47.1 | 8.4 | 97 | NNW | | | 1 | | 10 | | | 0.472 | 12.0 | | Dr. Wierzbiski. |
| Eperies | 28.62 | 727.0 | 29.48 | 748.9 | 54.3 | 12.4 | 94 | NW | | | 1 | | 10k | | W | 0.362 | 9.20 | | Julius Mikolik. |
| Gratz | 28.32 | 719.4 | 29.55 | 750.6 | 57.6 | 14.2 | 46 | NW | | | 4 | | 8 | | | 0.047 | 1.2 | | Andreas Rospini. |
| Hermannstadt | 28.11 | 713.9 | 29.45 | 748.0 | 73.2 | 22.9 | 59 | S | | | 4 | | 8 | | | 0 | 0 | | Prof. A. Gottschling. |
| Kremsmünster | 28.32 | 719.3 | 29.66 | 753.0 | 51.6 | 10.9 | 62 | NW | | | 1 | | 10 | | | 0 | 0 | | Prof. C. Wagner. |
| Lemberg | 28.52 | 724.4 | 29.47 | 748.4 | 65.3 | 18.5 | 60 | S | | | 2 | | 8 | | | 0.063 | 1.6 | | Dr. T. Stanecki. |
| Pola | 29.51 | 749.5 | 29.62 | 752.3 | 61.2 | 16.2 | 68 | S | | | 1 | | 3 | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.12 | 739.6 | 29.58 | 751.3 | 54.0 | 12.2 | 91 | SW | | | 3 | | 9 | | | 0.197 | 5.0 | | Julius Csics, S. J. |
| Szegedin | 29.21 | 741.9 | 29.49 | 749.0 | 53.2 | 11.8 | 81 | S | | | 3 | | 10 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 29.54 | 750 2 | 29.64 | 752.8 | 59.0 | 15.0 | 72 | W | | | 1 | | 3 | | | 0 | 0 | Almost clear | P. Busin. |
| Vienna | 28.93 | 734.9 | 29.05 | 753.2 | 46.0 | 7.8 | 90 | N | | | 2 | | 10 | | | 0.291 | 7.4 | | I. R. Central Met. Obs'y |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

## BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.64 | 760.2 | 29.74 | 755.3 | 52.7 | 11.5 | 85 | SW | | | 1 | | 10 | | SW | 0.118 | 3.00 | | Royal Observatory. |
| Furnes | 29.77 | 756.2 | 29.80 | 756.8 | 49.6 | 9.7 | 89 | WNW | | | 2 | | 10 | | | 0.020 | 0.5 | Raining | M. E. de Cae. |
| Maeseyck | 29.63 | 752.5 | 29.75 | 755.7 | 53.2 | 11.8 | 89 | W | | | 2 | | 10 | | | 0.232 | 5.9 | | M. Pierrot. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

**Entered at the Post Office at Washington, D. C., as Second-Class Matter.**

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.92 | 760.0 | 30.02 | 762.5 | 40.0 | 4.4 | ..... | E | 12 | 5.4 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | Overcast | W. Boswell. |
| Ardrossan | 29.91 | 759.7 | 29.93 | 760.2 | 45 | 7.2 | ..... | E | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Foggy | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.96 | 761.0 | 47.0 | 8.3 | ..... | NE | 14 | 1.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.92 | 760.0 | 48.2 | 9.0 | ..... | WNW | 16 | 7.2 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.90 | 759.4 | 46.4 | 8.0 | ..... | E | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | Thomas Mackereth. |
| Bradford, Yorkshire | 29.53 | 760.0 | 29.92 | 760.0 | 43.5 | 6.4 | ..... | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.52 | 13.2 | Overcast | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.89 | 759.2 | 29.92 | 760.0 | 83 | 28.3 | ..... | NE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.86 | 758.4 | 50.1 | 10.1 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | H. Todd. [C. |
| Cardington | ..... | ..... | 29.87 | 758.7 | 49.0 | 9.4 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.74 | 755.4 | 29.87 | 758.7 | 46.1 | 7.8 | ..... | Calm | ..... | ..... | 0 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.38 | 720.8 | 29.87 | 758.7 | 45.0 | 7.2 | ..... | NW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | Drizzling | Alexander Watt. |
| Donaghadee | 29.92 | 760.0 | 29.96 | 761.0 | 47 | 8.3 | ..... | NNE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 29.83 | 757.7 | 29.85 | 758.2 | 47 | 8.3 | ..... | NNE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | J. Costello. |
| Falmouth, Observatory | 29.78 | 756.4 | 30.01 | 762.2 | 52.3 | 11.3 | ..... | NW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| Fort Napier, (Natal) | 27.87 | 707.9 | 30.18 | 766.1 | 69.0 | 20.6 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.68 | 753.9 | 29.91 | 759.7 | 88 | 31.1 | ..... | S | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's college | ..... | ..... | ... | ..... | 55 | 12.8 | ..... | WSW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | Blue sky | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 30.18 | 766.6 | 30.24 | 768.1 | 67.1 | 19.5 | ..... | W | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.74 | 755.4 | 29.95 | 760.7 | 43.9 | 6.6 | ..... | NNE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | D. G. Maclean. [C. |
| Great Yarmouth | 29.84 | 757.9 | 29.85 | 758.2 | 43 | 6.1 | ..... | NNE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Raining | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.69 | 754.1 | 29.86 | 758.4 | 51.3 | 10.7 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The staff, for G.B. Airy |
| Guernsey | 29.72 | 754.9 | 29.94 | 760.5 | 53 | 11.7 | ..... | WNW | ..... | ..... | 5 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Dr. S.E.Hoskins, F.R.S |
| Helston | 30.07? | 763.5? | 30.19? | 766.8? | 53 | 11.7 | ..... | SW | ..... | ..... | 6 | ..... | 10ck | ..... | ..... | ..... | ..... | Raining | M. P. Moyle. |
| Holyhead | 29.93 | 760.2 | 29.98 | 761.5 | 47 | 8.3 | ..... | NNW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | John Tilston. |
| Jersey | 29.67 | 753.6 | 29.97 | 761.2 | 51.4 | 10.8 | ..... | WNW | ..... | ..... | 6 | ..... | 2 | ..... | ..... | Blank | Blank | D. clouds | J. Fisher. |
| Kew, Observatory | 29.82 | 757.4 | 29.86 | 758.4 | 51.4 | 10.8 | ..... | NE | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty | The Meteorological Of. |
| Leicester, Museum | 29.64 | 752.8 | 29.89 | 759.2 | 48.3 | 9.1 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.62 | 752.3 | 29.70 | 754.4 | 65 | 18.3 | ..... | NW | ..... | ..... | 3 | ..... | 3ks | ..... | ..... | ..... | ..... | Blue sky | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.69 | 759.2 | 29.98 | 761.5 | 42 | 5.6 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.18 | 766.6 | 74.5 | 23.6 | ..... | NE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.74 | 755.4 | 29.93 | 760.2 | 50.3 | 10.2 | ..... | NNE | ..... | ..... | 3 | ..... | 10k;d | ..... | WSW; NNE | 0.074 | 1.88 | Overcast | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.37 | 746.0 | 29.90 | 759.4 | 45.8 | 7.7 | ..... | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.91 | 759.7 | 47 | 8.3 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | H. E. Bellamy. |
| Plymouth | 29.88 | 758.9 | 29.95 | 760.7 | 54.9 | 12.7 | ..... | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Merrifield. |
| Roche's Point | 29.94 | 760.5 | 30.01 | 762.2 | 56 | 13.3 | ..... | NNW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ¼ clouded | Wm. Kennedy. |
| Saint Ann's Head | 29.79 | 756.7 | 29.95 | 760.7 | 51 | 10.6 | ..... | NW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 42 | 5.6 | ..... | NW | 11 | 4.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev C.Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.57 | 751.1 | 29.63 | 752.6 | 73.0 | 22.8 | ..... | ESE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | Blank | Blank | D. clouds | W. H. Lyne. |
| Sheffield | 29.64 | 752.8 | 29.92 | 760.0 | 45.4 | 7.4 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.01 | 0.3 | Overcast | W. F. Cooper. |
| Silloth Rectory | 29.91 | 759.7 | 29.94 | 760.5 | 41.5 | 5.3 | 91 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.100 | 2.54 | Raining | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.53 | 750.0 | 29.93 | 760.2 | 44.0 | 6.7 | ..... | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.62 | 752.3 | 29.84 | 757.9 | 47.7 | 8.7 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | C. H. Griffith, F. M. S. |
| Truro, Royal Institution | 30.04 | 763.0 | 30.07 | 763.8 | 57 | 13.9 | ..... | NW | ..... | ..... | 7 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | W. Newcombe. |
| Valencia, Observatory | 30.00 | 762.0 | 30.03 | 762.8 | 54.0 | 12.2 | ..... | W | 15 | 6.7 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.02 | 762.5 | 30.06 | 763.5 | 66.5 | 19.2 | 49 | W | 8 | 3.6 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Fine | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.04 | 763.0 | 60 | 15.6 | 88 | NW | ..... | ..... | 1 | ..... | 10k | ..... | ..... | Blank | Blank | Raining | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.97 | 761.2 | 42.0 | 5.6 | ..... | E | ..... | ..... | 3 | ..... | 10k | ..... | ..... | Blank | Blank | Overcast | Andrew Gibb. |
| Mauritius, Observatory | 29.87 | 758.7 | 30.06 | 763.6 | 75.1 | 25.6 | 71 | SSE | 3.0 | 1.3 | ..... | ..... | 8 | ..... | Var. | 0 | 0 | Cloudy | C. Meldrum. |
| Melbourne, Observatory | 30.15 | 765.8 | 30.24 | 768.1 | 66.6 | 19.7 | 71 | NE | 7 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Very fine | R. L. J. Ellery. |
| MonachLt-house, (Hebrides) | ..... | ..... | 29.97 | 761.2 | 44 | 6.7 | ..... | E | ..... | ..... | 6 | 3 | 0 | E | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.03 | 762.8 | 37 | 2.8 | ..... | NE | ..... | ..... | 4 | 2 | 4 | N | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

| British Marine Series. Vessels. | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 42′, E. 29° 25′ | ..... | ..... | D. clouds | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... |
| Brig Alliance | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle-Isle | ..... | ..... | ..... | Capt. A. J. Brown. |
| Ship British Commodore | ..... | ..... | ..... | Capt. J. W. Thorne. |
| —— City of Agra, | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | Capt. W.R. McMontry. |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have generally been carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.20 | 665.5 | 29.92 | 760.0 | 66.2 | 19.0 | 91 | SE | ..... | ..... | 1 | 4c;s | 1ks | E | ..... | 0.008 | 0.2 | ..... | Federico Maison |

NOTE.—For St. Jose the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches for an altitude of 1,145 meters, or 3,756.6 feet; the distinction between the upper and lower clouds is not always made; the rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.82 | 757.5 | 29.87 | 758.7 | 40.6 | 4.8 | 71 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 29.85 | 758.1 | 29.87 | 758.6 | 47.7 | 8.7 | 76 | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.85 | 758.2 | 29.89 | 759.3 | 34.0 | 1.1 | 81 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 30.02 | 762.4 | 30.05 | 763.3 | 36.0 | 2.2 | 51 | N | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.72 | 754.9 | 29.89 | 759.2 | 46.4 | 8.0 | 92 | NNW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.37 | 746.1 | 29.93 | 760.1 | 52.2 | 11.2 | 85 | NE | ..... | ..... | 2 | ..... | 8 | NW | N | 0.031 | 0.8 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 29.67 | 753.6 | 29.78 | 756.4 | 55.8 | 13.2 | 93 | WNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.047 | 1.2 | Covered | Bonvallet, Director. |
| Avignon, Normal School | 29.73 | 755.2 | 29.81 | 757.2 | 60.8 | 16 | 59 | N | ..... | ..... | 2 | ..... | 10 | ..... | N | 0.016 | 0.4 | Covered | Giraud, Director |
| Bar-sur-Seine | 29.24 | 742.8 | 29.80 | 756.8 | 55.2 | 12.9 | 63 | NW | ..... | ..... | 1 | ..... | 8kn | ..... | WNW | 0.362 | 9.2 | Very cloudy | G. Saillard, Director. |
| Beauvais, Normal School | 29.55 | 750.6 | 29.82 | 757.3 | 54.9 | 12.7 | 76 | W | ..... | ..... | ..... | ..... | 8 | ..... | NW | 0.030 | 0.75 | Very cloudy | Frere Eugene Marie, Dr |
| Besançon, Normal School | 28.94 | 735.1 | 29.84 | 757.8 | 50.2 | 10.1 | 88 | S | ..... | ..... | 4 | ..... | 10 | ..... | SW | 0.087 | 2.2 | Covered | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.00 | 736.5 | 29.91 | 759.6 | 53.1 | 11.7 | 83 | W | ..... | ..... | 1 | ..... | kn | S | S | 0.673 | 17.1 | ..... | Marlot, Director. |
| Bourges, Normal School | 29.31 | 744.5 | 29.87 | 758.6 | 50.4 | 10.2 | 89 | W | ..... | ..... | 3 | ..... | 10n | W | W | 0.571 | 14.5 | Raining | A. Waquet, Director |
| Brest, Naval Observatory | 29.76 | 755.9 | 30.00 | 762.1 | 59.4 | 15.2 | 48 | NW | ..... | ..... | 3 | ..... | 7k | ..... | NW | 0.039 | 1.00 | ..... | De Rermaree, Director |
| Carcassonne, Normal School | 29.55 | 750.6 | 29.96 | 761.1 | 55.4 | 13 | 68 | W | ..... | ..... | ..... | ..... | 5 | W | W | 0.331 | 8.4 | Cloudy | September, Director. |
| Caen, Normal School | 29.80 | 756.8 | 29.83 | 757.7 | 53.6 | 12 | 72 | NW | ..... | ..... | 3 | ..... | 10 | ..... | NW | 0.031 | 0.8 | Covered | Lair, Director. |
| Chartres, Normal School | 29.24 | 742.6 | 29.80 | 756.8 | 53.2 | 11.8 | 86 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | SE | 0.51 | 13. | Covered | Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.48 | 748.8 | 29.80 | 757.0 | 59.0 | 15.0 | 58 | W | ..... | ..... | 2 | ..... | 5 | W | W | 0 | 0 | Cloudy | Jadot, Director. |
| Clermont-Fd., Puy de D. Ob | 28.53 | 724.6 | 29.89 | 759.1 | 52.5 | 11.4 | 59 | WNW | ..... | ..... | 2 | ..... | 5 | ..... | WNW | 0.067 | 1.7 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.92 | 734.6 | 29.78 | 756.3 | 52.3 | 11.3 | 75 | NW | ..... | ..... | 1 | ..... | 5kn | ..... | NW | 0.083 | 2.1 | Cloudy | Dr. Coulet, Director. |
| Commune de Gréasque* | 28.64 | 727.5 | 29.78 | 756.5 | 55.9 | 13.3 | 59 | NW | ..... | ..... | 6 | ..... | 2 | ..... | NW | 0 | 0 | ¼ covered | L. Kina, Director. |
| Grenoble, Normal School | 29.13 | 739.8 | 29.90 | 759.5 | 48.2 | 9.0 | 58 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.256 | 6.50 | Raining | Ablard, Director |
| La Roche-sur-Yon, N. School | 29.79 | 756.6 | 30.01 | 762.2 | 60.8 | 16.0 | 59 | NNW | ..... | ..... | 1 | ..... | 5 | ..... | NNW | 0.331 | 8.4 | Cloudy | Mouillot, Director |
| Le Mans, Normal School | 29.61 | 752.0 | 29.91 | 759.8 | 52.2 | 11.2 | 77 | NW | ..... | ..... | 1 | ..... | 5 | ..... | NNW | 0.098 | 0.25 | Cloudy | Poirrier, Director |
| Lons-Le-Saulnier, N. School | 28.92 | 734.5 | 29.84 | 758.0 | 52.7 | 11.5 | 75 | ESE | ..... | ..... | 1 | ..... | 5k | ..... | NW | 0.307 | 7.80 | Cloudy | A. Baudry, Director. |
| Lorient, Naval Observatory | 29.94 | 760.5 | 30.04 | 763.0 | 56.8 | 13.8 | 60 | NW | ..... | ..... | 3 | ..... | ..... | ..... | NW | 0.110 | 2.8 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Galzin, Director. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff |
| Mirecourt, Normal School | 28.69 | 728.6 | 29.71 | 754.6 | 50.7 | 10.4 | 80 | W | ..... | ..... | 1 | ..... | 10 | ..... | SE | 0.08 | 2. | Raining | Barbier, Director. |
| Nismes, Normal School | 29.59 | 751.5 | 29.79 | 756.6 | 63.7 | 17.6 | 53 | NW | ..... | ..... | 4 | ..... | 5 | ..... | NW | 0 | 0 | Cloudy | Boyer, Director. |
| Privas, Normal School | 28.79 | 731.3 | 29.85 | 758.2 | 55.0 | 12.8 | 55 | N | ..... | ..... | 3 | ..... | ..... | N | N | 0.020 | 0.5 | ..... | Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.91 | 632.7 | ..... | ..... | 31.6 | — 0.2 | 100 | NW | ..... | ..... | 10 | ..... | 10 | ..... | ..... | 0.362 | 9.2 | Snow-fog | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.01 | 762.2 | 30.04 | 763.0 | 60.3 | 15.7 | 62 | W | ..... | ..... | 3 | ..... | 2 | WNW | WNW | 0 | 0 | ¼ covered | Lt. E. Decante, Director. |
| Rouen, Normal School | 29.78 | 756.3 | 29.86 | 758.5 | 50.9 | 10.5 | 86 | NW | ..... | ..... | 2 | ..... | 10 | ..... | NW | 0.051 | 1.3 | Covered | Frere Lucard, Director. |
| Saint Malo (Port), Obs'y | 29.94 | 760.6 | 29.98 | 761.4 | 54.5 | 12.5 | 80 | WNW | ..... | ..... | 3 | ..... | 1 | NW | NW | 0.073 | 1.86 | Clear. | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.66 | 753.4 | 29.83 | 757.6 | 54.1 | 12.3 | 73 | NW | ..... | ..... | 2-3 | ..... | ..... | ..... | NW | 0.008 | 0.2 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 29.12 | 739.5 | 30.21 | 767.4 | 50.0 | 10 | 62 | W | ..... | ..... | 4 | ..... | 2 | W | SW | 0 | 0 | Slightly cl'dy | T. Huguet, Director. |
| Toulouse, Observatory | 29.35 | 745.5 | 30.08 | 763.9 | 46.0 | 7.8 | 89 | WNW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.350 | 8.9 | Rainy | Mercadier Julier. |
| Versailles Observatory | 29.34 | 745.2 | 29.84 | 757.8 | 53.2 | 11.8 | 71 | NW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0.002 | 0.04 | ..... | Dr. A. Berigny, Director |
| Villefranche-sur-Saone, N.S. | 29.17 | 740.9 | 29.88 | 758.9 | 54.5 | 12.5 | 79 | NNW | ..... | ..... | 3 | ..... | 2 | S | NW | 0.47 | 12. | Slightly cl'dy | Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.75 | 755.6 | 29.78 | 756.3 | 80.6 | 27.0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marcl ési. |
| Lyons Obs'y, (Park Station) | 29.27 | 743.5 | 29.84 | 758.0 | 54.5 | 12.5 | 60 | NW | ..... | ..... | 3 | ..... | 7 | ..... | NNW | 0.374 | 9.5 | Showery | Mr. Jays. |
| Mont-Louis | 24.74 | 628.5 | 30.06 | 763.5 | 39.2 | 4.0 | 60 | WNW | 28.0 | 12.5 | ..... | ..... | 7 | ..... | W | 0.091 | 2.3 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.68 | 753.8 | 62.6 | 17.0 | 67 | NE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | Foggy | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.55 | 750.5 | ..... | ..... | 54.7 | 12.6 | 72 | NW | ..... | ..... | 4 | ..... | 9 | ..... | NW | 0.224 | 5.7 | ..... | Marié Davy, Director. |
| Perpignan | 29.86 | 758.5 | 29.97 | 761.2 | 56.7 | 13.7 | 45 | NW | 37.4 | 16.7 | ..... | ..... | 6 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.40 | 568.9 | ..... | ..... | 33.8 | 1.0 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.128 | 3.24 | Snowy | Gen'l de Nansouty. |
| Tours | 29.72 | 755.0 | 29.92 | 760.0 | 55.8 | 13.2 | 75 | NW | ..... | ..... | 1 | ..... | 8 | ..... | NNW | 0.134 | 3.4 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.21 | 767.3 | 30.23 | 767.9 | 50.4 | 10.2 | 61 | N | 9.6 | 4.3 | ..... | ..... | 0 | ..... | ..... | 0.067 | 1.7 | Clear | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand, Nice and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Gréasque, 322 m, or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi. (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135.0 millimeters, or 5 315 inches has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.86 | 732.9 | 29.69 | 754.1 | 58.5 | 14.7 | 42 | W | | | 3 | | 6 | E | | 0.020 | 0.5 | | Prof. Dr. Hoh. |
| Berlin | 29.62 | 752.4 | 29.79 | 756.7 | 53.4 | 11.9 | 65 | SE | | | 2 | | 7 | | | 0.004 | 0.1 | | Prof. Arndt. |
| Breslau | 29.21 | 741.9 | 29.73 | 755.2 | 52.0 | 11.1 | 53 | NNE | | | 3 | | 10 | NNE | | | | Raining | Royal University Obs'y |
| Carlsruhe | 29.28 | 743.8 | 29.70 | 754.4 | 60.1 | 15.6 | 59 | W | | | 1 | | 5 | NW | | 0.004 | 0.1 | Thunder-storm. | Albert Senz. |
| Cassel | 29.13 | 740.0 | 29.74 | 755.3 | 59.7 | 15.4 | 50 | ESE | | | 2 | | 8 | SW | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.56 | 750.7 | 29.72 | 754.8 | 56.3 | 13.5 | 72 | S | | | 4 | | 8k;n | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.35 | 745.5 | 29.72 | 754.8 | 61.5 | 16.4 | | NNE | | | 1 | | 6 | | | 0 | 0 | | Physical Society. |
| Freienwalde on the Oder | 29.76 | 755.9 | 29.80 | 756.9 | 52.3 | 11.3 | 76 | N | | | 1 | | 9ks | N | | 0 | 0 | | Assmann., M. D. |
| Friedrichshafen | 28.29 | 718.6 | 29.70 | 754.5 | 56.3 | 13.5 | 69 | SW | | | 3 | | 5 | SW | | 0.130 | 3.3 | Light rain | M. Wilhelm. |
| Hamburg | 29.75 | 755.7 | 29.82 | 757.5 | 51.1 | 10.6 | 56 | ENE | | | 3 | | 8k | | | 0 | 0 | Fair | Captain F. Hegeman. |
| Kiel | 29.86 | 758.3 | 29.87 | 758.7 | 45.3 | 7.4 | 64 | ENE | | | 2 | | 1 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.70 | 754.5 | 29.79 | 756.6 | 42.8 | 6.0 | 69 | NW | | | 3 | | 4 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 29.74 | 756.9 | 39.2 | 4.0 | | N | | | 4 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.32 | 744.8 | 29.74 | 755.4 | 56.5 | 13.6 | 53 | NE | | | 2 | | 7 | | | 0 | 0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.74 | 755.5 | 29.79 | 756.7 | 40.1 | 4.5 | 70 | WNW | | | 3 | | 8s | | | | | | Skalweit. |
| Neufahrwasser | 29.82 | 757.4 | 29.84 | 757.8 | 40.5 | 4.7 | 76 | NE | | | 2 | | 9 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.48 | 748.9 | 29.77 | 756.2 | 52.7 | 11.5 | 54 | NNW | | | 4 | | 10 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.20 | 741.6 | 29.73 | 755.2 | 60.6 | 15.9 | 59 | S | | | 3 | | 5 | SW | | 0.009 | 0.22 | | Imp. University Observatory. |
| Stuttgart | 28.72 | 729.5 | 29.64 | 752.8 | 61.5 | 16.4 | 38 | E | | | 1 | | 8k | S | | 0 | 0 | | Prof. Schoder. |
| Treves (Trier) | 29.19 | 741.5 | 29.71 | 754.6 | 53.4 | 11.9 | 87 | SW | | | 3 | | 10 | | | 0.080 | 2.03 | Graupelnd. | Prof. Flesch. |
| Weissenburg (Bavaria) | 28.23 | 717.0 | 29.71 | 754.7 | 55.9 | 13.3 | 41 | Calm | 0 | 0 | | | 6ck | | NW | 0 | 0 | | Dr. Van Bebber |
| Wustrow, Naval School | 29.83 | 757.7 | 29.85 | 758.3 | 41.0 | 5.0 | 83 | NE | | | 3 | | 8s | W | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.34 | 745.2 | 29.72 | 755.0 | 66.2 | 19.0 | | S | | | 1.5 | | | | | | | ⅛ Clear | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.81 | 757.1 | 29.86 | 758.4 | 86.7 | 30.4 | 40 | SW | | | | | 1 | | | 0 | 0 | D. clouds | |
| Deesa | | | | | 92.0 | 33.3 | 5 | N | 10.2 | 4.6 | | | 6 | WSW | | 0 | 0 | D. clouds | |
| Bombay | 29.75 | 755.7 | 29.79 | 756.7 | 86.5 | 30.3 | 68 | NW | 22 | 9.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.82 | 706.5 | 29.75 | 755.6 | 97.1 | 36.2 | 20 | WNW | | | | | 2 | | | 0 | 0 | D. clouds | |
| Lanore | 29.07 | 738.3 | 29.79 | 756.7 | 94.1 | 34.5 | 14 | NW | 3.8 | 1.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.31 | 693.6 | 29.79 | 756.7 | 87.1 | 30.6 | 69 | WSW | 25 | 11.2 | | | 4 | E | E | 0 | 0 | Thunder-storm | |
| Roorkee | 28.88 | 733.5 | 29.76 | 755.8 | 90.8 | 32.7 | 8 | NW | 3.0 | 1.3 | | | | | | 0 | 0 | Blue sky | |
| Agra | 29.24 | 742.8 | 29.79 | 756.8 | 93.6 | 34.2 | 12 | W | | | | | 8 | | W | 0 | 0 | | |
| Nagpur | 28.71 | 729.2 | 29.70 | 754.5 | 104.2 | 40.1 | 17 | NW | 4.1 | 1.8 | | | 1 | | | 0 | 0 | Blue sky | |
| Lucknow | 29.38 | 746.2 | 29.74 | 755.5 | 97.1 | 36.2 | 45 | WNW | 2.1 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.44 | 747.7 | 29.74 | 755.3 | 97.1 | 36.2 | 15 | Calm | 2.6 | 1.2 | | | 1 | | | 0 | 0 | D. clouds | |
| Patna | 29.51 | 749.4 | 29.68 | 753.8 | 100.3 | 37.9 | 13 | W | 2.0 | 0.9 | | | 2 | W | W | 0 | 0 | | |
| Hazaribagh | 27.78 | 705.6 | 29.73 | 755.0 | 94.8 | 34.9 | 38 | NW | 4.8 | 2.2 | | | 1 | | W | 0 | 0 | | |
| Cuttack | 29.71 | 754.7 | 29.80 | 756.8 | 87.1 | 30.6 | 68 | S | 9 | 4.0 | | | 2 | | | 0 | 0 | | |
| Calcutta (Alipore) | 29.76 | 756.0 | 29.78 | 756.5 | 85.7 | 29.8 | 76 | SSW | 8.0 | 3.6 | | | 4 | W | | 0 | 0 | D. clouds | |
| Goalpara | 29.30 | 744.3 | 29.70 | 754.2 | 76.8 | 24.9 | 79 | ENE | 5.5 | 2.5 | | | 0 | | | 0.53 | 13.5 | Blue sky | |
| Chittagong | 29.75 | 755.5 | 29.84 | 757.8 | 84.7 | 29.3 | 79 | SSW | 6.5 | 2.9 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.46 | 748.4 | 29.80 | 757.0 | 73.0 | 22.8 | 95 | NE | 2.8 | 1.2 | | | 10 | SW | SW | 0.65 | 16.5 | Overcast | |
| Jubbulpore | 28.42 | 721.8 | 29.74 | 755.4 | 95.7 | 35.4 | 13 | N | 3.4 | 1.5 | | | 0 | | | 0 | 0 | Blue sky | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal: the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected or instrumental error and temperature. Inches. | Barometer. Corrected or instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Force. 0—10. | Clouds. Amount. Upper. 0—10. | Clouds. Amount. Lower. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.20 | 741.8 | 29.62 | 752.2 | 59.7 | 15.4 | 73 | SW | 5.6 | 2.5 | ..... | ..... | 8 | ..... | ..... | 0.043 | 1.1 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.11 | 739.4 | 29.63 | 752.5 | 61.5 | 16.4 | 49 | W | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.52 | 749.7 | 29.65 | 752.5 | 56.8 | 13.8 | 73 | SSE | 3.1 | 1.4 | ..... | ..... | 8 | E | ..... | 1.024 | 26.0 | ..... | Prof. Dott. Lorenzoni. |
| Moncalieri | 28.71 | 729.2 | 29.61 | 752.0 | 62.2 | 16.8 | 43 | SW | 1.8 | 0.8 | ..... | ..... | 3 | NW | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.47 | 748.6 | 29.66 | 753.4 | 60.6 | 15.9 | 64 | SW | 5.6 | 2.5 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi |
| Mondovi | 27.73 | 704.3 | 29.63 | 752.6 | 56.8 | 13.8 | 45 | NW | ..... | ..... | 2 | ..... | 1 | NW | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.58 | 751.3 | 29.63 | 752.6 | 58.3 | 14.6 | 62 | NE | 10.5 | 4.7 | ..... | ..... | 7 | SW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.37 | 746.1 | 29.63 | 752.6 | 61.3 | 16.3 | 54 | NW | ..... | ..... | 2 | ..... | 7 | WNW | ..... | 0 | 0 | ..... | Cav. F. Meucci |
| Leghorn | 29.54 | 750.2 | 29.62 | 752.3 | 57.2 | 14.0 | 74 | NW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0.965 | 24.5 | ..... | Prof. P. Monte. |
| Rome | 29.46 | 748.2 | 29.63 | 752.6 | 64.4 | 18.0 | 60 | S | 9.4 | 4.2 | ..... | ..... | 7 | ..... | ..... | 0.524 | 13.3 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.44 | 747.9 | 29.70 | 754.3 | 65.8 | 18.8 | 51 | SW | 7.4 | 3.3 | ..... | ..... | 4 | W | ..... | 0.008 | 0.2 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.80 | 731.6 | 29.68 | 753.9 | 64.4 | 18.0 | 75 | NW | 4.3 | 1.9 | ..... | ..... | 10 | ..... | ..... | 0.016 | 0.4 | ..... | Prof. D. Conti. |
| Cagliari | 29.51 | 749.6 | 29.70 | 754.5 | 58.8 | 14.9 | 64 | NW | ..... | ..... | 4 | ..... | 8 | NW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.47 | 748.6 | 29.72 | 755.0 | 61.2 | 16.2 | 50 | NE | 5.6 | 2.5 | ..... | ..... | 10 | ..... | ..... | 0.008 | 0.2 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.60 | 751.7 | 29.67 | 753.5 | 66.7 | 19.3 | 56 | NNE | 11.2 | 5.0 | ..... | ..... | 9 | WSW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.13 | 740.0 | 29.69 | 754.1 | 59.7 | 15.4 | 77 | SSW | 1.8 | 0.8 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 29.88 | 758.9 | 29.89 | 759.2 | 61.2 | 16.2 | 95 | Calm | 0.4 | 0.2 | ..... | ..... | 10n | ..... | ..... | 0.730 | 18.54 | Raining | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.82 | 757.4 | 30.02 | 762.5 | 60.4 | 15.8 | 95 | NW | 4.6 | 2.1 | ..... | ..... | 10s | ..... | ..... | 0.670 | 17.02 | Cloudy | S. Takehayashi. |
| Tokei, (Yeddo) Observatory | 29.95 | 760.7 | 30.02 | 762.5 | 62.6 | 17.0 | 80 | S | 17.1 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0.140 | 3.56 | Fair | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.04 | 636.0 | 30.21 | 767.3 | 43.7 | 6.5 | 38 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | Prof. L. Perez. |
| Leon | 24.40 | 619.9 | 30.06 | 763.7 | 57.2 | 14.0 | 64 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.06 | 585.7 | 30.04 | 762.9 | 55.0 | 12.8 | 46 | Calm | 0 | 0 | ..... | 0 | 1d | ..... | W | 0 | 0 | Very hazy | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 48.6 | 9.2 | 38 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | M. V. de Leon, M. E. |
| Tlacotalpam | 29.82 | 757.5 | 29.84 | 757.8 | 75.6 | 24.2 | 85 | E | ..... | ..... | 1 | 2 | 0 | W | ..... | 0 | 0 | Light fog | M. M. Chàzaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | 22.55 | 571.4 | 30.11 | 764.8 | 55.0 | 12.8 | 35 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | J. Castrillon. |
| Puebla, (Catholic Institute) | 23.38 | 593.7 | 30.14 | 765.5 | 50.7 | 10.4 | 59 | NE | 0 4 | 0.2 | ..... | 0 | 1 | ..... | Calm | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.32 | 719.8 | 29.99 | 761.8 | 73.4 | 23.0 | 54 | NE | ..... | ..... | 2 | ..... | 5 | ..... | SW | 0 | 0 | ½ clouded | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft., San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,167.8m., or 7,112.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 507.3 m., or 1,664.4 ft. The data are published as given, except the conversions, which have been revised; the instrumental correction —0.88 mm., has been applied at this office to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.78 | 756.3 | 29.77 | 756.3 | 53.2 | 11.8 | ..... | NNW | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.043 | 1.1 | ..... | |
| Groningen | 29.75 | 755.6 | 29.80 | 757.0 | 51.6 | 10.9 | ..... | NE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.78 | 756.3 | 29.78 | 756.3 | 46.2 | 7.9 | ..... | NNE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.72 | 754.8 | 29.72 | 754.8 | 54.0 | 12.2 | 93 | NE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.71 | 754.7 | 29.76 | 755.9 | 52.7 | 11.5 | 86 | NNE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.575 | 14.6 | Very cloudy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.85 | 758.1 | 29.90 | 759.5 | 42.8 | 6.0 | 28 | NNW | 13.9 | 6.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönø | 29.82 | 757.5 | 29.86 | 758.5 | 36.5 | 2.5 | 56 | SSW | 9 | 4 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.66 | 753.4 | 29.81 | 757.2 | 46.4 | 8.0 | 54 | NNE | 2 | 1 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.71 | 754.7 | 29.76 | 755.8 | 38.8 | 3.8 | 57 | Calm | 0 | 0 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra (Azores) | 29.91 | 759.8 | 30.10 | 764.6 | 64.0 | 17.8 | 84 | SSW | 10.5 | 4.7 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.29 | 744.0 | 30.32 | 770.0 | 62.4 | 16.9 | 46 | NW | 1.3 | 0.6 | ..... | ..... | 6 | NW | ..... | 0 | 0 | ..... | Dr. A.M. R. dos Santos. |
| Funchal (Madeira) | 30.16 | 766.0 | 30.24 | 768.2 | 71.1 | 21.7 | 46 | ESE | 9.8 | 4.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 30.02 | 762.4 | 30.38 | 771.6 | 60.6 | 15.9 | 52 | NNW | 12.5 | 5.6 | ..... | ..... | 4 | NW | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada (Azores) | 30.15 | 765.7 | 30.22 | 767.5 | 67.6 | 19.8 | 74 | S | 10.5 | 4.7 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | A. G. da Silva Costa. Com'd.t. |
| D. Fernando | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| Duque da Terceira, San Jose de Bissao, Senegambia | 1 | ..... | Blue sky | C C.da Fonseca Ferreira, Comd't |
| India | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, S. 4° 55′, E. 10° 18′ | 2 | SE | Drizzling | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa, San Jose de Bissao, Senegambia | 1 | ..... | Blue sky | A. Ferreira, 2d Lt |
| Sá da Bandeira | ..... | ..... | ..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | 0 | ..... | Blue sky | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.22 | 742.3 | 29.65 | 753.1 | 46.9 | 8.3 | 88 | NNE | 20 | 9 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.26 | 743.2 | 29.67 | 753.6 | 61.7 | 16.5 | 74 | NNW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.54 | 750.2 | 29.78 | 756.4 | 49.3 | 9.6 | 74 | WNW | 4 | 2 | ..... | ..... | 1ck | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.73 | 755.1 | 29.74 | 755.5 | 50.4 | 10.2 | 78 | NNW | 7 | 3 | ..... | ..... | 3c;ck | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.12 | 739.7 | 29.73 | 756.2 | 70.0 | 21.1 | 43 | SE | 18 | 8 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Nikolaiev | 29.71 | 754.6 | 29.78 | 756.4 | 76.1 | 24.5 | 38 | S | 18 | 8 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.80 | 757.0 | 29.82 | 757.5 | 65.1 | 18.4 | 82 | ESE | 7 | 3 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.41 | 747.1 | 29.94 | 760.4 | 71.8 | 22.1 | 42 | S | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.66 | 753.3 | 29.86 | 758.3 | 78.1 | 25.6 | 29 | E | 22 | 10 | ..... | ..... | 4 | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 29.80 | 757.0 | 29.82 | 757.5 | 40.8 | 4.9 | 73 | ESE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.53 | 724.7 | 29.88 | 759.0 | 76.5 | 24.7 | 40 | SW | 9 | 4 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.05 | 763.3 | 29.97 | 761.2 | 74.3 | 23.5 | 21 | E | 18 | 8 | ..... | ..... | 2ks | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.64 | 752.8 | 30.09 | 764.3 | 74.8 | 23.8 | 38 | S | 7 | 3 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.74 | 755.4 | 30.00 | 762.0 | 73.0 | 22.8 | 47 | SW | 9 | 4 | ..... | ..... | 1s | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.07 | 738.3 | 30.04 | 762.9 | 50.2 | 10.1 | 51 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.77 | 756.2 | 29.99 | 761.8 | 81.0 | 27.2 | 45 | N | 13 | 6 | ..... | ..... | 8s | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.51 | 724.1 | 30.01 | 762.3 | 77.0 | 25.0 | 47 | Calm | 0 | 0 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.34 | 745.2 | 29.83 | 757.7 | 54.9 | 12.7 | 48 | N | 13 | 6 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.40 | 746.8 | 29.70 | 754.4 | 32.4 | 0.2 | 59 | NW | 25 | 11 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking (China) | 30.02 | 762.4 | 30.16 | 766.0 | 51.4 | 10.8 | 23 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.53 | 750.1 | 29.63 | 752.6 | 39.6 | 4.2 | 93 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Raining | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.81 | 757.1 | 29.91 | 759.7 | 66.9 | 19.4 | 42 | W | 4.0 | 1.78 | ..... | ..... | 1ck | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 29.74 | 755.5 | 29.80 | 757.0 | 56.1 | 13.4 | 89 | NW | 8.2 | 3.65 | ..... | 1 | 9 | SE | ..... | 0.618 | 15.7 | Hailing | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.19 | 690.6 | ..... | ..... | 48.6 | 9.2 | 49 | N | 7.4 | 3.30 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | Almost clear | Domingo Martin y Perez. |
| Madrid, Royal Oservatory | 27.94 | 709.8 | ..... | ..... | 57.9 | 14.4 | 44 | N | 23.1 | 10.34 | ..... | 0 | 3 | ..... | ..... | 0 | 0 | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 29.94 | 760.4 | 30.09 | 764.2 | 70.7 | 21.5 | 48 | NW | 11.0 | 4.91 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.39 | 746.4 | 30.27 | 768.8 | 61.5 | 16.4 | 64 | W | 7.4 | 3.3 | ..... | ..... | 7 | ..... | ..... | 0.035 | 0.9 | Cloudy | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.07 | 763.8 | 30.14 | 765.5 | 71.9 | 22.2 | 62 | ESE | 7.8 | 3.5 | ..... | 1ck | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J |
| Manilla, Philippine Islands | 29.82 | 757.4 | 29.87 | 758.9 | 85.1 | 29.5 | 80 | SE | 2.9 | 1.3 | ..... | 2 | 2 | NNW | S | 1.181 | 30.0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.22 | 767.6 | 30.32 | 770.1 | 62.6 | 17.0 | 53 | NNW | 6.3 | 2.8 | ..... | 0 | 9 | ..... | NW | Inap. | Inap | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I | 29.89 | 759.3 | 29.98 | 761.6 | 76.3 | 24.6 | 73 | NE | 15.7 | 7.04 | ..... | 7k | 6k | NE | NE | 1.270 | 32.25 | Cloudy | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.85 | 758.1 | 29.89 | 759.1 | 34.5 | 1.4 | ..... | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.85 | 758.2 | 29.90 | 759.5 | 38.1 | 3.4 | 50 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.85 | 758.2 | 29.90 | 759.5 | 41.7 | 5.4 | 46 | SSW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.88 | 758.9 | 29.82 | 757.4 | 42.1 | 5.6 | 32 | NNE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0.122 | 3.1 | ..... | |
| Wisby | 29.74 | 755.3 | 29.80 | 756.8 | 34.5 | 1.4 | 85 | NE | ..... | ..... | 6 | ..... | 10 | SW | ..... | 0.299 | 7.6 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.76 | 755.9 | 29.84 | 757.8 | 43.2 | 6.2 | 33 | NNW | 10.3 | 4.6 | ..... | ..... | 6 | ..... | ..... | 0.002 | 0.05 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.39 | 721.0 | 29.82 | 757.3 | 52.3 | 11.3 | 61 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.059 | 1.5 | Covered | The Observatory. |
| Zurich | 28.12 | 714.2 | 29.74 | 755.4 | 58.5 | 14.7 | 59 | W | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0.480 | 12.2 | Cloudy | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —3.4 mm.; Thermometer,—2.0 Cent.; Relative Humidity, +4 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,338.6 feet, and that of Zurich 470 m., or 1,542.0 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.67 | 753.5 | 71.2 | 21.8 | 51 | SE | 4 | 2.0 | ..... | ..... | 7 | ..... | SW | 0.118 | 3.0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.24 | 768.0 | 84.2 | 29.0 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.75 | 755.7 | 64.8 | 18.2 | ..... | SW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut. (Syria,) Lee Obs'y | 29.74 | 755.4 | 29.86 | 758.4 | 71.4 | 21.9 | 73 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.15 | 765.3 | 30.20 | 767.1 | 35.7 | 2.1 | 60 | N | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Hon. J. Ferguson. |
| Brockville, Ontario | 30.12 | 765.0 | 30.43 | 772.9 | 44 | 6.7 | ..... | NE | 8 | 3.6 | ..... | 2c | 0 | SW | ..... | 0 | 0 | Clear | W. R. Bigg. |
| *Chatham, N. B | 30.11 | 764.8 | 30.18 | 766.6 | 33 | 0.6 | 70 | N | 14 | 6.3 | ..... | 8k | 2ks | N | N | Inap. | Inap | Fair | G. A. Blair. |
| Charlottetown, P. E. Island | 30.00 | 762.0 | 30.05 | 763.3 | 31 | — 0.6 | 48 | N | 20 | 8.9 | ..... | ..... | 10ks | ..... | NE | 0.050 | 1.27 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 30.24 | 768.1 | 30.44 | 773.2 | 41.0 | 5.0 | 49 | E | ..... | ..... | 2 | 1cs | 0 | ..... | ..... | 0 | 0 | Fine | James Smith, M. A. |
| Dalhousie, N. B | 30.04 | 763.0 | 30.21 | 767.3 | 35 | 1.7 | ..... | NW | ..... | ..... | 2 | 2ks | 0 | ..... | ..... | 0 | 0 | Fair | H. A. Johnson. |
| Esquimault, B. C | 30.15 | 765.8 | 30.20 | 767.1 | 45.3 | 7.4 | 100 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | W. H. Bevis. |
| *Father Point, Quebec | 30.31 | 769.9 | 30.33 | 770.4 | 34 | 1.1 | 60 | N | 28 | 12.5 | ..... | 5cs | 0 | Calm | ..... | 0.01 | 0.3 | Fair | J. McWilliams. |
| Fredericton, N. B | 30.14 | 765.5 | 30.21 | 767.3 | 35.0 | 1.7 | 49 | NW | 10 | 4.5 | ..... | 0 | 7ks | ..... | ..... | 0 | 0 | Cloudy | Prof. Harrison. |
| *Fort Garry, Manitoba | 28.99 | 736.3 | 29.82 | 757.4 | 44 | 6.7 | 100 | N | 11 | 4.9 | ..... | 5k | 5n | N | N | 0.080 | 2.03 | Light rain | James Stewart. |
| *Halifax, N. S | 29.83 | 757.7 | 29.97 | 761.2 | 33 | 0.6 | 81 | N | 16 | 7.2 | ..... | 2cs | 0 | SE | ..... | 0 | 0 | Fine | James Grant. |
| Hamilton, Ontario | 30.04 | 763.0 | 30.42 | 772.6 | 42.7 | 5.9 | 80 | SW | ..... | ..... | 1 | 5ck | 0 | SW | ..... | 0 | 0 | Hazy | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 30.08 | 764.0 | 30.42 | 772.6 | 43 | 6.1 | 51 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.92 | 760.0 | 29.96 | 761.0 | 31.2 | — 0.4 | 95 | N | 8 | 3.6 | ..... | ..... | 10ks | ..... | ..... | 0.50 | 12.7 | Snowy | C. H. Rigby. |
| Moose Factory, Ontario | 30.06 | 763.5 | 30.10 | 764.5 | 41.2 | 5.1 | 54 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | Inap. | Inap. | Cloudy | J. R. Nason. |
| *Montreal, Quebec | 30.25 | 768.3 | 30.46 | 773.7 | 39 | 3.9 | 46 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.65 | 753.1 | 30.36 | 771.1 | 43 | 6.1 | 48 | E | 18 | 8.0 | ..... | 2cs | 2ks | NW | NW | 0 | 0 | Fair | Rev. R. Mosly. |
| Peterboro, Ontario | 29.64 | 752.8 | 30.41 | 772.4 | 46.7 | 8.2 | 43 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.64 | 752.8 | 30.34 | 770.6 | 47 | 8.3 | 70 | E | 8 | 3.6 | ..... | ..... | Haze | ..... | ..... | 0 | 0 | Cloudy | H. Morgan. |
| Port Hastings, N. S | 29.56 | 758.4 | 29.92 | 760.0 | 32.6 | 0.3 | ..... | N | 10 | 4.5 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.66 | 753.4 | 30.32 | 770.1 | 47 | 8.3 | 71 | E | 16 | 7.2 | ..... | ..... | 10ks | ..... | N | 0 | 0 | Cloudy | M. Payne. |
| *Quebec, Quebec | 30.06 | 763.5 | 30.40 | 772.1 | 36 | 2.2 | 61 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.96 | 761.0 | 30.44 | 773.2 | 38 | 3.3 | 54 | N | 4 | 1.8 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Clear | W. H. McIntyre. |
| St. Andrews, N. B | 30.10 | 764.5 | 30.16 | 766.1 | 35 | 1.7 | 57 | N | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Fair | Dr. Gove. |
| St. John, N. B | 29.98 | 761.5 | 30.15 | 765.8 | 34 | 1.1 | 52 | NE | 21 | 9.4 | ..... | 7k | 0 | ..... | ..... | 0.21 | 5.3 | Clear | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.55 | 750.6 | 30.27 | 768.8 | 50 | 10.0 | 71 | SE | 22 | 9.8 | ..... | ..... | 10cs | ..... | ..... | 0 | 0 | Cloudy | K. Stewart. |
| Stayner, Ontario | 29.52 | 749.8 | 30.31 | 769.9 | 43 | 6.1 | 75 | SE | 5 | 2.2 | ..... | ..... | 8n | ..... | NW | Inap. | Inap. | Cloudy | R. J. Cole. |
| Stratford, Ontario | 29.02 | 737.1 | 30.32 | 770.1 | 45.0 | 7.2 | 59 | SE | 10 | 4.5 | ..... | 0 | 9s | ..... | ..... | 0 | 0 | Cloudy | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.88 | 758.9 | 29.82 | 757.4 | 29 | — 1.7 | 96 | N | 20 | 8.9 | ..... | ..... | 10n | ..... | ..... | 0.01 | 0.3 | Light snow | T. C. Hill, |
| *Toronto, Ontario | 30.02 | 762.5 | 30.41 | 772.4 | 43 | 6.1 | 59 | E | 10 | 4.5 | ..... | ..... | 10ks | ..... | N | 0 | 0 | Cloudy | Magnetic Observatory. |
| Windsor, N. S | 29.94 | 760.5 | 30.04 | 763.0 | 31.5 | — 0.3 | 95 | N | 26 | 11.6 | ..... | ..... | 10n;k | ..... | ..... | 0.11 | 2.8 | Snowing | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 40.0 | 4.4 | 82 | SE | ..... | ..... | ..... | 10k | 10s | ..... | ..... | 0 | 0 | Fair | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'r 0—10. | Clouds. Amount. Lw'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 30.22 | 767.6 | 30.46 | 773.7 | 44 | 6.7 | 45 | Calm | 0 | 0 | ..... | 1c | 0 | NW | ..... | 0 | 0 | Clear | |
| Alpena, Michigan | 29.62 | 752.3 | 30.29 | 769.4 | 42 | 5.6 | 74 | SE | 14 | 6.3 | ..... | ..... | 8s | ..... | W | 0 | 0 | Cloudy | |
| Atlanta, Georgia | 29.09 | 738.9 | 30.22 | 767.6 | 65 | 18.3 | 53 | S | 2 | 0.9 | ..... | 0 | 8m';hz | ..... | Calm | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 30.42 | 772.6 | 30.44 | 773.2 | 48 | 8.9 | 70 | E | 12 | 5.4 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Augusta, Georgia | 30.09 | 764.3 | 30.26 | 768.6 | 57 | 13.9 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 30.39 | 771.9 | 30.44 | 773.2 | 54 | 12.2 | 49 | E | 5 | 2.2 | ..... | 5c | Haze | Calm | Calm | 0 | 0 | Fair | |
| Barnegat, New Jersey | 30.37 | 771.4 | 30.40 | 772.1 | 51 | 10.6 | 59 | NE | 11 | 4.9 | ..... | 5c | 0 | N | ..... | 0 | 0 | Fair | |
| Bismarck, Dakota | 27.99 | 710.9 | 29.84 | 757.9 | 44 | 6.7 | 100 | NW | 24 | 10.7 | ..... | ..... | 10s | ..... | Calm | 1.00 | 25.4 | Cloudy | |
| Boerne, Texas | 28.52 | 724.4 | 29.82 | 757.4 | 57 | 13.9 | 81 | E | 2 | 0.9 | ..... | ..... | 10s | ..... | SE | 1.80 | 45.7 | Cloudy | |
| Boise City, Idaho | 27.24 | 691.9 | 30.20 | 767.1 | 44 | 6.7 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boston, Massachusetts | 30.19 | 766.8 | 30.35 | 770.9 | 46 | 7.8 | 33 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Brackettville, Texas | 28.79 | 731.3 | 29.81 | 757.2 | 60 | 15.6 | 94 | NW | 1 | 0.4 | ..... | ..... | 10ks | ..... | Calm | 1.24 | 31.5 | Cloudy | |
| Breckenridge, Minnesota | 28.75 | 730.2 | 29.73 | 755.1 | 51 | 10.6 | 79 | SW | 9 | 4.0 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.83 | 757.7 | 29.87 | 758.7 | 77 | 25.0 | 86 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Buffalo, New York | 29.65 | 753.1 | 30.37 | 771.4 | 43 | 6.1 | 63 | NE | 6 | 2.7 | ..... | 8cs | Haze | N | Calm | Inap. | Inap. | Fair | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 52 | 11.1 | 23 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 30.15 | 765.8 | 30.46 | 773.7 | 36 | 2.2 | 53 | N | 9 | 4.0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Cairo, Illinois | 29.79 | 756.7 | 30.18 | 766.6 | 68 | 20.0 | 51 | S | 11 | 4.9 | ..... | 2c | Sm'e | Calm | ..... | 0 | 0 | Fair | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.21 | 640.3 | 30.01 | 762.2 | 52 | 11.1 | 29 | S | 2 | 0.9 | ..... | 2k | 0 | NW | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 43 | 6.1 | 36 | N | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.47 | 697.7 | 30.04 | 763.0 | 34 | 1.1 | 70 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.31 | 769.9 | 30.31 | 769.9 | 53 | 11.7 | 73 | NE | 28 | 12.5 | ..... | 5c | Haze | SW | ..... | 0 | 0 | Hazy | |
| Cape Henry, Virginia | 30.38 | 771.6 | 30.40 | 772.1 | 51 | 10.6 | 59 | NE | 17 | 7.6 | ..... | 2c | Haze | NW | Calm | 0 | 0 | Fair | |
| Cape Lookout, N. Carolina | 30.26 | 768.6 | 30.28 | 769.1 | 58 | 14.4 | 70 | NE | 32 | 14.3 | ..... | 8c | 0 | W | ..... | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 30.33 | 770.4 | 30.36 | 771.1 | 50 | 10.0 | 51 | NE | 16 | 7.2 | ..... | 2c | 0 | N | ..... | 0 | 0 | Clear | |
| Castroville, Texas | 29.16 | 740.7 | 29.86 | 758.4 | 61 | 16.1 | 94 | SE | 4 | 1.8 | ..... | ..... | 10n | ..... | S | 1.05 | 26.7 | Light rain | |
| Charleston, South Carolina | 30.21 | 767.3 | 30.27 | 768.8 | 63 | 17.2 | 67 | NW | 8 | 3.6 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 24.10 | 612.1 | 30.04 | 763.0 | 36 | 2.2 | 61 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Chicago, Illinois | 29.38 | 746.2 | 30.05 | 763.3 | 64 | 17.8 | 55 | S | 6 | 2.7 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Cincinnati, Ohio | 29.58 | 751.3 | 30.23 | 767.8 | 57 | 13.9 | 75 | SE | 1 | 0.4 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Cleveland, Ohio | 29.51 | 749.5 | 30.24 | 768.1 | 52 | 11.1 | 54 | SE | 20 | 8.9 | ..... | 8k | 2s | NW | Calm | 0 | 0 | Cloudy | |
| Coleman City, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Columbus, Ohio | 29.38 | 746.2 | 30.21 | 767.3 | 61 | 16.1 | 71 | SE | 4 | 1.8 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Concho, Texas | 28.10 | 713.7 | 29.78 | 756.4 | 49 | 9.4 | 85 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.54 | 750.3 | 30.01 | 762.2 | 58 | 14.4 | 100 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | NE | 3.02 | 76.7 | Threatening | |
| Davenport, Iowa | 29.36 | 745.7 | 29.98 | 761.5 | 64 | 17.8 | 63 | SW | 2 | 0.9 | ..... | 8cs | Haze | SW | Calm | 0.04 | 1.0 | Fair | |
| Deadwood, Dakota | 25.37 | 644.4 | ..... | ..... | 37 | 2.8 | 90 | W | 1 | 0.4 | ..... | Haze | 0 | ..... | ..... | 1.56 | 39.6 | Clear | |
| Decatur, Texas | 28.72 | 729.5 | 29.88 | 758.9 | 55 | 12.8 | 74 | Calm | 0 | 0 | ..... | ..... | 8ks | ..... | Calm | 0.10 | 2.5 | Cloudy | |
| Denison, Texas | 29.24 | 742.7 | 30.03 | 762.8 | 57 | 13.9 | 100 | Calm | 0 | 0 | ..... | 2cs | Fog | Calm | Calm | 1.54 | 39.1 | Fair | |
| Denver, Colorado | 24.88 | 631.9 | 30.10 | 764.5 | 40 | 4.4 | 91 | S | 4 | 1.8 | ..... | 5c | 0 | NW | ..... | 0.20 | 5.1 | Fair | |
| Des Moines, Iowa | 29.10 | 739.1 | 29.96 | 761.0 | 61 | 16.1 | 82 | SW | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.08 | 2.0 | Light rain | |
| Detroit, Michigan | 29.56 | 750.8 | 30.24 | 768.1 | 47 | 8.3 | 70 | E | 8 | 3.6 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Dodge City, Kansas | 27.45 | 696.7 | 29.71 | 754.6 | 50 | 10.0 | 93 | N | 12 | 5.4 | ..... | 0 | 1s | ..... | Calm | 0.01 | 0.3 | Clear | |
| Dubuque, Iowa | 29.29 | 744.0 | 29.97 | 761.2 | 62 | 16.7 | 77 | S | 2 | 0.9 | ..... | 8k | Haze | S | Calm | 0.03 | 0.8 | Cloudy | |
| Duluth, Minnesota | 29.25 | 742.9 | 29.93 | 760.2 | 40 | 4.4 | 82 | NE | 5 | 2.2 | ..... | ..... | 10s | ..... | NE | 0.08 | 2.0 | Cloudy | |
| Eagle Pass, Texa | 29.17 | 740.9 | 29.90 | 759.4 | 63 | 17.2 | 78 | NE | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 2.34 | 59.4 | Cloudy | |
| Eastport, Maine | 30.10 | 764.5 | 30.17 | 766.3 | 36 | 2.2 | 45 | N | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0.31 | 7.9 | Clear | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 72 | 22.2 | 90 | S | ..... | ..... | 4 | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| El Paso, Texas | 26.28 | 667.5 | ..... | ..... | 47 | 8.3 | 61 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.56 | 750.8 | 30.28 | 769.1 | 52 | 11.1 | 41 | SE | 21 | 9.4 | ..... | 10c | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.43 | 747.5 | 30.09 | 764.3 | 46 | 7.8 | 69 | SE | 7 | 3.1 | ..... | 8ck | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Florence, Arizona | 28.49 | 723.6 | 30.09 | 764.3 | 60 | 15.6 | 29 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.92 | 709.2 | ..... | ..... | 42 | 5.6 | 100 | W | 6 | 2.7 | ..... | ..... | Fog | ..... | Calm | 0.71 | 18.0 | Foggy | |
| Fort Craig, New Mexico | 25.56 | 649.2 | 29.62 | 752.3 | 41 | 5.0 | 48 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.12 | 3.0 | Clear | |
| Fort Davis, Texas | 25.19 | 639.8 | 30.15 | 765.8 | 44 | 6.7 | 50 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.45 | 748.0 | 29.98 | 761.5 | 62 | 16.7 | 94 | W | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 1.00 | 25.4 | Light rain | |
| Fort Griffin, Texas | 28.76 | 730.5 | 30.04 | 763.0 | 51 | 10.6 | 93 | E | 4 | 1.8 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort Keogh, Montana | 27.45 | 697.2 | ..... | ..... | 45 | 7.2 | 60 | W | 2 | 0.9 | ..... | 2c | 0 | Calm | ..... | 0.01 | 0.3 | Clear | |
| Fort McKavett, Texas | 27.72 | 704.1 | 29.63 | 752.6 | 54 | 12.2 | 87 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.39 | 9.9 | Cloudy | |
| Fort St. Michael, Alaska | 29.74 | 755.4 | 29.78 | 756.4 | 17 | — 8.3 | 100 | SW | 39 | 17.4 | ..... | ..... | 10n | ..... | SW | 0.02 | 0.5 | Snowing | |
| Fort Sill, Indian Territory | 28.79 | 731.3 | 29.90 | 759.4 | 52 | 11.1 | 86 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Stevenson, Dakota | 27.45 | 697.2 | ..... | ..... | 43 | 6.1 | 91 | NW | 19 | 8.5 | ..... | ..... | 10s | ..... | NW | 0.54 | 13.7 | Cloudy | |
| Fredericksburg, Texas | 28.26 | 717.8 | 29.80 | 756.9 | 58 | 14.4 | 88 | N | 3 | 1.3 | ..... | ..... | 10ks | ..... | Calm | 1.60 | 40.6 | Cloudy | |
| Galveston, Texas | 29.98 | 761.5 | 30.03 | 762.8 | 72 | 22.2 | 95 | E | 12 | 5.4 | ..... | ..... | 10s | ..... | SE | Inap. | Inap. | Cloudy | |
| Graham, Texas | 28.97 | 735.8 | 30.04 | 763.0 | 48 | 8.9 | 85 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Grand Haven, Michigan | 29.47 | 748.5 | 30.11 | 764.8 | 56 | 13.3 | 63 | SE | 8 | 3.6 | ..... | Haze | 5s | Calm | Calm | 0 | 0 | Fair | |
| Indianapolis, Indiana | 29.38 | 746.2 | 30.14 | 765.5 | 64 | 17.8 | 55 | SE | 3 | 1.3 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Hazy | |
| Indianola, Texas | 29.95 | 760.7 | 29.98 | 761.5 | 73 | 22.8 | 90 | SE | 13 | 5.8 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 28.94 | 735.1 | 30.05 | 763.3 | 64 | 17.8 | 73 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear | |
| Jacksonville, Florida | 30.26 | 768.6 | 29.28 | 769.1 | 62 | 16.7 | 88 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Keokuk, Iowa | 29.33 | 745.0 | 29.93 | 760.2 | 62 | 16.7 | 67 | SE | 8 | 3.6 | ..... | 0 | 7s | ..... | S | 0.06 | 1.5 | Fair | |
| Key West, Florida | 30.14 | 765.5 | 30.17 | 766.3 | 72 | 22.2 | 71 | NE | 9 | 4.0 | ..... | 5k | 0 | E | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 30.33 | 770.4 | 30.35 | 770.9 | 50 | 10.0 | 79 | E | 23 | 10.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.28 | 743.7 | 30.30 | 769.6 | 54.5 | 12.5 | 77 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | |
| La Crosse, Wisconsin | 29.20 | 741.7 | 29.91 | 759.7 | 66 | 18.9 | 64 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| La Mesilla, New Mexico | 26.10 | 662.9 | 30.25 | 768.3 | 44 | 6.7 | 76 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.46 | 748.3 | 29.79 | 756.7 | 70 | 21.1 | 61 | SW | 4 | 1.8 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.02 | 737.1 | 29.85 | 758.2 | 56 | 13.3 | 94 | NW | 15 | 6.7 | ..... | ..... | 10n | ..... | Calm | 0.96 | 24.4 | Heavy rain | |
| Los Angeles, California | 29.68 | 753.9 | 30.04 | 763.0 | 46.0 | 7.8 | 77 | SE | 1 | 0.4 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Louisville, Kentuckey | 29.65 | 753.1 | 30.20 | 767.1 | 62 | 16.7 | 56 | S | 1 | 0.4 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Lynchburg, Virginia | 29.72 | 754.9 | 30.40 | 772.1 | 59 | 15.0 | 43 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Madison, Wisconsin | 29.01 | 736.8 | 29.96 | 761.0 | 61 | 16.1 | 71 | SE | 7 | 3.1 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy | |
| Marquette, Michigan | 29.27 | 743.4 | 29.97 | 761.2 | 49 | 9.4 | 71 | N | 20 | 8.9 | ..... | ..... | 10s | ..... | NW | 0.04 | 1.0 | Cloudy | |
| Mason, Texas | 28.36 | 720.3 | 30.13 | 765.3 | 53 | 11.7 | 93 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | S | 1.16 | 29.5 | Cloudy | |
| Memphis, Tennessee | 29.85 | 758.2 | 30.17 | 766.3 | 66 | 18.9 | 64 | S | 9 | 4.0 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.31 | 744.5 | 30.03 | 762.8 | 52 | 11.1 | 79 | SE | 8 | 3.6 | ..... | 2ck | 2s | S | Calm | 0 | 0 | Fair | |
| Mobile, Alabama | 30.20 | 767.1 | 30.25 | 768.3 | 63 | 17.2 | 72 | SE | 4 | 1.8 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Montgomery, Alabama | 30.04 | 763.0 | 30.27 | 768.8 | 63 | 17.2 | 72 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Morgantown, West Virginia | 29.20 | 741.7 | 30.24 | 768.1 | 60 | 15.6 | 60 | E | 8 | 3.6 | ..... | 5k | 0 | E | ..... | 0 | 0 | Fair | |
| Mt. Washington, N. H. | 23.82 | 605.0 | 30.18 | 766.6 | 11 | —11.7 | 60 | N | 42 | 18.8 | ..... | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear | |
| Nashville, Tennessee | 29.70 | 754.4 | 30.23 | 767.8 | 61 | 16.1 | 55 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 30.27 | 768.8 | 30.39 | 771.9 | 51 | 10.6 | 49 | NE | 5 | 2.2 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| New London, Connecticut | 30.32 | 770.1 | 30.37 | 771.4 | 52 | 11.1 | 41 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Orleans, Louisiana | 30.11 | 764.8 | 30.17 | 766.3 | 68 | 20.0 | 79 | E | 9 | 4.0 | ..... | 0 | 5s | ..... | SE | 0 | 0 | Fair | |
| Newport, Rhode Island | 30.31 | 769.9 | 30.36 | 771.1 | 47 | 8.3 | 48 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New York, New York | 30.23 | 767.8 | 30.42 | 772.6 | 51 | 10.6 | 27 | N | 12 | 5.4 | ..... | 2cs | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Norfolk, Virginia | 30.34 | 770.6 | 30.40 | 772.1 | 53 | 11.7 | 42 | E | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |

## UNITED STATES SERIES.—Continued.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity.* Miles per hour. | Wind. Velocity.* Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r —10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.09 | 688.1 | 29.68 | 753.9 | 42 | 5.6 | 83 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 30.13 | 765.3 | 30.17 | 766.3 | 45.2 | 7.3 | 76 | NW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 28.80 | 731.5 | 29.87 | 758.7 | 60 | 15.6 | 82 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.32 | 8.1 | Cloudy | |
| Oswego, New York | 30.09 | 764.3 | 30.42 | 772.6 | 47 | 8.3 | 48 | S | 6 | 2.7 | ..... | 1c | 0 | Calm | ..... | 0.06 | 1.5 | Clear | |
| Pembina, Dakota | *28.95 | 735.3 | 29.78 | 756.4 | 45 | 7.2 | 100 | NW | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Light rain | |
| Philadelphia, Pa | 30.37 | 771.4 | 30.42 | 772.6 | 51 | 10.6 | 53 | NE | 8 | 3.6 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Phœnix, Arizona | 28.80 | 731.5 | 30.57 | 776.5 | 63 | 17.2 | 33 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.76 | 451.1 | 29.97 | 761.2 | 8 | —13.3 | 33 | N | 24 | 10.7 | ..... | 5cs | 0 | Calm | ..... | 0.59 | 15.0 | Fair | |
| Pioche, Nevada | 24.13 | 612.9 | 29.90 | 759.4 | 39 | 3.9 | 46 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.49 | 749.0 | 30.31 | 769.9 | 52 | 11.1 | 73 | E | 4 | 1.8 | ..... | 7k | 0 | NW | ..... | 0 | 0 | Fair | |
| Port Huron, Michigan | 29.56 | 750.8 | 30.23 | 767.8 | 49 | 9.4 | 51 | SE | 8 | 3.6 | ..... | 10cs | Sm'e | Calm | ..... | 0 | 0 | Cloudy | |
| Portland, Maine | 30.29 | 769.4 | 30.34 | 770.6 | 43 | 6.1 | 36 | N | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Portland, Oregon | 30.12 | 765.0 | 30.22 | 767.6 | 47.0 | 8.3 | 62 | N | 8 | 3.6 | ..... | 0 | 8s | ..... | W | 0 | 0 | Cloudy | |
| Prescott, Arizona | 24.78 | 629.4 | 30.14 | 765.5 | 37 | 2.8 | 53 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Punta Rassa, Florida | 30.22 | 767.6 | 30.24 | 768.1 | 67 | 19.4 | 64 | NE | 9 | 4.0 | ..... | 5k | 0 | E | ..... | 0 | 0 | Fair | |
| Red Bluff, California | 29.61 | 752.1 | 29.97 | 761.2 | 57.5 | 14.2 | 84 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rio Grande City, Texas | 29.71 | 754.6 | 29.92 | 760.0 | 73 | 22.8 | 85 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | S | Inap. | Inap. | Cloudy | |
| Rochester, New York | 29.77 | 756.1 | 30.41 | 772.4 | 44 | 6.7 | 52 | SE | 6 | 2.7 | ..... | 5c | 0 | SE | ..... | 0.11 | 2.8 | Fair | |
| Roseburg, Oregon | 29.59 | 751.6 | 30.17 | 766.3 | 43.6 | 6.1 | 96 | E | 1 | 0.4 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Sacramento, California | 29.88 | 758.9 | 29.96 | 761.0 | 58 | 14.4 | 82 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.50 | 749.3 | 30.06 | 763.5 | 63 | 17.2 | 57 | S | 7 | 3.1 | ..... | 6ck;cs | Sm'e | S,Calm | ..... | 0 | 0 | Fair | |
| St. Marks, Florida | 30.25 | 768.3 | 30.27 | 768.8 | 65 | 17.2 | 78 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.01 | 736.8 | 29.81 | 757.2 | 57 | 13.9 | 75 | SE | 6 | 2.7 | ..... | 0 | 8s | ..... | S | Inap. | Inap. | Fair | |
| Salt Lake City, Utah | 25.75 | 654.0 | 30.08 | 764.0 | 40 | 4.4 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.28 | 743.7 | 29.86 | 758.4 | 59 | 15.0 | 94 | NW | 8 | 3.6 | ..... | ..... | 10n | ..... | NW | 1.71 | 43.4 | Heavy rain | |
| San Diego, California | 29.95 | 760.7 | 30.02 | 762.5 | 56 | 13.3 | 94 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.57 | 751.1 | 30.25 | 768.3 | 51 | 10.6 | 79 | Calm | 0 | 0 | ..... | 10k | Sm'e | W | Calm | 0 | 0 | Cloudy | |
| Sandy Hook, New Jersey | 30.37 | 771.4 | 30.40 | 772.1 | 45 | 7.2 | 68 | N | 8 | 3.6 | ..... | 2c | Haze | NW | Calm | 0 | 0 | Hazy | |
| San Francisco, California | 29.92 | 760.0 | 29.98 | 761.5 | 55.2 | 12.9 | 82 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 23.30 | 591.8 | 29.84 | 757.9 | 31 | — 0.6 | 69 | N | 1 | 0.4 | ..... | 1ck | 0 | Calm | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.20 | 767.1 | 30.29 | 769.4 | 68 | 20.0 | 65 | W | 5 | 2.2 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Shreveport, Louisiana | 29.77 | 756.1 | 29.98 | 761.5 | 63 | 17.2 | 94 | SE | 18 | 8.0 | ..... | ..... | 10n | ..... | Calm | 2.93 | 74.4 | Light rain | |
| Silver City, New Mexico | 24.31 | 617.5 | 30.58 | 776.7 | 40 | 4.4 | 56 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.26 | 768.6 | 30.30 | 769.6 | 60 | 15.6 | 77 | NE | 12 | 5.4 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Hazy | |
| Springfield, Massachusetts | 30.26 | 768.6 | 30.40 | 772.1 | 50 | 10.0 | 52 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Stockton, Texas | 26.96 | 684.8 | 29.96 | 761.0 | 50 | 10.0 | 86 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear | |
| Thatcher's Island, Mass | 30.30 | 769.6 | 30.36 | 771.1 | 42 | 5.6 | 66 | N | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Toledo, Ohio | 29.52 | 749.8 | 30.21 | 767.3 | 51 | 10.6 | 79 | E | 9 | 4.0 | ..... | 5c | Haze | Calm | Calm | 0 | 0 | Fair | |
| Tucson, Arizona | 27.54 | 699.5 | 30.09 | 764.3 | 53 | 11.7 | 30 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.72 | 754.9 | 30.23 | 767.8 | 44.0 | 6.7 | 68 | SE | 6 | 2.7 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 42 | 5.6 | 83 | S | ..... | ..... | 1 | ..... | 10s | ..... | SW | 0.22 | 5.6 | Cloudy | |
| Uvalde, Texas | 29.08 | 738.6 | 29.89 | 759.2 | 63 | 17.2 | 89 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 2.19 | 55.6 | Cloudy | |
| Vicksburg, Mississippi | 29.98 | 761.5 | 30.24 | 768.1 | 62 | 16.7 | 83 | SE | 3 | 1.3 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Virginia City, Montana | 24.35 | 618.5 | 29.83 | 757.7 | 37 | 2.8 | 53 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.60 | 751.8 | 29.97 | 761.2 | 54.3 | 12.4 | 61 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 30.31 | 769.9 | 30.43 | 772.9 | 54 | 12.2 | 55 | E | 4 | 1.8 | ..... | 1c;hz | Sm'e | NW | ..... | 0 | 0 | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 51 | 10.6 | 53 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.21 | 767.3 | 30.29 | 769.4 | 58 | 14.4 | 58 | NE | 9 | 4.0 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Winnemucca, Nevada | 25.76 | 654.3 | 30.12 | 765.0 | 42 | 5.6 | 50 | NE | 10 | 4.5 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Wood's Holl, Mass | 30.30 | 769.6 | 30.34 | 770.6 | 47 | 8.3 | 34 | N | 12 | 5.4 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yankton, Dakota | 28.65 | 727.7 | 29.94 | 760.5 | 48 | 8.9 | 78 | SW | 2 | 0.9 | ..... | 2c | 0 | SW | ..... | 0 | 0 | Fair | |
| Yuma, Arizona | 29.75 | 755.6 | 29.91 | 759.7 | 58 | 14.4 | 53 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.40 | 721.3 | 29.77 | 756.1 | 62 | 16.7 | 77 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Havana, Cuba, W. I | 30.09 | 764.3 | 30.14 | 765.5 | 74 | 23.3 | 52 | SE | 2.4 | 1.1 | ..... | 2ck | 0 | E | ..... | 0 | 0 | Fair | J. B. Gordon. |
| Kingston, Jamaica, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Chas. Hasselbrink. |
| Medellin, Colombia, S. A | 25.20 | 640.1 | ..... | ..... | 66.5 | 19.2 | 90 | Calm | ..... | ..... | 0 | 5cs | 2ks | ..... | ..... | 0.62 | 15.7 | ..... | James Gall. |
| Navassa, W. I. | 29.98 | 761.5 | 30.06 | 763.5 | 77 | 25.0 | ..... | NE | 18 | 8.0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Thomas Herran. |
| Paramaribo, D. Guiana, S. A | 30.00 | 762.0 | 30.00 | 762.0 | 82 | 27.8 | 83 | E | ..... | ..... | 2 | 3c | 5k | E | ..... | 0 | 0 | Partly cl'y | W. H. W. Jones. |
| Santiago de Cuba, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Fair | C. J. Hering. |
| St. Thomas, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| York Factory, B. A. | 30.18 | 766.6 | 30.24 | 768.1 | 28.0 | — 2.2 | 94 | S | 14 | 6.3 | ..... | 0 | 1s | ..... | NW | 0 | 0 | Fair | G. O. Gellich. |
| | | | | | | | | | | | | | | | | | | | J. Fortescue & W. Wood. |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.855 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.93 | 760.2 | 60 | 15.6 | 54 | 12.2 | 93 | SW | 4 | 1.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 30.35 | 770.9 | 67 | 19.4 | 67 | 19.4 | 79 | ENE | 7 | 3.1 | ..... | ..... | 2 | ..... | SW | 0 | 0 | ..... | ..... | Fair..... | |
| Navy Yard, Portsmouth, N.H | 30.33 | 770.4 | 64 | 17.8 | 40 | 4.4 | 91 | NW | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan.....* | 30.07‡ | 763.8‡ | ..... | ..... | 63.1 | 17.3 | 83 | SW | ..... | ..... | 6 | ..... | 2k | ..... | SW | 0 | 0 | ..... | ..... | Fair..... | |
| Adams, Panama .....* | 29.92 | 760.0 | 80 | 26.7 | 78 | 25.6 | 95 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Alaska, N. 50° 10′, W. 125° 22′..... | 30.23‡ | 767.8‡ | ..... | ..... | 43 | 6.1 | 68 | NNW | ..... | ..... | 1 | ..... | 2 | ..... | SE | 0 | 0 | Smooth | ..... | D. clouds..... | |
| Alliance, Palermo, Sicilly..... | 29.71‡ | 754.6‡ | ..... | ..... | 62 | 16.7 | 61 | NE | ..... | ..... | 1-2 | ..... | 10 | ..... | N;E | ..... | ..... | ..... | ..... | Threatening | |
| Ashuelot, Hong-Kong, China. ...*. | 29.94‡ | 760.5‡ | ..... | ..... | 75 | 23.9 | 77 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Light haze.. | |
| Canonicus, New Orleans, La.....*. | 30.15 | 765.8 | 50 | 10.0 | 70 | 21.1 | 80 | SE | ..... | ..... | 3 | ..... | 10? | ..... | SE | ..... | ..... | ..... | ..... | Fair..... | |
| Colorado, New York, N. Y..... | 30.43 | 772.9 | 56.5 | 13.6 | 50 | 10.0 | 45 | N | 7 | 3.1 | ..... | ..... | 2 | ..... | NNW | 0 | 0 | ..... | ..... | Fair..... | |
| Constitution N. 24° 37′, W. 29° 49′..... | 30.18‡ | 766.6‡ | ..... | ..... | 75 | 23.9 | 77 | ESE | ..... | ..... | 2 | ..... | 8? | ..... | Calm | ..... | ..... | Smooth | ..... | Clear?..... | |
| Despatch, Genoa, Italy..... | 29.69‡ | 754.1‡ | ..... | ..... | 66 | 18.9 | 64 | SSE | ..... | ..... | 2 | ..... | 2 | ..... | SE | ..... | ..... | Smooth | ..... | Clear..... | |
| Essex, Montevideo, Uruguay.*. | 30.11 | 764.8 | 66 | 18.9 | 66 | 18.9 | 88 | N | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Smooth | ..... | Fair ..... | |
| Franklin, Norfolk, Va.....*. | 30.49 | 774.4 | 60 | 15.6 | 55 | 12.8 | 50 | ENE | 14.4 | 6.4 | ..... | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Clear..... | |
| Gettysburg, Genoa, Italy .....*. | 29.67‡ | 753.6‡ | ..... | ..... | 68 | 20.0 | 65 | SSE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair..... | |
| Hartford, Buenos Ayres, S. A.....*. | 30.10 | 764.5 | 69 | 20.6 | 69 | 20.6 | 80 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ENE | 0 | 0 | Smooth | ..... | Clear. ..... | |
| Michigan, Erie, Pa.....†. | 30.11‡ | 764.8‡ | ..... | ..... | 51 | 10.6 | 59 | SSE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Monocacy. Shanghai, China.....*. | 30.21‡ | 767.3‡ | ..... | ..... | 53 | 11.7 | 48 | N | ..... | ..... | 1 | ..... | 10 | ..... | N | ..... | ..... | ..... | ..... | Misty..... | |
| Monongahela N. 30° 28′, E. 144° 06′.....*. | 30.19‡ | 766.8‡ | ..... | ..... | 66 | 18.9 | 79 | SSE | ..... | ..... | 4 | ..... | k | ..... | S;E | 0 | 0 | Light | S;E | D. clouds.... | |
| New Hampshire, Port Royal, S. C.....*. | 30.31 | 769.9 | 67 | 19.4 | 65 | 18.3 | 89 | WSW | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Misty..... | |
| Onward, Callao, Peru.....†*. | 30.02 | 762.5 | ..... | ..... | 63 | 17.2 | 89 | S | ..... | ..... | 2 | ..... | 10 | ..... | S | ..... | ..... | Long | W | Foggy ..... | |
| Palos. N, 32° 55′, E. 122° 20′..... | 30.26 | 768.6 | 57 | 13.9 | 48 | 8.9 | 63 | NNE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Long | N | Clear..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 53 | 11.7 | 80 | N | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Pensacola. S. 12° 12′, W. 72° 00′. .... | 29.86‡ | 758.9‡ | ..... | ..... | 62 | 16.7 | 94 | SSE | 9 | 4.0 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Overcast..... | |
| Plymouth. Portsmouth, N. H..... | 30.29‡ | 769.4‡ | ..... | ..... | 45 | 7.2 | 86 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Portsmouth, Hampton Roads, Va..... | 30.42‡ | 772.6‡ | ..... | ..... | 54 | 12.2 | 55 | E | ..... | ..... | 4 | ..... | 2 | ..... | N;E | 0 | 0 | Mod'ate | S;E | Clear..... | |
| Powhatan, Norfolk, Va..... | 30.37‡ | 771.4‡ | ..... | ..... | 55 | 12.8 | 22 | ENE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Quinnebaug, N. 37° 18′, E. 10° 08′..... | 29.81‡ | 757.2‡ | ..... | ..... | 58 | 14.4 | 82 | NNE | ..... | ..... | 3 | ..... | 10 | ..... | E | ..... | ..... | Smooth | ..... | Drizzling..... | |
| Ranger. Amoy, China.....*. | 29.93‡ | 760.2‡ | ..... | ..... | 73 | 22.8 | 95 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Richmond. N. 5° 57′ 03″, E. 95° 31′ 03″ | 29.82‡ | 757.4‡ | ..... | ..... | 84 | 28.9 | 87 | N | ..... | ..... | 1 | ..... | 2 | ..... | N | 0.3 | 8. | Long | N | Clear..... | |
| Rio Bravo, Brownsville, Texas..... | 29.93 | 760.2 | 76 | 24.4 | 75 | 23.9 | 100 | SE | ..... | ..... | 1 | ..... | 2 | ..... | W | ..... | ..... | ..... | ..... | Fair..... | |
| Santee, Annapolis, Md... ..... | 30.40‡ | 772.1‡ | ..... | ..... | 52 | 11.1 | 54 | NE | ..... | ..... | 2 | ..... | 2 | ..... | N | 0 | 0 | ..... | ..... | Clear..... | |
| Saratoga, Horta Bay, Fayal, Azores. | 30.08‡ | 764.0‡ | ..... | ..... | 64 | 17.8 | 89 | SSW | ..... | ..... | 6 | ..... | 10 | ..... | Calm | 0 | 0 | Heavy | SW | Overcast..... | |
| St. Louis, League Island, Pa ..... | 30.27 | 768.8 | 55 | 12.8 | 52 | 11.1 | 79 | NE | 7 | 3.1 | ..... | ..... | 5 | ..... | NNE | 0 | 0 | ..... | ..... | Fair ..... | |
| Trenton Villafranca, France...*. | 29.62‡ | 752.3‡ | ..... | ..... | 69 | 20.6 | 70 | S | ..... | ..... | 0-1 | ..... | 5 | ..... | Calm | 0 | 0 | Mod'ate | S | Fair..... | |
| Tuscarora. Port Sacrificios, Mex..*.. | 29.96‡ | 761.0‡ | ..... | ..... | 75 | 23.9 | 77 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Long | S;W | Hazy..... | |
| Vandalia N. 25° 27′, W. 73° 34′.... | 30.24‡ | 768.1‡ | ..... | ..... | 69 | 20.6 | 75 | ENE | ..... | ..... | 3 | ..... | 5 | ..... | NE | ..... | ..... | Mod'ate | E | Cloudy..... | |
| Wabash, Boston, Mass..... | 30.24‡ | 768.1‡ | ..... | ..... | 42 | 5.6 | 53 | NW | 6 | 2.7 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Fair ..... | |
| Wyoming, Athens, Greece.....*.. | 29.71‡ | 754.6‡ | ..... | ..... | 64 | 17.8 | 83 | S | ..... | ..... | 2 | ..... | 8 | ..... | S | ..... | ..... | Smooth | S | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | Character. | Direction from— | | |
| **CUNARD LINE MARINE SERIES.** Furnished by the co-operation of Ch. G. Francklyn, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Samaria, Capt. T. Roberts, N. 49° 28′, W. 46° 39′...† | | | 29.76 | 755.9 | 49 | 9.4 | | NW | | | 3 | | | | NW | Mod'ate cross | N;NW | Fair | M. C. Miles. |
| NOTE.—†Aneroid. | | | | | | | | | | | | | | | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | |
| §S.S. City of Tokio Capt. Maury N. 34° 32′, E. 141° 30′ | | 29.86‡ | 758.4‡ | 62 | 16.7 | | NNE | | | 7 | | 10 | | | 0.05 in. or 13. mm. | Heavy | NNE | Rainy | L. B. Walls. |
| S. S. Colima. N. 27° 57′, W. 115° 29′...† | | 30.04‡ | 763.0‡ | 63 | 17.2 | | NW | | | 3 | | 4 | | NW | 0 | Heavy; ground | NW | Misty | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota, Capt. H. G. Morse, | | | | | | | | | | | | | | | | | | | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly |
| S. S. Granada, Capt. Austin. | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, Sydney, N. S. W. | | 30.22‡ | 767.6‡ | | | | Calm | | | 0 | | | | WSW | | | | Fine | R. C. Ghest, 1st Officer |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office. §The date of the S. S. City of Tokio is uncertain, and may be in error one day. | | | | | | | | | | | | | | | | | | | |
| **WHITE STAR LINE MARINE SERIES.** Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |
| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, Capt. L. Meyer. N. 36° 20′, W. 146° 10′ | | 30.25‡ | 768.3‡ | 53 | 11.7 | 73 | N | | | 8 | | kn | | | Light | Heavy | N | Squally | D. A. Joyce. |
| S. S. Gaelic, N. 41° 10′, W. 137° 17′...* | | 30.38‡ | 771.6‡ | 45 | 7.2 | | N | | | 5 | | k | | N | Blank | High | N | D. clouds | Capt. W. H. Kidley. |
| S. S. Oceanic, Capt. J. Metcalf, | | | | | | | | | | | | | | | | | | | J. G. Cameron. |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the S. S. Oceanic is that at noon, local time, instead of that at 7:36 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |
| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** Furnished by the co-operation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 43° 42′, W. 44° 05′ | | 29.80‡ | 756.9‡ | | | | WNW | | | 6 | | 8 | | NW | | Rough | NW | Drizzling | Capt. G. Meyer. |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Corrections for temperature instrumental error and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |

## UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

| NAMES OF VESSELS. | True course toward. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Upper. | Lower. | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |

### AMERICAN S. S. CO. MARINE SERIES.

Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Indiana, Liverpool, Eng | | 29.73‡ | 755.1‡ | 55 | 12.8 | | NW | | | 2 | | 7 | | NW | Mod'ate | | | Cloudy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud-direction as toward instead of from; sea-swell in general terms, as published; rain-fall for Indiana and Ohio in general terms. ‡Corrections for temperature, instrumental error and elevation applied at this office.

### RED STAR LINE MARINE SERIES.

Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |

### ALLAN LINE MARINE SERIES.

Furnished by the co-operation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | J. Powell, 4th Officer. |
| S. S. Peruvian | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office.

### MARINE SERIES. (Miscellaneous.)

Furnished by the co-operation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Off Owl's Head, Me. | | 30.26‡ | 768.6‡ | 39 | 3.9 | 46 | N | 12 | 5.4 | | | 0 | | | 0.01 in. or 0.3 mm. | | | Clear | Capt. James Jorgensen. |
| Brigantine "George of Halifax" | | | | | | | | | | | | | | | | | | | Willard N. Pratt. |
| Schooner Harry and Fred, N. 34° 52', W. 70° 14' | | 30.11‡ | 764.8‡ | | | | N | 30 | 13.4 | | | 8 | | NNE | | Rough | N | Cloudy | Capt. George Gardner. |

Note.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Corrections for temperature, instrumental error and elevation applied at this office.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively by the letters c, k, s, n, d, f, p, hz., fg. and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 25, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | 30.24 | 768.0 | 70.2 | 21.2 | 62 | SSE | | | 2 | | 0 | | | 0 | 0 | Clear | Kesxuche. |
| Nemours | | | 30.13 | 765.3 | 61.5 | 16.4 | 73 | WNW | | | 3 | | 0 | | | 0 | 0 | Clear | Tourillere. |
| Algiers | | | 30.05 | 763.3 | 59.5 | 15.3 | 78 | NW | | | 6 | | 10 | | | 0.165 | 4.2 | Covered | Foufrede. |
| La Calle | | | | | | | | | | | | | | | | | | | Jacques. |
| Tunis | | | | | | | | | | | | | | | | | | | Gau. |
| Sfax | | | 30.07 | 763.7 | | | | | | | | | | | | | | | |
| Saida | | | 30.20 | 767.0 | 60.8 | 16.0 | 17 | N | | | 4 | | 0 | | | 0 | 0 | Clear | Herbin. |
| Tebessa | | | 30.11 | 764.9 | 48.2 | 9.0 | 65 | W | | | 7 | | 10 | | | 0.067 | 1.7 | Covered | Watrin. |
| Geriville | | | 30.15 | 765.7 | 57.2 | 14.0 | 11 | NNW | | | 4 | | 2 | | | 0 | 0 | Fair | Brugniaux. |
| Laghouat | | | 30.14 | 765.6 | 64.0 | 17.8 | 42 | WNW | | | 5 | | 0 | | | 0 | 0 | Clear | Bertrand. |
| Biskra | | | 30.13 | 765.4 | 71.6 | 22.0 | 30 | WNW | | | 4 | | 2 | | | 0 | 0 | Fair | Chanvaux. |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

## AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.22 | 742.1 | 29.76 | 756.0 | 53.8 | 12.1 | 82 | Calm | | | 0 | | 10 | | | 0.024 | 0.6 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29.08 | 738.7 | 29.86 | 758.5 | 44.6 | 7.0 | 77 | NNW | | | 1 | | 10 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 28.86 | 732.8 | 29.72 | 754.9 | 53.2 | 11.8 | 86 | NE | | | 2 | | 10kn | | | 0.246 | 6.25 | | Julius Mikolik. |
| Gratz | 28.57 | 725.6 | 29.81 | 757.2 | 54.1 | 12.3 | 45 | NW | | | 5 | | 9 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.28 | 718.3 | 29.66 | 753.4 | 54.8 | 18.2 | 53 | NW | | | 2 | | 4 | | | 0.051 | 1.30 | | Prof. A. Gottschling. |
| Kremsmünster | 28.56 | 725.4 | 29.91 | 759.7 | 47.5 | 8.6 | 70 | WNW | | | 2 | | 10 | | | 0.441 | 11.2 | | Prof. C. Wagner. |
| Lemberg | 28.66 | 727.9 | 29.62 | 752.4 | 59.5 | 15.3 | 71 | NE | | | 1 | | 10 | | | 1.201 | 30.5 | | Dr. T. Stanecki. |
| Pola | 29.71 | 754.4 | 29.81 | 757.2 | 60.6 | 15.9 | 72 | WNW | | | 3 | | 5 | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.27 | 743.4 | 29.72 | 755.0 | 59.7 | 15.4 | 64 | NW | | | 2 | | 10 | | | 0.102 | 2.6 | | Julius Csics, S. J. |
| Szegedin | 29.43 | 747.5 | 29.71 | 754.6 | 62.5 | 11.4 | 75 | S | | | 3 | | 10 | | | 0.260 | 6.60 | | Karl Stancel. |
| Trieste | 29.74 | 755.5 | 29.85 | 758.1 | 58.3 | 14.6 | 88 | NW | | | 1 | | 10 | | | 0 | 0 | | P. Busin. |
| Vienna | 29.16 | 740.6 | 29.88 | 759.0 | 46.2 | 7.9 | 68 | NNW | | | 4 | | 10 | | | 0.917 | 23.3 | | I. R. Central Met. Obs'y |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

## BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.88 | 759.0 | 30.08 | 764.1 | 52.9 | 11.6 | 67 | W | | | 1 | 4 | 1 | NW | NW | 0.148 | 3.75 | | Royal Observatory. |
| Furnes | 30.10 | 764.4 | 30.12 | 765.0 | 51.6 | 10.9 | 70 | NW | | | 1 | | 2 | | | 0.130 | 3.3 | Raining | M. E. de Cae. |
| Maeseyck | 29.96 | 761.0 | 30.00 | 764.2 | 54.0 | 12.7 | 82 | NW | | | 2 | | 7 | | | 0.047 | 1 2 | | M. Pierrot. |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

**Entered at the Post Office at Washington, D. C., as Second-Class Matter.**

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Upper. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.63 | 757.7 | 29.93 | 760.2 | 41.4 | 5.2 | ..... | SSE | 13 | 5.8 | ..... | ..... | 9 | ..... | ..... | 0.250 | 6.35 | Overcast | W. Boswell. |
| Ardrossan | 29.79 | 756.7 | 29.81 | 757.2 | 45 | 7.2 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.72 | 754.9 | 53.3 | 11.8 | ..... | S | 15 | 6.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Rain & fog | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.90 | 759.4 | 47.3 | 8.5 | ..... | ESE | 16 | 7.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.94 | 760.5 | 47.3 | 8.5 | ..... | S | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Thomas Mackereth. |
| Bradford, Yorkshire | 29.54 | 750.3 | 29.94 | 760.5 | 48.9 | 9.4 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.01 | 0.3 | Raining | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.93 | 760.2 | 29.96 | 761.0 | 84 | 28.9 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 30.01 | 762.2 | 58.0 | 14.4 | ..... | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | H. Todd. [C. |
| Cardington | ..... | ..... | 29.98 | 761.5 | 58.0 | 14.4 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.93 | 760.2 | 30.06 | 763.5 | 55.6 | 13.1 | ..... | SW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.46 | 722.9 | 29.95 | 760.7 | 45.0 | 7.2 | ..... | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Rain & fog | Alexander Watt. |
| Donaghadee | 29.75 | 755.6 | 29.79 | 756.7 | 48 | 8.9 | ..... | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | J. Mac Gowan. |
| Dover | 30.06 | 763.5 | 30.08 | 764.0 | 49 | 9.4 | ..... | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Misty | J. Costello. |
| Falmouth, Observatory | 29.79 | 754.4 | 29.93 | 760.2 | 51.4 | 10.8 | ..... | SSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | The Staff. |
| Fort Napier, (Natal) | 27.68 | 703.1 | 29.95 | 761.5 | 75.8 | 24.3 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.69 | 754.1 | 29.92 | 760.0 | 85 | 29.4 | ..... | N | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's college | ..... | ..... | ..... | ..... | 54 | 12 2 | ..... | SW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 30.15 | 765.8 | 30.20 | 767.1 | 71.4 | 21.9 | ..... | W | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.63 | 752.6 | 29.84 | 757.9 | 44.4 | 6.9 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | D. G. Maclean. [C. |
| Great Yarmouth | 30.07 | 763.8 | 30.08 | 764.0 | 45 | 7.2 | ..... | SSE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | Misty | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.87 | 758.7 | 30.04 | 763.0 | 56.9 | 13.8 | ..... | SSW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | The staff, for G.B. Airy. |
| Guernsey | 29.84 | 757.9 | 30.06 | 763.5 | 54 | 12.2 | ..... | SSE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | Dr. S.E.Hoskins, F.R.S. |
| Helston | 29.79 | 756.7 | 29.91 | 759.7 | 57 | 13.9 | ..... | SW | ..... | ..... | 4 | ..... | 3n | ..... | ..... | 0.23 | 5.8 | Fine | M. P. Moyle. |
| Holyhead | 29.74 | 755.4 | 29.79 | 756.7 | 48 | 8.9 | ..... | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | John Tilston. |
| Jersey | 29.83 | 757.7 | 30.12 | 765.0 | 52.6 | 11.4 | ..... | S | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy | J. Fisher. |
| Kew, Observatory | 30.00 | 762.0 | 30.04 | 763.0 | 55.9 | 13.3 | ..... | S | 16 | 7.2 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Misty | The Meteorological Of. |
| Leicester, Museum | 29.65 | 753.1 | 29.90 | 759.4 | 55.0 | 12.8 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Wm, J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.62 | 752.3 | 29.70 | 754.4 | 62 | 16.7 | ..... | NW | ..... | ..... | 3 | ..... | 4k | ..... | ..... | Blank | Blank | D. clouds | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.74 | 755.4 | 29.83 | 757.7 | 51 | 10.6 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.16 | 766.1 | 74.0 | 23.3 | ..... | NE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.80 | 756.9 | 29.99 | 761.7 | 55.8 | 13.2 | ..... | SSW | ..... | ..... | 5 | ..... | 10cs;d | ..... | SSW | 0.083 | 2.11 | Overcast | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.44 | 747.8 | 29.97 | 761.2 | 50.5 | 10.3 | ..... | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.01 | 762.2 | 53 | 11.7 | ..... | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | H. E. Bellamy. |
| Plymouth | 29.89 | 759.2 | 29.97 | 761.2 | 50.5 | 10.3 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | John Merrifield. |
| Roche's Point | 29.76 | 755.9 | 29.84 | 757.9 | 56 | 13.3 | ..... | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded | Wm. Kennedy, |
| Saint Ann's Head | 29.68 | 753.9 | 29.95 | 760.7 | 46 | 7.8 | ..... | SSE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 42.7 | 5.9 | ..... | SE | 29 | 13.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.67 | 753.6 | 29.74 | 755.4 | 64.2 | 17.9 | ..... | SSE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | Blank | Blank | Gloomy | W. H. Lyne. |
| Sheffield | 29.68 | 753.9 | 29.96 | 761.0 | 53.9 | 12.2 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.10 | 2.5 | Overcast | W. F. Cooper. |
| Silloth Rectory | 29.82 | 757.4 | 29.85 | 758.2 | 48.8 | 9.3 | 90 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.107 | 2.72 | Raining | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.53 | 750.0 | 29.94 | 760.5 | 47.0 | 8.3 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Rev. S. J. Perry. |
| Straitfield, Turgiss | 29.85 | 758.2 | 30.07 | 763.8 | 54.8 | 12.7 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Squally | C. H. Griffith, F. M. S. |
| Truro, Royal Institution | 29.92 | 760.0 | 29.96 | 761.0 | 55 | 12.8 | ..... | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | W. Newcombe. |
| Valencia, Observatory | 29.77 | 756.1 | 29.79 | 756.7 | 55.1 | 12.8 | ..... | SW | 31 | 13.9 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | The Meteorological Of. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.08 | 764.0 | 30.12 | 765.0 | 64 | 17.8 | 53 | SSE | 5 | 2.2 | ..... | 0 | 1 | ..... | ..... | 0 | 0 | Fine | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.06 | 763.5 | 63 | 17.2 | 72 | SE | ..... | ..... | 1 | ..... | 5k | ..... | ..... | 0.03 | 0.8 | Hazy | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.89 | 759.2 | 46.8 | 8.2 | ..... | S | ..... | ..... | 1 | ..... | 10ks | ..... | ..... | 0.10 | 2.5 | Light rain | Andrew Gibb. |
| Mauritius, Observatory | 29.88 | 758.9 | 30.07 | 763.9 | 78.4 | 25.8 | 63 | ESE | 10.0 | 4.5 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | Fine | C. Meldrum. |
| Melbourne, Observatory | 30.04 | 763.0 | 30.13 | 765.3 | 62.8 | 16.8 | 59 | NE | 12 | 5.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Very fine | R. L. J. Ellery. |
| Monach Lt-house, (Hebrides) | ..... | ..... | 29.69 | 754.1 | 44 | 6.7 | ..... | SSE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.04 | 763.0 | 38 | 3.3 | ..... | W | ..... | ..... | 4 | 10 | 10 | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

| BRITISH MARINE SERIES. VESSELS. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Upper. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 42', E. 29° 25' | ENE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Showery | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle-Isle | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. J. Brown. |
| Ship British Commodore, N. 38° 40', W. 74° 06' | S | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 2 | S | ..... | Capt. J. W. Thorne. |
| —— City of Agra, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W.R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have generally been carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS,

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.20 | 665.5 | 29.92 | 760.0 | 67.6 | 19.8 | 89 | SE | ..... | ..... | 2 | 3c;ck;s | ..... | ..... | ..... | 0.004 | 0.1 | ..... | Federico Maison |

NOTE.—For St. Jose the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches for an altitude of 1,145 meters, or 3,756.6 feet; the distinction between the upper and lower clouds is not always made; the rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.98 | 761.6 | 30.03 | 762.8 | 44.4 | 6.9 | 56 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 30.06 | 763.4 | 30.08 | 763.9 | 45.0 | 7.2 | 70 | W | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.98 | 761.5 | 30.02 | 762.6 | 32.7 | 0.4 | 78 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Farõe) | 29.96 | 761.0 | 30.00 | 761.9 | 43.9 | 6.6 | 61 | NE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.83 | 757.7 | 30.00 | 762.0 | 45.7 | 7.6 | 89 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.68 | 753.8 | 30.23 | 767.8 | 55.4 | 13 | 63 | W | ..... | ..... | 1 | ..... | 5 | ..... | NW | 0 | 0 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 30.04 | 762.9 | 30.15 | 765.7 | 60.8 | 16.0 | 56 | W | ..... | ..... | 1 | ..... | 2 | ..... | E | 0 | 0 | Slightly cld'y | Bonvallet, Director |
| Avignon, Normal School | 29.95 | 760.8 | 30.03 | 762.8 | 63.7 | 17.6 | 52 | N | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | Giraud, Director |
| Bar-sur-Seine | 29.58 | 751.4 | 30.15 | 765.7 | 51.4 | 10.8 | 73 | N | ..... | ..... | 1 | ..... | 10 | ..... | NW | 0.031 | 0.8 | Covered | O. Saillard, Director. |
| Beauvais, Normal School | 29.87 | 758.6 | 30.13 | 765.3 | 57.2 | 14.0 | 57 | WNW | ..... | ..... | ..... | ..... | 8 | ..... | WNW | 0 | 0 | Very cloudy | Frere Eugene Marie, Dr |
| Besançon, Normal School | 29.27 | 743.4 | 30.18 | 766.5 | 50.2 | 10.1 | 77 | SW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0.59 | 15. | Cloudy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.33 | 744.9 | 30.24 | 768.2 | 49.5 | 9.7 | 83 | W | ..... | ..... | 1 | ..... | n | N | N | 0.59 | 15. | ..... | Marlot, Director |
| Bourges, Normal School | 29.65 | 753.2 | 30.21 | 767.4 | 55.0 | 12.8 | 78 | W | ..... | ..... | 1 | ..... | 10kn | SE | W | 0.059 | 1.5 | Raining | A. Waquet, Director |
| Brest, Naval Observatory | 29.76 | 756.0 | 30.01 | 762.2 | 53.2 | 11.8 | 90 | SSW | ..... | ..... | 4 | ..... | 10 | ..... | SW | ..... | ..... | Raining | De Rermaree, Director |
| Carcassonne, Normal School | 29.82 | 757.3 | 30.23 | 767.9 | 55.4 | 13 | 66 | NW | ..... | ..... | 2 | ..... | 5 | NW | NW | 0.378 | 9.6 | Cloudy | September, Director. |
| Caen, Normal School | 29.99 | 761.8 | 30.03 | 762.7 | 61.2 | 16.2 | 52 | SW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0.008 | 0.2 | Cloudy | Lair, Director. |
| Chartres, Normal School | 29.75 | 755.6 | 30.31 | 769.8 | 52.2 | 11.2 | 85 | SW | ..... | ..... | 1 | ..... | 10 | ..... | SE | 0.047 | 1.2 | Covered | Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.83 | 757.6 | 30.15 | 765.7 | 55.4 | 13.0 | 66 | WSW | ..... | ..... | 2 | ..... | 5 | NW | NW | 0 | 0 | Cloudy | Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.83 | 732.3 | 30.20 | 767.1 | 52.0 | 11.1 | 63 | W | ..... | ..... | 2 | ..... | 10 | ..... | NW | 0.031 | 0.8 | ..... | Alluard, Director. |
| Commercy, Normal School | 29.28 | 743.7 | 30.14 | 765.6 | 51.3 | 10.7 | 73 | WNW | ..... | ..... | 1 | ..... | 5kn | ..... | WNW | 0 | 0 | Cloudy | Dr. Coulet, Director. |
| Commune de Gréasque* | 28.84 | 732.4 | 29.98 | 761.4 | 60.8 | 16 | 44 | NW | ..... | ..... | 4 | ..... | 2 | ..... | NW | 0 | 0 | ¼ covered | L. Kina, Director. |
| Grenoble, Normal School | 29.37 | 745.9 | 30.14 | 765.6 | 50.7 | 10.4 | 68 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.673 | 17.10 | Raining | Ablard, Director |
| La Roche-sur-Yon, N. School | 30.04 | 763.0 | 30.26 | 768.5 | 58.3 | 14.6 | 70 | W | ..... | ..... | 1 | ..... | 8 | ..... | W | 0 | 0 | Very cloudy | Mouillot, Director |
| Le Mans, Normal School | 29.87 | 758.8 | 30.18 | 766.6 | 58.1 | 14.5 | 61 | WNW | ..... | ..... | 3 | ..... | 8 | WNW | WNW | 0 | 0 | Very cloudy | Poirrier, Director |
| Lons-Le-Saulnier, N. School | 29.24 | 742.7 | 30.17 | 766.4 | 52.0 | 11.1 | 68 | NW | ..... | ..... | 2 | ..... | 8kn | ..... | N | 0.55 | 14. | Very cloudy | A. Baudry, Director. |
| Lorient, Naval Observatory | 30.00 | 761.9 | 30.10 | 764.4 | 57.2 | 14.0 | 80 | S | ..... | ..... | 6 | ..... | ..... | ..... | S | 0.008 | 0.2 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Galzin, Director. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff |
| Mirecourt, Normal School | 29.03 | 737.3 | 30.09 | 764.3 | 50.4 | 10.2 | 79 | WNW | ..... | ..... | 1 | ..... | 10 | ..... | SE | 0.12 | 3. | Covered | Barbier, Director. |
| Nismes, Normal School | 29.82 | 757.4 | 30.02 | 762.5 | 63.3 | 17.4 | 41 | NW | ..... | ..... | 6 | ..... | 2 | ..... | NW | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 29.08 | 738.6 | 30.16 | 766.0 | 54.0 | 12.2 | 52 | N | ..... | ..... | 4 | ..... | ..... | N | N | 0 | 0 | ..... | Cantier, Director. |
| Puy de Dome (Summit) Obs. | 25.23 | 640.9 | ..... | ..... | 31.6 | — 0.2 | 100 | NW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.827 | 21.0 | Dense fog | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.25 | 768.3 | 30.28 | 769.1 | 58.6 | 14.8 | 60 | W | ..... | ..... | 1 | ..... | 8 | NW | W | 0.08 | 2. | ¾ covered | Lt. E. Decante, Director. |
| Rouen, Normal School | 30.06 | 763.5 | 30.15 | 765.7 | 56.8 | 13.8 | 87 | WNW | ..... | ..... | 1 | ..... | 8 | ..... | W | 0.004 | 0.1 | Very cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 30.06 | 763.6 | 30.09 | 764.3 | 58.6 | 14.8 | 61 | S | ..... | ..... | 3 | ..... | 5 | SW | SW | 0 | 0 | Cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.99 | 761.7 | 30.15 | 765.9 | 59.0 | 15.0 | 59 | WSW | ..... | ..... | 1 | ..... | ..... | ..... | W | 0.028 | 0.7 | Clearing | E. Renou, Director. |
| Tarbes, Normal School | 29.27 | 743.5 | 30.37 | 771.3 | 53.6 | 12 | 65 | S | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Huguet, Director. |
| Toulouse, Observatory | 29.58 | 751.3 | 30.31 | 769.8 | 56.5 | 13.6 | 75 | WNW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0.114 | 2.9 | ..... | Mercadier Julier. |
| Versailles Observatory | 29.65 | 753.2 | 30.15 | 765.8 | 55.8 | 13.2 | 62 | NW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.071 | 0.18 | ..... | Dr. A. Berigny, Director |
| Villefranche-sur-Saone, N.S. | 29.44 | 747.8 | 30.16 | 766.0 | 54.9 | 12.7 | 85 | NW | ..... | ..... | 2 | ..... | 8 | ..... | NE | 0 | 0 | Very cloudy | Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.78 | 756.4 | 29.81 | 757.1 | 80.6 | 27 | .. | .. | .. | .. | .. | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marcl6si. |
| Lyons Obs'y, (Park Station) | 29.54 | 750.4 | 30.16 | 766.0 | 55.4 | 13.0 | 51 | NNE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | Mr. Jays. |
| Mont-Louis | 24.90 | 632.5 | 30.22 | 767.5 | 43.7 | 6.5 | 43 | W | 18.6 | 8.3 | ..... | ..... | 5 | ..... | N | 0.028 | 0.7 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.87 | 758.7 | 65.8 | 18.8 | 66 | NNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.87 | 758.8 | ..... | ..... | 55.8 | 13.2 | 65 | W | ..... | ..... | 1 | ..... | 6 | ..... | NW | 0 | 0 | ..... | Marié Davy, Director. |
| Perpignan | 30.09 | 764.2 | 30.19 | 766.9 | 59.0 | 15.0 | 36 | NW | 29.8 | 13.3 | ..... | ..... | 6 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.61 | 574.1 | ..... | ..... | 33.4 | 0.8 | ..... | N | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0.051 | 1.29 | Snowy | Gen'l de Nansouty. |
| Tours | 29.99 | 761.7 | 30.19 | 766.7 | 58.6 | 14.8 | 47 | NNW | ..... | ..... | 1 | ..... | 6 | ..... | NNW | 0.020 | 0.5 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.25 | 768.3 | 30.27 | 768.9 | 51.8 | 11.0 | 74 | ENE | 0.4 | 0.2 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | Fair | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand, Nice and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1.467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi. (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135.0 millimeters, or 5 315 inches has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.10 | 739.1 | 29.94 | 760.5 | 56.7 | 13.7 | 28 | N | | | 4 | | 1 | | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.87 | 758.6 | 30.04 | 763.0 | 49.1 | 9.5 | 46 | NE | | | 1 | | 8 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.43 | 747.6 | 29.97 | 761.1 | 38.3 | 3.5 | 89 | NW | | | 3 | | 10 | NW | | 0.424 | 10.78 | | Royal University Obs'y |
| Carlsruhe | 29.60 | 751.7 | 30.02 | 762.6 | 48.9 | 9.4 | 94 | SSW | | | 1 | | 10 | NW | | 0.551 | 14.0 | Thunder-storm. | Albert Senz. |
| Cassel | 29.44 | 747.8 | 30.05 | 763.2 | 54.7 | 12.6 | 30 | NE | | | 2 | | 2 | NE | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.89 | 759.3 | 30.06 | 763.4 | 53.8 | 12.1 | 72 | N | | | 3 | | 8 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.66 | 753.4 | 30.03 | 762.7 | 56.8 | 13.8 | | WNW | | | 2 | | 8 | | | Inap. | Inap. | | Physical Society. |
| Freienwalde on the Oder | 29.98 | 761.4 | 30.02 | 762.4 | 47.7 | 8.7 | 69 | N | | | 4 | | 10ks | N | | 0 | 0 | | Assmann., M. D. |
| Friedrichshafen | 28.59 | 726.2 | 30.04 | 762.9 | 50.9 | 10.5 | 76 | WNW | | | 6 | | 10 | W | | 0.150 | 3.8 | Raining | M. Wilhelm. |
| Hamburg | 30.02 | 762.6 | 30.10 | 764.4 | 50.4 | 10.2 | 45 | NE | | | 1 | | 9k | W | | 0 | 0 | Fair | Captain F. Hegeman. |
| Kiel | 30.07 | 763.6 | 30.08 | 764.0 | 48.6 | 9.2 | 51 | NNE | | | 1 | | 6 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.72 | 754.9 | 29.80 | 757.0 | 44.2 | 6.8 | 89 | W | | | 3 | | 8 | | | 0.220 | 5.6 | | Prof. E Luther. |
| Köslin | | | 29.94 | 760.5 | 34.5 | 1.4 | | NE | | | 4 | | 5 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.23? | 742.4? | 29.65? | 753.1? | 48.6 | 9.2 | 56 | NNW | | | 2 | | 8 | NW | | 0 | 0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.74 | 755.5 | 29.79 | 756.7 | 48.2 | 9.0 | 84 | NNE | | | 2 | | 10n | | | | | | Skalweit. |
| Neufahrwasser | 29.87 | 758.8 | 29.89 | 759.2 | 38.3 | 3.5 | 85 | NNW | | | 4 | | 10 | | | 0.402 | 10.2 | | A. Lothes. |
| Posen | 29.69 | 754.1 | 29.99 | 761.7 | 36.7 | 2.6 | 89 | NW | | | 6 | | 10 | | | 0.016 | 0.4 | Snow & rain | Dr. Magener. |
| Strassburg (in Alsace) | 29.54 | 750.3 | 30.09 | 764.3 | 55.2 | 12.9 | 71 | W | | | 3 | | 10 | W | | 0.617 | 15.68 | | Imp. University Observatory. |
| Stuttgart | 29.06 | 738.0 | 30.00 | 762.1 | 50.9 | 10.5 | 84 | W | | | 1 | | 10 | | | 0.161 | 4.1 | Rainy | Prof. Schoder. |
| Treves (Trier) | 29.50 | 749.4 | 30.03 | 762.7 | 53.2 | 11.8 | 84 | E | | | 1 | | 10 | | | 0.338 | 8.57 | Graupelnd. | Prof. Flesch. |
| Weissenburg (Bavaria) | 28.44 | 722.4 | 29.95 | 760.7 | 54.3 | 12.4 | 49 | NW | 13 | 6 | | | 7ck | NNW | WNW | 0 | 0 | Light fog | Dr. Van Bebber |
| Wustrow, Naval School | 30.03 | 762.8 | 30.06 | 763.4 | 45.3 | 7.4 | 68 | NNW | | | 2 | | 4s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.07 | 738.4 | 29.47 | 748.4 | 59.9 | 15.5 | | NE | | | 7.5 | | | | | | | Covered | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.79 | 756.8 | 29.84 | 758.0 | 84.9 | 29.4 | 64 | WSW | | | | | | | | 0 | 0 | Blue sky | |
| Deesa | | | | | 96.8 | 36.0 | 3 | NW | 9.1 | 4.1 | | | 5 | SW | | 0 | 0 | D. clouds | |
| Bombay | 29.75 | 755.7 | 29.79 | 756.6 | 85.7 | 29.8 | 74 | NW | 12 | 5.4 | | | 4 | | SW | 0 | 0 | D. clouds | |
| Poona | 27.82 | 706.8 | 29.76 | 755.9 | 96.1 | 35.6 | 22 | WNW | | | | | 2 | | | 0 | 0 | D clouds | |
| Lahore | 28.99 | 736.3 | 29.70 | 754.4 | 100.0 | 37.8 | 15 | Calm | 1.6 | 0.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.34 | 694.6 | 29.84 | 757.8 | 85.7 | 29.8 | 75 | Calm | | | | | 8 | E | E | 0.10 | 2.5 | Thunder-storm | |
| Roorkee | 28.82 | 731.9 | 29.69 | 754.0 | 94.6 | 34.8 | 9 | NW | 2.2 | 1.0 | | | 0 | | | 0 | 0 | | |
| Agra | 29.20 | 741.5 | 29.74 | 755.4 | 97.1 | 36.2 | 14 | W | | | | | 3 | | W | 0 | 0 | | |
| Nagpur | 28.69 | 728.7 | 29.69 | 754.0 | 102.9 | 39.4 | 17 | NW | 7.4 | 3.3 | | | | | | 0 | 0 | Blue sky | |
| Lucknow | 29.33 | 744.9 | 29.69 | 754.1 | 95.1 | 35.1 | 39 | WNW | 1.9 | 0.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.42 | 747.3 | 29.73 | 755.0 | 95.1 | 35.1 | 13 | Calm | 3.4 | 1.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.51 | 749.6 | 29.69 | 754.0 | 98.2 | 36.8 | 10 | W | 1.4 | 0.6 | | | 2 | W | W | 0 | 0 | | |
| Hazaribagh | 27.75 | 704.7 | 29.69 | 754.2 | 93.8 | 34.3 | 27 | WNW | 6.4 | 2.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.68 | 753.8 | 29.76 | 755.8 | 89.1 | 31.7 | | S | 8 | 3.6 | | | 3 | | | 0 | 0 | | |
| Calcutta (Alipore) | 29.75 | 755.5 | 29.77 | 756.1 | 87.8 | 31.0 | 70 | SSW | 10 | 4.5 | | | 7 | W | | 0 | 0 | Threatening | |
| Goalpara | 29.27 | 743.5 | 29.65 | 753.2 | 88.2 | 31.2 | 57 | Calm | 5.0 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.71 | 754.7 | 29.80 | 757.0 | 85.6 | 29.8 | 76 | SSW | 6.5 | 2.9 | | | 2 | | | 0 | 0 | Misty | |
| Sibsagar | 29.44 | 747.6 | 29.77 | 756.2 | 75.2 | 24.0 | 89 | ENE | 1.5 | 0.7 | | | 10 | SW | SW | 0.17 | 4.3 | D. clouds | |
| Jubbulpore | 28.40 | 721.4 | 29.72 | 754.8 | 97.7 | 36.5 | 11 | Calm | 3.6 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |
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Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'r 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.43 | 747.4 | 29.84 | 757.8 | 58.5 | 14.7 | 70 | SW | 0.7 | 0.3 | ..... | ..... | 10 | ..... | ..... | 0.610 | 15.5 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.28 | 743.8 | 29.80 | 756.9 | 69.8 | 21.0 | 19 | WNW | ..... | ..... | 2 | ..... | 1 | NNE | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.71 | 754.5 | 29.82 | 757.3 | 62.1 | 16.7 | 62 | SSE | 1.3 | 0.6 | ..... | ..... | 5 | SW | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni. |
| Moncalieri | 28.93 | 734.9 | 29.83 | 757.7 | 65.5 | 18.6 | 38 | W | 2.5 | 1.1 | ..... | ..... | 1 | ENE | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.64 | 752.9 | 29.83 | 757.7 | 69.3 | 20.7 | 36 | N | 7.4 | 3.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.96 | 710.3 | 29.87 | 758.6 | 61.9 | 16.6 | 26 | NNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.79 | 756.6 | 29.84 | 757.8 | 58.3 | 14.6 | 67 | N | 8.7 | 3.9 | ..... | ..... | 7 | E | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.56 | 750.9 | 29.82 | 757.4 | 66.2 | 19.0 | 45 | WSW | ..... | ..... | 2 | ..... | 2 | NE | ..... | 0 | 0 | ..... | Cav. F. Meucci |
| Leghorn | 29.73 | 755.2 | 29.82 | 757.3 | 60.8 | 16.0 | 80 | W | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 29.60 | 751.7 | 29.77 | 756.1 | 67.3 | 19.6 | 51 | W | 3.8 | 1.7 | ..... | ..... | 4 | ..... | ..... | 0.130 | 3.3 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.49 | 749.1 | 29.74 | 755.5 | 60.3 | 15.7 | 54 | NE | 12.5 | 5.6 | ..... | ..... | 6 | N | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.84 | 732.6 | 29.72 | 754.8 | 60.8 | 16.0 | 75 | NW | 5.6 | 2.5 | ..... | ..... | 9 | ..... | ..... | 0.039 | 1.0 | ..... | Prof. D. Conti. |
| Cagliari | 29.63 | 752.5 | 29.82 | 757.4 | 62.1 | 16.7 | 60 | NW | ..... | ..... | 4 | ..... | 8 | N | ..... | 0.669 | 17.0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.53 | 750.0 | 29.78 | 756.4 | 60.1 | 15.6 | 57 | W | 9.8 | 4.4 | ..... | ..... | 8 | ..... | ..... | 0.287 | 7.3 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.70 | 754.3 | 29.77 | 756.2 | 60.1 | 15.6 | 63 | NNE | 8.7 | 3.9 | ..... | ..... | 8 | WSW | ..... | 0.118 | 3.0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.26 | 743.2 | 29.82 | 757.3 | 60.1 | 15.6 | 53 | WSW | 3.8 | 1.7 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 29.94 | 760.5 | 29.96 | 761.0 | 50.7 | 10.4 | 68 | NNE | 5.1 | 2.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.81 | 757.2 | 30.02 | 762.5 | 51.1 | 10.6 | 66 | SSW | 0.9 | 0.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | S. Takehayashi. |
| Tokei, (Yeddo) Observatory | 29.66 | 753.3 | 29.73 | 755.1 | 58.4 | 14.7 | 89 | NNW | 8.7 | 3.9 | ..... | ..... | 10n | ..... | ..... | 0.730 | 18.54 | Raining | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.04 | 636.0 | 30.16 | 766.0 | 48.2 | 9.0 | 40 | Calm | ..... | ..... | 0 | 2 | 0 | ..... | ..... | ..... | ..... | ..... | Prof. L. Perez. |
| Leon | 24.36 | 618.9 | 30.05 | 763.3 | 57.6 | 14.2 | 61 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.04 | 585.2 | 30.01 | 762.3 | 55.0 | 12.8 | 45 | Calm | 0 | 0 | ..... | 0 | 2k | ..... | ..... | 0 | 0 | Hazy | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 51.4 | 10.8 | 37 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | M. V. de Leon, M. E. |
| Tlacotalpam | 30.19 | 766.7 | 30.20 | 767.0 | 77.0 | 25.0 | 90 | SE | ..... | ..... | 1 | 0 | 10 | ..... | SE | 0 | 0 | Clear | M. M. Chazaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Foggy | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | 22.49 | 571.1 | 30.10 | 764.4 | 56.5 | 13.6 | 35 | Calm | ..... | ..... | 0 | 0 | 1s | ..... | ..... | 0 | 0 | Very clear | J. Castrillon. |
| Puebla, (Catholic Institute) | 23.36 | 593.2 | 30.12 | 765.0 | 51.8 | 11.0 | 69 | NE | 1.3 | 0.6 | ..... | 0 | 1 | ..... | Calm | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | 28.37 | 718.9 | 29.96 | 761.1 | 72.3 | 23.4 | 44 | NE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Clear | M. V. de Leon, C. E. |
| Colima | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

NOTE.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 507.3 m., or 1,664.4 ft. The data are published as given, except the conversions, which have been revised; the instrumental correction —0.88 mm., has been applied at this office to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.12 | 765.0 | 30.12 | 765.0 | 50.0 | 10.0 | ..... | W | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Groningen | 30.04 | 763.0 | 30.10 | 764.4 | 51.3 | 10.7 | ..... | ENE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.217 | 5.5 | ..... | |
| Helder | 30.10 | 764.4 | 30.10 | 764.4 | 46.2 | 7.9 | ..... | NE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 30.09 | 764.2 | 30.09 | 764.2 | 56.3 | 13.5 | 64 | WNW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.031 | 0.8 | ..... | |
| Utrecht | 30.03 | 762.8 | 30.08 | 764.0 | 54.5 | 12.5 | 62 | NNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | H. v. d. Brink. |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.01 | 762.3 | 30.07 | 763.7 | 43.2 | 6.2 | 42 | WNW | 2.5 | 1.1 | ..... | ..... | 6 | ..... | ..... | 0.087 | 2.2 | ..... | |
| Brönö | 30.06 | 763.6 | 30.10 | 764.6 | 39.9 | 4.4 | 47 | SSW | 9 | 4 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.90 | 759.5 | 30.05 | 763.3 | 47.1 | 8.4 | 37 | NNE | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.57 | 751.1 | 29.61 | 752.2 | 37.8 | 3.2 | 66 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p. m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra (Azores) | 30.15 | 765.7 | 30.34 | 770.5 | 64.0 | 17.8 | 92 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.354 | 9.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.30 | 744.3 | 30.31 | 769.9 | 69.8 | 21.0 | 46 | S | 4.9 | 2.2 | ..... | ..... | 7 | WNW | ..... | 0 | 0 | ..... | Dr. A.M. R. dos Santos. |
| Funchal (Madeira) | 30.19 | 766.8 | 30.28 | 769.0 | 74.8 | 23.8 | 25 | E | 8.7 | 3.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 30.02 | 762.6 | 30.38 | 771.7 | 65.1 | 18.4 | 48 | NNW | 7.4 | 3.3 | ..... | ..... | 6 | N | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada (Azores) | 30.30 | 769.7 | 30.37 | 771.5 | 70.2 | 21.2 | 77 | SSE | ..... | ..... | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from — | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias. N. 36° 49,′ W. 11° 41′ | ..... | ..... | 30.41 | 772.4 | 66.6 | 19.2 | ..... | NE | ..... | ..... | 3 | ..... | 5 | ..... | ENE | 2 | ..... | D. clouds | A. G. da Silva Costa. Com'd.t. A.M.de Sande, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Duque da Terceira, San Jose de Bissao, Senegambia | ..... | ..... | 30.06 | 763.5 | 74.3 | 23.5 | ..... | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 1 | ..... | Blue sky | C.C.da Fonseca Ferreira, Comd't A. D. Pedroso, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, S. 5° 19′, E. 10° 53′ | ..... | ..... | 29.88 | 758.9 | 83.5 | 28.6 | ..... | SSE | ..... | ..... | 1 | ..... | 3 | ..... | SE | 1 | SE | D clouds | A.J.de Mattos, Com'd't. J.T.d'Oliveria, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Rio Lima, Capt. S. C. da Silva Costa. San Jose de Bissao, Senegambia | ..... | ..... | 29.93 | 760.1 | 82.8 | 28.2 | ..... | SW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 1 | ..... | D. clouds | A. Ferreira, 2d Lt F. Teixeira da Silva, Com'd't. |
| Sá da Bandeira | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Tejo. Macao, China | ..... | ..... | 30.00 | 762.1 | 76.5 | 24.7 | ..... | SSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | ..... | Blue sky | J. M. T. Guimaraes, Com'd't. |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.40 | 746.7 | 29.83 | 757.6 | 43.9 | 6.6 | 85 | WSW | 9 | 4 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.32 | 744.7 | 29.72 | 754.9 | 72.5 | 22.5 | 44 | Calm | 0 | 0 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.66 | 753.4 | 29.91 | 759.7 | 44.2 | 6.8 | 90 | NNE | 4 | 2 | ..... | ..... | 9n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.94 | 760.5 | 29.96 | 760.9 | 41.4 | 5.2 | 89 | E | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.07 | 738.3 | 29.67 | 753.7 | 72.5 | 22.5 | 41 | SE | 13 | 6 | ..... | ..... | 7k;csk | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.68 | 753.9 | 29.75 | 755.7 | 67.8 | 19.9 | 62 | S | 4 | 2 | ..... | ..... | 5ck | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.80 | 756.8 | 29.82 | 757.3 | 62.6 | 17.0 | 84 | SSE | 7 | 3 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.47 | 748.4 | 29.98 | 761.6 | 73.8 | 23.2 | 41 | S | 4 | 2 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.58 | 751.2 | 29.77 | 756.2 | 78.1 | 25.6 | 31 | SW | 13 | 6 | ..... | ..... | 4 | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 29.98 | 761.5 | 30.00 | 762.0 | 39.0 | 3.9 | 69 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.58 | 725.9 | 29.93 | 760.1 | 80.1 | 26.7 | 33 | Calm | 0 | 0 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.06 | 763.4 | 29.97 | 761.3 | 79.3 | 26.3 | 34 | E | 9 | 4 | ..... | ..... | 5cs;s | ..... | ..... | ..... | ..... | Light clouds | Capt. Wisganow. |
| Krotkowo* | 29.63 | 752.7 | 30.08 | 764.1 | 78.1 | 25.6 | 33 | SSW | 11 | 5 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.80 | 757.0 | 30.06 | 763.5 | 76.1 | 24.5 | 43 | SW | 2 | 1 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.14 | 740.1 | 30.11 | 764.8 | 48.9 | 9.4 | 79 | Calm | 0 | 0 | ..... | ..... | 9ck | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.79 | 756.7 | 30.01 | 762.3 | 82.9 | 28.3 | 44 | NNE | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.45 | 722.7 | 29.96 | 761.0 | 75.7 | 24.3 | 56 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.60 | 751.8 | 30.11 | 764.8 | 42.6 | 5.9 | 41 | NW | 0 | 0 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.70 | 754.4 | 30.01 | 762.2 | 25.3 | — 3.7 | 63 | NW | 25 | 11 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking (China) | 29.80 | 756.9 | 29.94 | 760.5 | 63.3 | 17.4 | 30 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. Meteorological Obs. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Vladivostock | 29.81 | 757.1 | 29.91 | 759.6 | 45.9 | 7.7 | 58 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.99 | 761.7 | 30.10 | 764.4 | 61.3 | 16.3 | 57 | SSE | 3.5 | 1.56 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 30.23 | 767.7 | 30.28 | 769.1 | 64.9 | 18.3 | 53 | NW | 3.4 | 1.54 | ..... | 4 | 4 | NW | ..... | 0.071 | 1.8 | Almost cov'd | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.32 | 694.0 | ..... | ..... | 57.6 | 14.2 | 50 | W | 8.2 | 3.67 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Oservatory | 28.05 | 712.5 | ..... | ..... | 66.6 | 19.2 | 52 | S | 6.7 | 3.00 | ..... | 2 | 4 | NW | ..... | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 30.07 | 763.6 | 30.21 | 767.3 | 73.4 | 23.0 | 27 | NW | 6.6 | 2.94 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.39 | 746.6 | 30.29 | 769.4 | 54.9 | 12.7 | 87 | SW | 9.4 | 4.2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Covered | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.05 | 763.1 | 30.11 | 764.8 | 72.1 | 22.3 | 64 | E | 14.8 | 6.6 | ..... | 1ck | 1k;ks | E | ..... | 0 | 0 | Clear | Benito Vines, S. J |
| Manilla, Philippine Islands | 29.87 | 755.6 | 29.92 | 760.0 | 84.0 | 28.9 | 86 | NNE | 0 | 0 | ..... | 2 | 5 | SW | NE | 0.185 | 4.7 | Covered | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.20 | 767.1 | 30.30 | 769.6 | 72.0 | 22.2 | 43 | N | 3.3 | 1.5 | ..... | 5 | 4 | WNW | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W.I | 29.96 | 760.9 | 30.05 | 763.2 | 77.0 | 25.0 | 63 | NE | 13.3 | 5.95 | ..... | 4ks | 5k | NE | NE | 0 | 0 | Cloudy | Leonardo de Tejeda, Ch'f Eng'r. |

Note.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.07 | 763.8 | 30.11 | 764.8 | 36.5 | 2.5 | ..... | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.08 | 763.9 | 30.13 | 765.2 | 42.4 | 5.8 | 50 | NW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.07 | 763.7 | 30.12 | 765.0 | 46.0 | 7.8 | 52 | E | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.84 | 758.0 | 30.02 | 762.5 | 47.1 | 8.4 | 80 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.88 | 759.0 | 29.94 | 760.5 | 36.3 | 2.4 | 85 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.97 | 761.1 | 30.01 | 763.0 | 46.8 | 8.2 | 28 | N | 9.8 | 4.4 | ..... | ..... | 4 | SSW | ..... | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.69 | 728.7 | 30.12 | 765.0 | 52.9 | 11.6 | 49 | N | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 6.169 | 4.3 | Covered | The Observatory. |
| Zurich | 28.44 | 722.3 | 30.09 | 764.3 | 49.6 | 9.8 | 77 | W | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.047 | 1.2 | Cloudy | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +4.3 mm.; Thermometer,—1.8 Cent.; Relative Humidity, —8 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,338.6 feet, and that of Zurich 470 m., or 1,542.0 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.78 | 756.4 | 64.6 | 18.1 | 59 | ESE | 8 | 3.5 | ..... | 10 | ..... | ..... | SW | 0.059 | 1.5 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.28 | 769.0 | 86.0 | 30.0 | ..... | SE | ..... | ..... | 1 | 10 | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.71 | 754.7 | 60.4 | 15.8 | ..... | NW | ..... | ..... | 3 | 2 | ..... | ..... | ..... | 0 | 0 | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut. (Syria,) Lee Obs'y | 29.82 | 757.4 | 29.94 | 760.4 | 76.2 | 24.0 | 72 | WNW | ..... | ..... | 1 | 0 | ..... | ..... | ..... | 0 | 0 | Blue sky | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.15 | 765.8 | 30.22 | 767.6 | 36.7 | 2.1 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Hon. J. Ferguson. |
| Brockville, Ontario | 29.68 | 753.9 | 29.99 | 761.7 | 42 | 5.6 | ..... | E | 5 | 2.2 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N. B | 30.18 | 766.6 | 30.24 | 768.1 | 41 | 5.0 | 25 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 30.09 | 764.3 | 30.13 | 765.3 | 39 | 3.9 | 73 | N | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.74 | 755.4 | 29.93 | 760.2 | 50.1 | 10.1 | 60 | E | ..... | ..... | 1 | ..... | 10s | ..... | Calm | 0 | 0 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | 30.07 | 763.8 | 30.24 | 768.1 | 34 | 1.1 | ..... | NW | ..... | ..... | 1 | 0 | 2s | ..... | ..... | 0 | 0 | Fine | H. A. Johnson. |
| Esquimault, B. C | 30.05 | 763.3 | 30.10 | 764.6 | 38.1 | 3.4 | 100 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. Bevis. |
| *Father Point, Quebec | 30.14 | 765.5 | 30.16 | 766.1 | 38 | 3.3 | 65 | W | 9 | 4.0 | ..... | 5cs | 2s | N | Calm | 0 | 0 | Fair | J. McWilliams. |
| Fredericton, N. B | 30.19 | 766.8 | 30.25 | 768.3 | 38.3 | 3.5 | 49 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. Harrison. |
| *Fort Garry, Manitoba | 28.96 | 735.6 | 29.79 | 756.7 | 42 | 5.6 | 96 | N | 15 | 6.7 | ..... | 5k | 5ks | N | N | 0.030 | 0.76 | Cloudy | James Stewart. |
| Granton, Ontario | 28.73 | 729.7 | 29.80 | 756.9 | 56 | 13.3 | ..... | SE | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | James Grant. |
| *Halifax, N. S | 29.86 | 758.4 | 29.99 | 761.7 | 39 | 3.9 | 78 | N | 17 | 7.6 | ..... | 0 | 2ks | ..... | N | 0 | 0 | Fair | F. Allison, M. A. |
| Hamilton, Ontario | 29.54 | 750.3 | 29.92 | 760.0 | 42.7 | 5.9 | 81 | W | ..... | ..... | 1 | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.68 | 752.6 | 29.96 | 761.0 | 53 | 11.7 | 63 | NE | 6 | 2.7 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.97 | 761.2 | 30.01 | 762.2 | 35.2 | 1.8 | 88 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Overcast | C. H. Rigby. |
| Moose Factory, Ontario | 29.64 | 752.8 | 29.67 | 753.6 | 39.4 | 4.1 | 96 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.75 | 18.8 | Misty | J. R. Nason. |
| *Montreal, Quebec | 29.83 | 757.7 | 30.03 | 762.8 | 45 | 7.2 | 56 | NE | 16 | 7.2 | ..... | ..... | 10s | ..... | ..... | Inap. | Inap. | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.10 | 739.1 | 29.80 | 756.9 | 43 | 6.1 | 87 | E | 7 | 3.1 | ..... | 5k | 5ks | SW | SW | 0.06 | 1.5 | Cloudy | Rev. R. Mosly. |
| Peterboro, Ontario | 29.12 | 739.6 | 29.86 | 758.4 | 52.7 | 11.5 | 66 | Calm | ..... | ..... | 0 | 10k | 0 | ..... | ..... | 0.40 | 10.2 | Overcast | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.19 | 741.4 | 29.88 | 758.9 | 50 | 10.0 | 79 | SW | 10 | 4.5 | ..... | ..... | Haze | ..... | ..... | 0 | 0 | Cloudy | H. Morgan. |
| Port Hastings, N. S | 29.98 | 761.5 | 30.03 | 762.8 | 39.8 | 4.3 | ..... | E | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.23 | 742.4 | 29.88 | 758.9 | 60 | 10.0 | 84 | SW | 5 | 2.2 | ..... | 5ck | Haze | W | ..... | 0 | 0 | Hazy | M. Payne. |
| *Quebec, Quebec | 29.82 | 757.4 | 30.15 | 765.8 | 39 | 3.9 | 55 | NE | ..... | ..... | 1 | ..... | 10n | ..... | NE | 0 | 0 | Cloudy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.41 | 747.0 | 29.87 | 758.7 | 41 | 5.0 | 82 | E | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | Inap. | Inap. | Threatening | W. H. McIntyre. |
| St. Andrews, N. B | 30.14 | 765.5 | 30.19 | 766.8 | 40 | 4.4 | 52 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| St. John, N. B | 30.04 | 763.0 | 30.21 | 767.3 | 38 | 3.3 | 54 | NE | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.05 | 737.9 | 29.75 | 755.6 | 53 | 11.7 | 92 | SE | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | K. Stewart. |
| Stayner, Ontario | 29.00 | 736.6 | 29.77 | 756.1 | 48 | 8.9 | 77 | SE | 3 | 1.3 | ..... | ..... | 10n | ..... | NW | 0 | 0 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.57 | 725.7 | 29.82 | 757.4 | 55.6 | 13.1 | 67 | SW | 9 | 4.0 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Overcast | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.99 | 761.7 | 30.03 | 762.8 | 37 | 2.8 | 76 | NE | 15 | 6.7 | ..... | ..... | 10s | ..... | NE | 0.03 | 0.8 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.51 | 749.5 | 29.90 | 759.4 | 46 | 7.8 | 73 | E | 10 | 4.5 | ..... | ..... | 10n | ..... | W | 0 | 0 | Cloudy | Magnetic Observatory. |
| Windsor, N. S | 30.02 | 762.5 | 30.12 | 765.0 | 31.6 | — 0.3 | 100 | N | 10 | 4.5 | ..... | 0 | 4ks | ..... | ..... | Inap. | Inap. | Fair | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 34.0 | 1.1 | 100 | NE | ..... | ..... | ..... | 10k | 10s | ..... | ..... | 0 | 0 | Cloudy | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the co-operation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer, corrected for instrum'tal error and temperature. Inches. | Barometer, corrected for instrum'tal error and temperature. Millimeters. | Barometer, reduced to sea-level. Inches. | Barometer, reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'r 0—10. | Clouds. Amount. Lw'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.90 | 759.4 | 30.13 | 765.3 | 52 | 11.1 | 29 | S | 9 | 4.0 | ..... | Haze | 8ks | ..... | NW | 0 | 0 | Fair | |
| Alpena, Michigan | 29.07 | 738.4 | 29.71 | 754.6 | 44 | 6.7 | 84 | SE | 10 | 4.5 | ..... | ..... | 8s | ..... | W | 0.45 | 11.4 | Cloudy | |
| Atlanta, Georgia | 29.03 | 737.3 | 30.17 | 766.3 | 62 | 16.7 | 56 | SE | 6 | 2.7 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 30.23 | 767.8 | 30.24 | 768.1 | 49 | 9.4 | 71 | S | 8 | 3.6 | ..... | 5c | 0 | SW | ..... | 0 | 0 | Fair | |
| Augusta, Georgia | 30.09 | 764.3 | 30.27 | 768.8 | 60 | 15.6 | 88 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 30.14 | 765.5 | 30.18 | 766.6 | 50 | 10.0 | 52 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Barnegat, New Jersey | 30.19 | 766.8 | 30.21 | 767.3 | 49 | 9.4 | 78 | SW | 8 | 3.6 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Bismarck, Dakota | 27.96 | 710.2 | 29.82 | 757.4 | 47 | 8.3 | 92 | N | 2 | 0.9 | ..... | 1c | 0 | W | ..... | 0 | 0 | Clear | |
| Boerne, Texas | 28.52 | 724.4 | 29.83 | 757.7 | 55 | 12.8 | 100 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 1.77 | 45.0 | Clear | |
| Boise City, Idaho | 27.15 | 689.6 | 30.11 | 764.8 | 50 | 10.0 | 58 | NW | 16 | 7.2 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Boston, Massachusetts | 30.10 | 764.5 | 30.26 | 768.6 | 45 | 7.2 | 46 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Brackettville, Texas | 28.84 | 732.5 | 29.86 | 758.4 | 62 | 16.7 | 94 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.82 | 732.0 | 29.81 | 757.2 | 42 | 5.6 | 100 | SE | 1 | 0.4 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Brownsville, Texas | 29.90 | 759.4 | 29.94 | 760.5 | 66 | 18.9 | 95 | N | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 1.67 | 39.9 | Cloudy | |
| Buffalo, New York | 29.16 | 740.7 | 29.85 | 758.2 | 56 | 13.3 | 51 | S | 12 | 5.4 | ..... | 10cs | Haze | S | Calm | 0 | 0 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Burlington, Vermont | 29.80 | 756.9 | 30.09 | 764.3 | 48 | 8.9 | 38 | S | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.69 | 754.1 | 30.08 | 764.0 | 66 | 18.9 | 84 | S | 6 | 2.7 | ..... | ..... | 10n | ..... | S | 0.06 | 1.5 | Light rain | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.22 | 640.6 | 30.02 | 762.5 | 57 | 13.9 | 20 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 45 | 7.2 | 39 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.44 | 697.0 | 30.01 | 762.2 | 34 | 1.1 | 70 | E | 4 | 1.8 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.30 | 769.6 | 30.30 | 769.6 | 58 | 14.4 | 82 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Cape Henry, Virginia | 30.24 | 768.1 | 30.26 | 768.6 | 53 | 11.7 | 61 | S | 13 | 5.8 | ..... | 1c | 5s | S | S | 0 | 0 | Fair | |
| Cape Lookout, N. Carolina | 30.28 | 769.1 | 30.29 | 769.4 | 63 | 17.2 | 78 | S | 8 | 3.6 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Hazy | |
| Cape May, New Jersey | 30.17 | 766.3 | 30.20 | 767.1 | 49 | 9.4 | 64 | S | 18 | 8.0 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Castroville, Texas | 29.19 | 741.4 | 29.88 | 758.9 | 62 | 16.7 | 88 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.62 | 15.7 | Clear | |
| Charleston, South Carolina | 30.19 | 766.8 | 30.24 | 768.1 | 66 | 18.9 | 84 | E | 1 | 0.4 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 24.04 | 610.6 | 29.98 | 761.5 | 38 | 3.3 | 63 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.14 | 740.1 | 29.79 | 756.7 | 62 | 16.7 | 72 | SW | 10 | 4.5 | ..... | 2cs | 0 | W | ..... | Inap. | Inap. | Clear | |
| Cincinnati, Ohio | 29.38 | 746.2 | 30.01 | 762.2 | 68 | 20.0 | 51 | SW | 7 | 3.1 | ..... | 8k | 2s | SW | SW | 0 | 0 | Threatening | |
| Cleveland, Ohio | 29.19 | 741.4 | 29.88 | 758.9 | 66 | 18.9 | 41 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Coleman City, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Columbus, Ohio | 29.14 | 740.1 | 29.96 | 761.0 | 62 | 16.7 | 56 | S | 5 | 2.2 | ..... | ..... | 10s;sm' | ..... | Calm | 0 | 0 | Cloudy | |
| Concho, Texas | 28.11 | 714.0 | 29.80 | 756.9 | 52 | 11.1 | 86 | NW | 4 | 1.8 | ..... | ..... | 5s | ..... | Calm | 0.12 | 3.0 | Fair | |
| Corsicana, Texas | 29.50 | 749.3 | 29.97 | 761.2 | 59 | 15.0 | 94 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Davenport, Iowa | 29.21 | 741.9 | 29.82 | 757.4 | 65 | 18.3 | 63 | SW | 14 | 6.3 | ..... | 1cs | 0 | Calm | ..... | 0.14 | 3.6 | Clear | |
| Deadwood, Dakota | 25.26 | 641.6 | ..... | ..... | 40 | 4.4 | 82 | SW | 4 | 1.8 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Clear | |
| Decatur, Texas | 28.79 | 731.3 | 29.94 | 760.5 | 60 | 15.6 | 82 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.19 | 741.4 | 29.98 | 761.5 | 59 | 15.0 | 100 | SE | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Dense fog | |
| Denver, Colorado | 24.79 | 629.6 | 30.01 | 762.2 | 40 | 4.4 | 73 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Des Moines, Iowa | 28.98 | 736.1 | 29.85 | 758.2 | 55 | 12.8 | 81 | NW | 5 | 2.2 | ..... | 0 | 5s | ..... | N | 0.36 | 9.1 | Fair | |
| Detroit, Michigan | 29.17 | 740.9 | 29.82 | 757.4 | 64 | 17.8 | 53 | SW | 12 | 5.4 | ..... | 5cs | 5s | NW | Calm | 0 | 0 | Cloudy | |
| Dodge City, Kansas | 27.41 | 696.2 | 29.70 | 754.4 | 47 | 8.3 | 92 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.11 | 739.4 | 29.78 | 756.4 | 64 | 17.8 | 78 | W | 9 | 4.0 | ..... | 5c | Haze | Calm | Calm | 0.20 | 5.1 | Fair | |
| Duluth, Minnesota | 29.08 | 738.6 | 29.74 | 755.4 | 53 | 11.7 | 80 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texa | 29.23 | 742.4 | 29.96 | 761.0 | 62 | 16.7 | 88 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Eastport, Maine | 30.14 | 765.5 | 30.21 | 767.3 | 39 | 3.9 | 46 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 67 | 19.4 | 89 | NW | ..... | ..... | 4 | 0 | 10s | ..... | S | Inap. | Inap. | Cloudy | |
| El Paso, Texas | 26.29 | 667.8 | ..... | ..... | 42 | 5.2 | 58 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.18 | 741.2 | 29.86 | 758.4 | 64 | 17.8 | 53 | S | 12 | 5.4 | ..... | 10c | Sm'e | W | Calm | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.07 | 738.4 | 29.72 | 754.9 | 46 | 7.8 | 77 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | W | 0.23 | 5.8 | Cloudy | |
| Florence, Arizona | 28.48 | 723.4 | 30.08 | 764.0 | 57 | 13.9 | 31 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.72 | 704.1 | ..... | ..... | 45 | 7.2 | 84 | E | 14 | 6.3 | ..... | 8ck | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Fort Craig, New Mexico | 25.59 | 650.0 | 29.66 | 753.4 | 47 | 8.3 | 42 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.25 | 641.3 | 30.21 | 767.3 | 45 | 7.2 | 68 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.44 | 747.8 | 29.97 | 761.2 | 60 | 15.6 | 94 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| Fort Griffin, Texas | 25.73 | 729.7 | 29.99 | 761.7 | 57 | 13.9 | 87 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Fort Keogh, Montana | 27.15 | 689.6 | ..... | ..... | 50 | 10.0 | 64 | W | 10 | 4.5 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Fort McKavett, Texas | 27.75 | 704.8 | 29.66 | 753.4 | 63 | 11.7 | 86 | SW | 4 | 1.8 | ..... | 5k | 2ks | Calm | Calm | 0.16 | 4.1 | Fair | |
| Fort St. Michael, Alaska | 30.30 | 769.6 | 30.34 | 770.6 | 18 | — 7.8 | 100 | S | 29 | 13.0 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Fort Sill, Indian Territory | 28.77 | 730.7 | 29.87 | 758.7 | 56 | 13.3 | 87 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Fort Stevenson, Dakota | 27.08 | 687.8 | ..... | ..... | 46 | 7.8 | 68 | NE | 5 | 2.2 | ..... | 4ck | 0 | NE | ..... | 0 | 0 | Fair | |
| Fredericksburg, Texas | 28.23 | 717.0 | 29.74 | 755.4 | 66 | 18.9 | 79 | N | 8 | 3.6 | ..... | 0 | 5ks | ..... | Calm | 1.52 | 38.6 | Fair | |
| Galveston, Texas | 29.92 | 760.0 | 29.97 | 761.2 | 67 | 19.4 | 100 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 1.80 | 45.7 | Cloudy | |
| Graham, Texas | 28.92 | 734.6 | 29.97 | 761.2 | 59 | 15.0 | 94 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Grand Haven, Michigan | 29.10 | 739.1 | 29.74 | 755.4 | 50 | 10.0 | 79 | W | 28 | 12.5 | ..... | ..... | 10s | ..... | W | Inap. | Inap. | Threatening | |
| Indianapolis, Indiana | 29.19 | 741.4 | 29.94 | 760.5 | 66 | 18.9 | 76 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Indianola, Texas | 29.95 | 760.7 | 29.98 | 761.5 | 65 | 18.3 | 89 | NE | 16 | 7.2 | ..... | ..... | 10s | ..... | NE | 0.77 | 19.6 | Cloudy | |
| Jacksboro, Texas | 28.86 | 733.0 | 29.98 | 761.5 | 61 | 16.1 | 82 | SE | 2 | 0.9 | ..... | 0 | 5s | ..... | SE | 0 | 0 | Fair | |
| Jacksonville, Florida | 30.22 | 767.6 | 30.25 | 768.3 | 61 | 16.1 | 94 | E | 4 | 1.8 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Keokuk, Iowa | 29.24 | 742.7 | 29.84 | 757.9 | 63 | 17.2 | 78 | SW | 7 | 3.1 | ..... | 2c | 0 | W | ..... | Inap. | Inap. | Clear | |
| Key West, Florida | 30.11 | 764.8 | 30.14 | 765.5 | 73 | 22.8 | 63 | E | 16 | 7.2 | ..... | 0 | 5ks | ..... | E | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 30.25 | 768.3 | 30.27 | 768.8 | 54 | 12.2 | 74 | E | 8 | 3.6 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.18 | 741.2 | 30.18 | 766.6 | 61 | 16.1 | 66 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Smoky | |
| La Crosse, Wisconsin | 29.04 | 737.6 | 29.75 | 755.6 | 59 | 15.0 | 76 | SW | 1 | 0.4 | ..... | 5k | 0 | SW | ..... | 0.17 | 4.3 | Fair | |
| La Mesilla, New Mexico | 26.14 | 663.9 | 30.29 | 769.4 | 43 | 6.1 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.51 | 749.5 | 29.84 | 757.9 | 75 | 23.9 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.07 | 738.4 | 29.90 | 759.4 | 56 | 13.3 | 81 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.80 | 20.3 | Clear | |
| Los Angeles, California | 29.68 | 753.9 | 30.03 | 762.8 | 50.0 | 10.0 | 89 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Louisville, Kentuckey | 29.49 | 749.0 | 30.03 | 762.8 | 68 | 20.0 | 61 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Lynchburg, Virginia | 29.54 | 750.3 | 30.22 | 767.6 | 55 | 12.8 | 55 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Madison, Wisconsin | 28.78 | 731.0 | 29.73 | 755.1 | 61 | 16.1 | 88 | W | 8 | 3.6 | ..... | ..... | 10ks | ..... | W | 0.06 | 1.5 | Cloudy | |
| Marquette, Michigan | 29.00 | 736.6 | 29.68 | 753.9 | 52 | 11.1 | 73 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0.06 | 1.5 | Fair | |
| Mason, Texas | 28.38 | 720.8 | 30.12 | 765.0 | 57 | 13.9 | 87 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.22 | 5.6 | Clear | |
| Memphis, Tennessee | 29.75 | 755.6 | 30.06 | 763.5 | 66 | 18.9 | 78 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Milwaukee, Wisconsin | 29.02 | 737.1 | 29.71 | 754.6 | 61 | 16.1 | 82 | W | 20 | 8.9 | ..... | 0 | 9ks;s | ..... | W | 0.03 | 0.8 | Cloudy | |
| Mobile, Alabama | 30.09 | 764.3 | 30.14 | 765.5 | 68 | 20.0 | 79 | S | 6 | 2.7 | ..... | 2c | 2s | Calm | S | 0 | 0 | Fair | |
| Montgomery, Alabama | 29.97 | 761.2 | 30.20 | 767.1 | 65 | 18.3 | 78 | SE | 8 | 3.6 | ..... | 2ck | 0 | S | ..... | 0 | 0 | Clear | |
| Morgantown, West Virginia | 29.00 | 736.6 | 30.02 | 762.5 | 64 | 17.8 | 49 | S | 5 | 2.2 | ..... | 5k | Hz;sm' | S | Calm | 0 | 0 | Hazy | |
| Mt. Washington, N. H. | 23.84 | 605.5 | 30.20 | 767.1 | 21 | — 6.1 | 71 | NW | 27 | 12.1 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Nashville, Tennessee | 29.59 | 751.6 | 30.11 | 764.8 | 69 | 20.6 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 30.10 | 764.5 | 30.22 | 767.6 | 51 | 10.6 | 46 | E | 3 | 1.3 | ..... | 10cs | Haze | Calm | Calm | 0 | 0 | Cloudy | |
| New London, Connecticut | 30.19 | 766.8 | 30.24 | 768.1 | 50 | 10.0 | 45 | N | 2 | 0.9 | ..... | 8ck | Haze | NW | Calm | 0 | 0 | Fair | |
| New Orleans, Louisiana | 30.00 | 762.0 | 30.06 | 763.5 | 70 | 21.1 | 75 | SE | 8 | 3.6 | ..... | 5cs | 2s | Calm | SE | 0 | 0 | Fair | |
| Newport, Rhode Island | 30.20 | 767.1 | 30.25 | 768.3 | 48 | 8.9 | 43 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| New York, New York | 30.04 | 763.0 | 30.22 | 767.6 | 50 | 10.0 | 64 | S | 4 | 1.8 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Norfolk, Virginia | 30.20 | 767.1 | 30.27 | 768.8 | 53 | 11.7 | 61 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.06 | 687.3 | 29.64 | 752.8 | 43 | 6.1 | 87 | NW | 1 | 0.4 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear. | |
| Olympia, Washington Ter. | 30.16 | 766.1 | 30.20 | 767.1 | 36.2 | 2.3 | 90 | Calm | 0 | 0 | ..... | 0 | 4s | ..... | S | Inap | Inap. | Fair | |
| Omaha, Nebraska | 28.77 | 730.7 | 29.84 | 757.9 | 56 | 13.3 | 75 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.65 | 753.1 | 29.97 | 761.2 | 54 | 12.2 | 49 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | ..... | Inap | Inap. | Cloudy | |
| Pembina, Dakota | 28.96 | 735.6 | 29.79 | 756.7 | 42 | 5.6 | 100 | NW | 16 | 7.2 | ..... | ..... | Fog | ..... | Calm | 0.03 | 0.8 | Foggy | |
| Philadelphia, Pa | 30.14 | 765.6 | 30.19 | 766.8 | 51 | 10.6 | 59 | SW | 12 | 5.4 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.80 | 731.5 | 30.60 | 777.2 | 56 | 13.3 | 46 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.33 | 462.9 | 30.04 | 763.0 | 18 | — 7.8 | 37 | N | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Ploche, Nevada | 24.07 | 611.4 | 29.84 | 757.9 | 46 | 7.8 | 33 | S | 2 | 0.9 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.20 | 741.7 | 29.99 | 761.7 | 58 | 14.4 | 64 | S | 2 | 0.9 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Port Huron, Michigan | 29.12 | 739.6 | 29.75 | 755.6 | 64 | 17.8 | 48 | S | 14 | 6.3 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Portland, Maine | 30.19 | 766.8 | 30.24 | 768.1 | 48 | 8.9 | 56 | Calm | 0 | 0 | ..... | 8k | Haze | Calm | Calm | 0 | 0 | Cloudy | |
| Portland, Oregon | 30.22 | 767.6 | 30.32 | 770.1 | 40.6 | 4.7 | 87 | SE | 4 | 1.8 | ..... | 0 | 5ks | ..... | NW | 0 | 0 | Fair | |
| Prescott, Arizona | 24.78 | 629.4 | 30.14 | 765.6 | 38 | 3.3 | 38 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Punta Rassa, Florida | 30.19 | 766.8 | 30.21 | 767.3 | 69 | 20.6 | 66 | E | 12 | 5.4 | ..... | 2k | 0 | E | ..... | 0 | 0 | Clear | |
| Red Bluff, California | 29.59 | 751.6 | 29.94 | 760.5 | 63 | 17.2 | 72 | S | 3 | 1.3 | ..... | 5c | 0 | SW | ..... | 0 | 0 | Fair | |
| Rio Grande City, Texas | 29.83 | 757.7 | 30.04 | 763.0 | 65 | 18.3 | 80 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 0.41 | 10.4 | Cloudy | |
| Rochester, New York | 29.30 | 744.2 | 29.90 | 759.4 | 50 | 15.0 | 64 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Roseburg, Oregon | 29.74 | 755.4 | 30.34 | 770.6 | 38.0 | 3.3 | 81 | Calm | 0 | 0 | ..... | 1k | 0 | Calm | ..... | 0 | 0 | Clear | |
| Sacramento, California | 29.86 | 758.4 | 29.96 | 760.7 | 55 | 12.8 | 87 | S | 6 | 2.7 | ..... | 2c | 0 | S | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.42 | 747.2 | 29.98 | 761.5 | 65 | 18.3 | 73 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| St. Marks, Florida | 30.20 | 767.1 | 30.21 | 767.3 | 67 | 19.4 | 84 | S | 13 | 5.8 | ..... | 2k | 0 | S | ..... | 0 | 0 | Fair | |
| St. Paul, Minnesota | 28.93 | 734.9 | 29.73 | 755.1 | 55 | 12.8 | 68 | NW | 6 | 2.7 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.59 | 650.0 | 29.92 | 760.0 | 49 | 9.4 | 57 | E | 4 | 1.8 | ..... | 7k | 0 | W | ..... | 0 | 0 | Fair | |
| San Antonio, Texas | 29.28 | 743.7 | 29.85 | 758.2 | 59 | 15.0 | 94 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 1.52 | 38.6 | Clear | |
| San Diego, California | 29.96 | 761.0 | 30.04 | 763.0 | 54 | 12.2 | 93 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.22 | 742.2 | 29.87 | 758.7 | 66 | 18.9 | 54 | SW | 15 | 6.7 | ..... | 8k | 2s | W | Calm | 0 | 0 | Cloudy | |
| Sandy Hook, New Jersey | 30.17 | 766.3 | 30.20 | 767.1 | 50 | 10.0 | 72 | SE | 8 | 3.6 | ..... | 5ck | Haze | NW | Calm | 0 | 0 | Fair | |
| San Francisco, California | 29.95 | 760.7 | 30.02 | 762.5 | 51.8 | 11.0 | 86 | W | 8 | 3.6 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Santa Fé, New Mexico | 23.86 | 693.3 | 29.90 | 759.4 | 39 | 3.9 | 56 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.18 | 766.6 | 30.27 | 768.8 | 65 | 18.3 | 78 | E | 2 | 0.9 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.74 | 755.4 | 29.95 | 760.7 | 64 | 17.8 | 94 | E | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.19 | 4.8 | Cloudy | |
| Silver City, New Mexico | 24.36 | 618.7 | 30.68 | 779.3 | 37 | 2.8 | 54 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.26 | 768.6 | 30.29 | 769.4 | 64 | 17.8 | 89 | E | 5 | 2.2 | ..... | 2ck | Haze | SW | Calm | 0 | 0 | Fair | |
| Springfield, Massachusetts | 30.09 | 764.3 | 30.22 | 767.6 | 48 | 8.9 | 63 | N | 2 | 0.9 | ..... | ..... | 10ks | ..... | N | 0 | 0 | Cloudy | |
| Stockton, Texas | 27.02 | 686.3 | 30.02 | 762.5 | 52 | 11.1 | 73 | NW | 4 | 1.8 | ..... | 2k | 0 | NW | ..... | Inap. | Inap. | Fair | |
| Thatcher's Island, Mass | 30.11 | 764.8 | 30.16 | 766.1 | 48 | 8.9 | 70 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Toledo, Ohio | 29.20 | 741.7 | 29.84 | 757.9 | 60 | 20.6 | 56 | SW | 23 | 10.3 | ..... | 5cs | 5s | NW | NW | 0 | 0 | Cloudy | |
| Tucson, Arizona | 27.55 | 699.8 | 30.10 | 764.5 | 51 | 10.6 | 39 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.80 | 756.9 | 30.31 | 769.8 | 42.0 | 5.6 | 58 | SW | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 38 | 3.3 | 80 | Calm | ..... | ..... | 0 | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Uvalde, Texas | 29.09 | 738.9 | 29.91 | 759.7 | 59 | 15.0 | 88 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Vicksburg, Mississippi | 29.82 | 757.4 | 30.07 | 763.8 | 63 | 17.2 | 89 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Virginia City, Montana | 24.06 | 611.1 | 29.54 | 750.3 | 52 | 11.1 | 35 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Visalia, California | 29.59 | 751.6 | 29.96 | 761.0 | 56.5 | 13.6 | 71 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C | 30.05 | 763.3 | 30.17 | 766.3 | 51 | 10.6 | 59 | S | 14 | 6.3 | ..... | Haze | Haze | Calm | ..... | 0 | 0 | Hazy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 55 | 12.8 | 39 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.20 | 767.1 | 30.28 | 769.1 | 61 | 16.1 | 82 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.62 | 650.7 | 29.98 | 761.5 | 48 | 8.9 | 49 | SW | 9 | 4.0 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 30.23 | 767.8 | 30.27 | 768.8 | 48 | 8.9 | 70 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Yankton, Dakota | 28.65 | 727.7 | 29.92 | 760.0 | 51 | 10.6 | 79 | SW | 3 | 2.7 | ..... | 10k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.75 | 755.6 | 29.91 | 759.7 | 59 | 15.0 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.42 | 721.9 | 29.80 | 756.9 | 60 | 15.6 | 88 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.05 | 763.3 | 30.10 | 764.5 | 74 | 23.3 | 59 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.19 | 639.8 | ..... | ..... | 67.0 | 19.4 | 82 | Calm | ..... | ..... | 0 | ..... | 8ks | ..... | ..... | 0.48 | 10.9 | ..... | Thomas Herran. |
| Navassa, W. I | 29.93 | 760.2 | 30.01 | 762.2 | 78 | 25.6 | ..... | NE | 10 | 4.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Partly clo'dy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.00 | 762.0 | 30.00 | 762.0 | 88 | 28.3 | 79 | E | ..... | ..... | 2 | ..... | 10n | ..... | E | 1.580 | 40.1 | Raining | O. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | 29.87 | 758.7 | 29.92 | 760.0 | 29.0 | — 1.7 | 94 | NW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,191.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m., Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,642 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,355.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.656 inches: Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.92 | 760.0 | 54 | 12.2 | 51 | 10.6 | 100 | SW | 14 | 6.3 | .... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Overcast..... | |
| Navy Yard, Pensacola, Fla. | 30.28 | 769.1 | 69 | 20.6 | 69 | 20.6 | 80 | ESE | 18 | 8.0 | ..... | ..... | 2 | ..... | SE | 0 | 0 | ..... | ..... | Fair..... | |
| Navy Yard, Portsmouth, N.H | 30.29 | 769.4 | 59 | 15.0 | 45 | 7.2 | 46 | NE | 2 | 0.9 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Overcast..... | |
| Naval Hospital. Yokohama, Japan.....* | 29.73‡ | 755.1‡ | ..... | ..... | 62.1 | 16.7 | 94 | SW | ..... | ..... | 1 | ..... | 10n | ..... | SW | 1.30 | 33.0 | ..... | ..... | Raining..... | |
| Adams, Panama .....* | 29.94 | 760.5 | 79 | 26.1 | 78 | 25.6 | 95 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Fair..... | |
| Alaska, N. 50° 29′, W. 126° 02′..... | 30.14‡ | 765.5‡ | ..... | ..... | 45 | 7.2 | 68 | SSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | ..... | Overcast..... | |
| Alliance, Palermo, Sicily..... | 29.79‡ | 756.7‡ | ..... | ..... | 64 | 17.8 | 62 | N | ..... | .... | 0–1 | ..... | 8 | ..... | N;W | ..... | ..... | ..... | ..... | Misty..... | |
| Ashuelot, Hong-Kong, China. ...* | 30.07‡ | 763.8‡ | ..... | ..... | 71 | 21.7 | 75 | E | ..... | ..... | 4 | ..... | 5 | ..... | W | ..... | ..... | Smooth | ..... | Hazy..... | |
| Canonicus, New Orleans, La. .....* | 30.10 | 764.5 | 51 | 10.6 | 70 | 21.1 | 100 | SE | ..... | ..... | 3 | ..... | 10? | ..... | SE | ..... | ..... | ..... | ..... | Fair..... | |
| Colorado, New York, N. Y..... | 30.42 | 772.6 | 54 | 12.2 | 57 | 13.9 | 72 | S | 6 | 2.7 | ..... | ..... | 2 | ..... | NW | 0 | 0 | ..... | ..... | Hazy..... | |
| Constitution N. 24° 22′, W. 32° 07′..... | 30.22‡ | 767.6‡ | ..... | ..... | 73 | 22.8 | 90 | ENE | ..... | ... ... | 3 | ..... | 9 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Despatch, Genoa, Italy..... | 29.82‡ | 757.4‡ | ..... | ..... | 69 | 20.6 | 70 | E | ..... | ..... | 2 | ..... | 2 | ..... | SE | ..... | ..... | Smooth | ..... | Fair..... | |
| Essex, Montevideo, Uruguay.* | 30.05 | 763.2 | 65 | 18.3 | 65 | 18.3 | 100 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Franklin, Norfolk, Va.....* | 30.39 | 771.9 | 61 | 16.1 | 53 | 11.7 | 73 | S | 7.2 | 3.2 | ..... | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Clear?..... | |
| Gettysburg, Genoa, Italy .....* | 29.75‡ | 755.6‡ | ..... | ..... | 79 | 26.1 | 95 | ENE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Hartford, Buenos Ayres, S. A.....* | 30.06 | 763.5 | 70 | 21.1 | 70 | 21.1 | 75 | N | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0 | 0 | Smooth | ..... | Fair..... | |
| Michigan, Erie, Pa.....† | 29.90‡ | 759.4‡ | ..... | ..... | 63 | 17.2 | 57 | S | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Monocacy, Shanghai, China.....* | 30.36‡ | 771.1‡ | ..... | ..... | 55 | 12.8 | 62 | SSE | ..... | ..... | 1 | ..... | 2 | ..... | SSE | ..... | ..... | ..... | ..... | Fair..... | |
| Monongahela N. 32° 46′, E. 141° 32′.....* | 29.70‡ | 754.4‡ | ..... | ..... | 69 | 20.6 | ?? | SSE | ..... | ..... | 4–5 | ..... | 10 | ..... | ..... | Light | Light | Light | S;E | Raining ..... | |
| New Hampshire, Port Royal, S. C.....* | 30.35‡ | 770.9‡ | 70 | 21.1 | 68 | 20.0 | 84 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Onward, Callao, Peru.....†* | 30.03 | 762.8 | ..... | ..... | 62 | 16.7 | 88 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Long | NW | Foggy ..... | |
| Palos, Shanghai, China.....* | 30.33 | 770.4 | 60 | 15.6 | 50 | 10.0 | 72 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Passaic, Washington, D. C..... | ..... | .. ..... | ..... | ..... | 54 | 12.2 | 80 | S | ..... | ..... | 4 | ..... | 5 | ..... | NE | ..... | ..... | ..... | ..... | Fair..... | |
| Pensacola. Callao, Peru.....→..... | 29.91‡ | 759.7‡ | ..... | ..... | 63 | 17.2 | 89 | NW | 5 | 2.2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | ..... | Misty..... | |
| Plymouth. Portsmouth, N. H..... | 30.22‡ | 767.6‡ | ..... | ..... | 45 | 7.2 | 54 | ENE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Portsmouth, Hampton Roads, Va..... | 30.26‡ | 768.8‡ | ..... | ..... | 51 | 10.6 | 72 | S | ..... | ..... | 3 | ..... | 2 | ..... | S | 0 | 0 | Slight | S;W | Clear..... | |
| Powhatan, Norfolk, Va.....* | 30.23‡ | 767.8‡ | ..... | ..... | 57 | 13.9 | 79 | SSW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Quinnebaug, Tunis, Africa ..... | 29.92‡ | 760.0‡ | ..... | ..... | 59 | 15.0 | 82 | NNW | ..... | ..... | 5 | ..... | 10 | ..... | N | ..... | ..... | ..... | ..... | Cloudy..... | |
| Ranger. Amoy, China.....*. | 30.11‡ | 764.8‡ | ..... | ..... | 65 | 18.3 | 73 | NE | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy ..... | |
| Richmond. N. 5° 43′ 03″, E. 97° 19′ 05″ | 29.84‡ | 757.9‡ | ..... | ..... | 83 | 28.3 | 63 | NNW | ..... | ..... | 2 | ..... | 2 | ..... | N | 0 | 0 | Smooth | N | Fair..... | |
| Rio Bravo, Brownsville, Texas..... | 29.94 | 760.5 | 68 | 20.0 | 68 | 20.0 | 95 | NW | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md... ..... | 30.16‡ | 766.1‡ | ..... | ..... | 51 | 10.6 | 46 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Hazy..... | |
| Saratoga, Horta Bay, Fayal, Azores. | 30.32‡ | 770.1‡ | ..... | ..... | 62 | 16.7 | 100 | ESE | ..... | ..... | 0 | ..... | 10 | ..... | WNW | Slight | Slight | Mod'ate | E | Misty..... | |
| St. Louis, League Island, Pa..... | 30.10 | 764.5 | 61 | 16.1 | 52 | 11.1 | 60 | SSW | 10 | 4.5 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Misty..... | |
| Trenton Villafranca, France...*. | 29.84‡ | 757.9‡ | ..... | ..... | 77 | 25.0 | 77 | SSW | ..... | ..... | 1 | ..... | 2 | ..... | NE | 0 | 0 | Smooth | ..... | Fair..... | |
| Tuscarora. Port Sacrificios, Mex...* | 29.92‡ | 760.0‡ | ..... | ..... | 75 | 23.9 | 81 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Long | S;W | Hazy..... | |
| Vandalia N. 22° 48′, W. 74° 36′..... | 30.18‡ | 766.6‡ | ..... | ..... | 73 | 22.8 | 81 | ESE | ..... | ..... | 5 | ..... | 2 | ..... | SE | ..... | ..... | Mod'ate | E | Cloudy.. .... | |
| Wabash, Boston, Mass..... | 30.28‡ | 769.1‡ | ..... | ..... | 46 | 7.8 | 69 | E | 5 | 2.2 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Fair..... | |
| Wyoming, Athens, Greece.....*. | 29.45‡ | 748.0‡ | ..... | ..... | 59 | 15.0 | 100 | WSW | ..... | ..... | 2–6 | ..... | 10 | ..... | W | ..... | ..... | Smooth | W | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | Character. | Direction from— | | |

### CUNARD LINE MARINE SERIES.

Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Samaria, Capt. T. Roberts, N. 45° 52′, W. 41° 08′...† | | | 30.04 | 763.0 | 57 | 13.9 | | SSE | | | 1 | | | | S | Mod'ate | NNW | Fair | M. C. Miles. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—†Aneroid.

### PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | |
| §S. S. City of Tokio Capt. Maury Yokohama, Japan | | 30.12‡ | 765.0‡ | | | | W | | | 5 | | 3k | | W | 0 | Smooth | | Blue sky | L. B. Walls. |
| S. S. Colima, N. 31° 28′, W. 117° 53′...† | | 29.94‡ | 760.5‡ | 62 | 16.7 | | WNW | | | 3 | | 6 | | SSE | 0 | Small | WNW | Misty | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota, Capt. H. G. Morse, | | | | | | | | | | | | | | | | | | | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Granada, Capt. Austin. | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, Sydney, N. S. W. | | 30.26‡ | 768.6‡ | | | | NE | | | 2 | | 0 | | | | | | Fine | R. O. Ghest, 1st Officer |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office. §The date of the S. S. City of Tokio is uncertain, and may be in error one day.

### WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office.

### OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Weyer, N. 34° 40′, W. 151° 20′ | | 30.31‡ | 769.9‡ | 55 | 12.8 | 80 | N | | | 8 | | k | | | 0 | Heavy | N | Squally | D. A. Joyce. |
| S. S. Gaelic, N. 39° 35′, W. 132° 40′...* | | 30.28‡ | 769.1‡ | 48 | 8.9 | | NNE | | | 6 | | k | | NE | Blank | Very high. | NE | D. clouds | Capt. W. H. Kidley. |
| S. S. Oceanic, Capt. J. Metcalf, | | | | | | | | | | | | | | | | | | | J. G. Cameron. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds. The position given for the S. S. Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office.

### NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the co-operation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 44° 59′, W. 37° 41′ | | 30.21‡ | 767.3‡ | | | | Calm | | | 0 | | | | | | Smooth | | Fair | Capt. G. Meyer. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Corrections for temperature instrumental error and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

| NAMES OF VESSELS. | True course toward. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | L'w'r | Upper. | Lower. | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | Character. | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Liverpool, Eng. | | 29.79‡ | 756.7‡ | 51 | 10.6 | | SE | | | 3 | | 9 | | SE | Mod'ate | | | Cloudy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris.* | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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| S. S. Hibernian | | | | | | | | | | | | | | | | | | | J. Powell, 4th Officer. |
| S. S. Peruvian | | | | | | | | | | | | | | | | | | | |
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| Furnished by the co-operation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller, N. 42° 40, W. 69 48 | | 30.35‡ | 770.9‡ | 54 | 12.2 | 74 | NE | 4 | 1.8 | | | 8k | | Calm | 0 | Swell | NE | Cloudy | Capt. James Jorgensen. |
| Brigantine "George of Halifax" | | | | | | | | | | | | | | | | | | | Willard N. Pratt. |
| Schooner Harry and Fred, N. 32° 39', W. 69° 25' | | 30.21‡ | 767.3‡ | | | | N | 12 | 5.4 | | | 2 | | NE | 0 | Heavy | NE | Fair | Capt. George Gardner. |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for Pennsylvania, the cloud-direction as toward instead of from; sea-swell in general terms, as published; rain-fall for Indiana and Ohio in general terms. ‡Corrections for temperature, instrumental error and elevation applied at this office.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Anéroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office.

Note.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Corrections for temperature, instrumental error and elevation applied at this office.

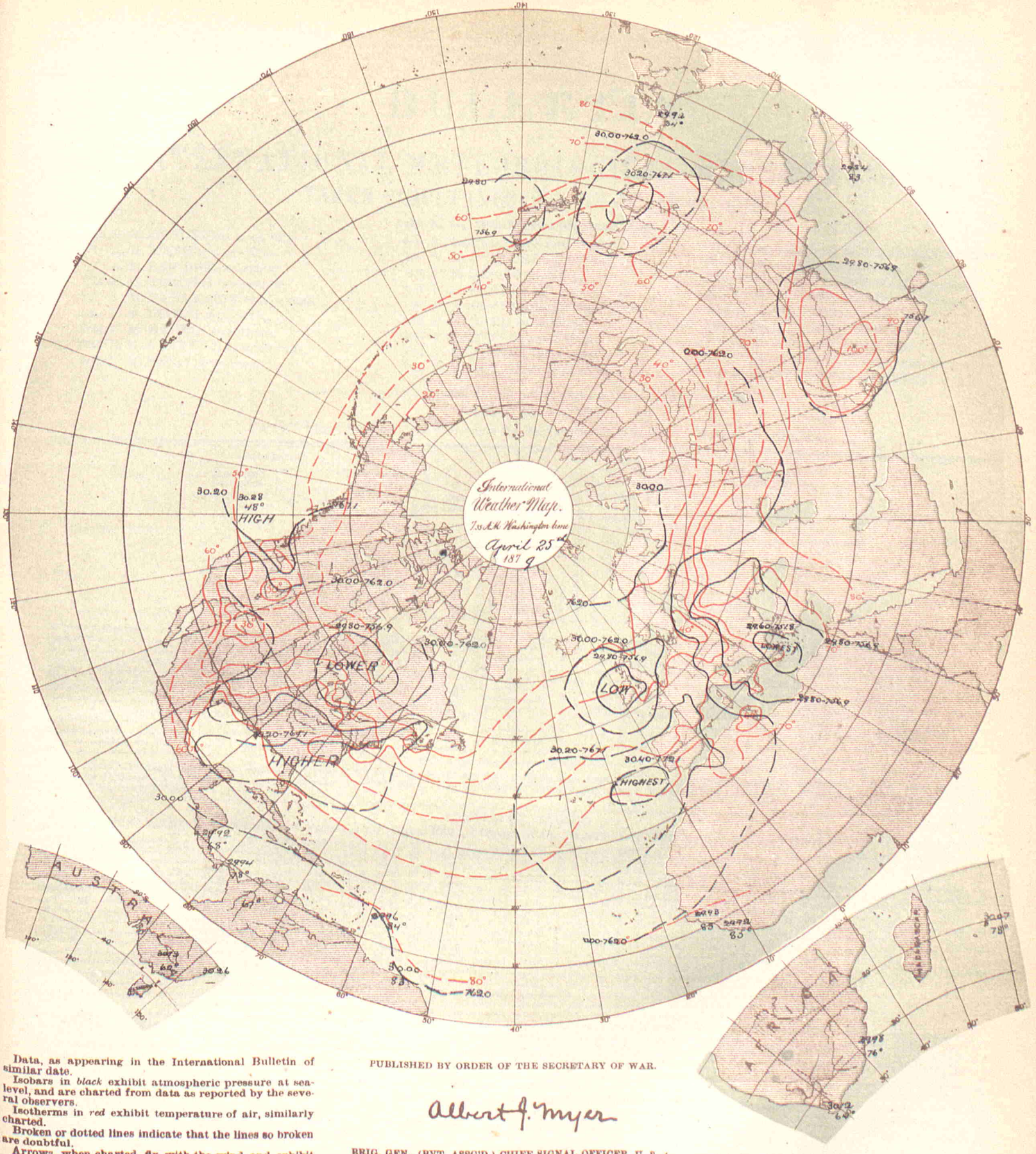
Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively by the letters c, k, s, n, d, f, p, hz., fg. and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 26, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 30.12 | 765.0 | 76.5 | 24.7 | 56 | E | | | 1 | | 5 | | | 0 | 0 | Cloudy | Kesxuche. |
| Algiers | | | 30.00 | 761.9 | 71.6 | 22.0 | 82 | W | | | 1 | | 0 | | | 0 | 0 | Clear | Tourilliere. |
| La Calle | | | 30.04 | 763.1 | 64.8 | 18.2 | 71 | NW | | | 3 | | 5 | | | 0 | 0 | Cloudy | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 30.18 | 766.5 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 30.13 | 765.3 | 71.6 | 22.0 | 19 | N | | | 3 | | 0 | | | 0 | 0 | Clear | Herbin. |
| Tebessa | | | 30.15 | 765.7 | 69.4 | 15.2 | 36 | W | | | 1 | | 0 | | | 0 | 0 | Clear | Watrin. |
| Geriville | | | 30.12 | 765.0 | 69.4 | 15.2 | 13 | NNW | | | 2 | | 5 | | | 0 | 0 | Cloudy | Brugniaux. |
| Laghouat | | | 30.12 | 765.1 | 74.1 | 23.4 | 30 | S | | | 3 | | 0 | | | 0 | 0 | Clear | Bertrand. |
| Biskra | | | 30.13 | 765.3 | 75.7 | 24.3 | 27 | NW | | | 1 | | 2 | | | 0 | 0 | Fair | Chanvaux. |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

## AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.24 | 742.8 | 29.78 | 756.5 | 59.0 | 15.0 | 64 | SE | | | 1 | | 4 | | | 0 | 0 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 28.99 | 736.3 | 29.77 | 756.1 | 40.6 | 4.8 | 84 | WSW | | | 3 | | 10 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 28.80 | 731.6 | 29.08 | 753.8 | 50.5 | 10.3 | 76 | N | | | 1 | | 10k | | | 0 | 0 | | Julius Mikolik. |
| Gratz | 28.52 | 724.4 | 29.75 | 755.6 | 59.0 | 15.0 | 57 | S | | | 3 | | 6 | | | 0.010 | 0.25 | | Julius Rospini. |
| Hermannstadt | 28.24 | 717.2 | 29.64 | 752.8 | 57.7 | 14.3 | 64 | NW | | | 2 | | 10 | | | 0.014 | 0.35 | | Andreas Rospini. |
| Kremsmünster | 28.44 | 722.5 | 29.78 | 756.4 | 52.2 | 11.2 | 51 | NW | | | 2 | | 3 | | | 0.146 | 3.7 | | Prof. A. Gottschling. |
| Lemberg | 28.65 | 727.8 | 29.65 | 753.1 | 44.2 | 6.9 | 79 | NW | | | 2 | | 10 | | | 0.020 | 0.5 | | Prof. C. Wagner. |
| Pola | 29.71 | 754.4 | 29.81 | 757.2 | 60.6 | 15.9 | 60 | SW | | | 1 | | 3 | | | 0 | 0 | | Dr. T. Stanecki. |
| Szathmar | 29.25 | 742.9 | 29.71 | 754.6 | 56.5 | 13.6 | 62 | W | | | 2 | | 8 | | | 0.051 | 1.3 | | I.R.Hydrographic Office |
| Szegedin | 29.43 | 747.6 | 29.70 | 754.5 | 62.4 | 16.9 | 71 | W | | | 1 | | 10 | | | 0 | 0 | | Julius Csics, S. J. |
| Trieste | 29.72 | 754.9 | 29.82 | 757.5 | 60.3 | 15.7 | 81 | NW | | | 1 | | 3 | | | 0.236 | 6.0 | | Karl Stancel. |
| Vienna | 29.09 | 738.8 | 29.81 | 757.1 | 50.0 | 10.0 | 57 | NNW | | | 2 | | 10 | | | 0 | 0 | | P. Busin. |
| | | | | | | | | | | | | | | | | | | | I. R. Central Met. Obs'y |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

## BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.54 | 760.4 | 29.75 | 755.6 | 51.8 | 11.0 | 62 | WSW | | | 1 | | 10 | | W | 0.008 | 0.20 | | Royal Observatory. |
| Furnes | 29.73 | 755.1 | 29.75 | 755.7 | 56.7 | 13.7 | 70 | W | | | 4 | | 4 | | | 0 | 0 | | M. E. de Cae. |
| Maeseyck | 29.65 | 753.1 | 29.78 | 756.3 | 50.2 | 10.1 | 94 | SSW | | | 0 | | 10 | | | 0.075 | 1.9 | | M. Pierrot. |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

**Entered at the Post Office at Washington, D. C., as Second-Class Matter.**

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.55 | 750.6 | 29.65 | 753.1 | 42.7 | 5.9 | ..... | SE | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | 0.180 | 4.57 | Misty | W. Boswell. |
| Ardrossan | 29.56 | 750.8 | 29.58 | 751.3 | 50 | 10.0 | ..... | S | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Raining | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.54 | 750.3 | 50.0 | 10.0 | ..... | S | 15 | 6.7 | ..... | ..... | 6 | ..... | ..... | Blank | Blank | D. clouds | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.59 | 751.6 | 54.3 | 12.4 | ..... | SSE | 13 | 5.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.62 | 752.3 | 47.2 | 8.4 | ..... | SSW | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light'g & thunrdo | Thomas Mackereth. |
| Bradford, Yorkshire | 29.21 | 741.9 | 29.61 | 752.1 | 53.7 | 12.1 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.18 | 4.6 | Overcast | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.96 | 761.0 | 29.99 | 761.7 | 85 | 29.4 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.66 | 753.4 | 60.0 | 15.6 | ..... | S | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | H. Todd. [O. |
| Cardington | ..... | ..... | 29.64 | 752.8 | 59.0 | 15.0 | ..... | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.58 | 751.3 | 29.71 | 754.6 | 56.3 | 13.5 | ..... | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | Blank | Blank | D. clouds | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.17 | 715.1 | 29.65 | 753.1 | 45.0 | 7.2 | ..... | NW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | Showery | Alexander Watt. |
| Donaghadee | 29.48 | 748.8 | 29.52 | 749.8 | 49 | 9.4 | ..... | SSE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 29.08 | 738.6 | 29.70 | 754.4 | 49 | 9.4 | ..... | SW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Misty | J. Costello. |
| Falmouth, Observatory | 29.45 | 748.0 | 29.68 | 753.9 | 55.6 | 13.1 | ..... | SW | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.53 | 699.2 | 29.84 | 757.9 | 83.5 | 28.6 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 86 | 30.0 | ..... | NW? | ..... | ..... | 0? | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's college | ..... | ..... | ..... | ..... | 51.5 | 10.8 | ..... | SSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 30.04 | 763.0 | 30.09 | 764.3 | 68.5 | 20.3 | ..... | W | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.37 | 746.0 | 29.58 | 751.3 | 49.1 | 9.5 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | D. G. Maclean. [O. |
| Great Yarmouth | 29.68 | 753.9 | 29.68 | 753.9 | 49 | 9.4 | ..... | SW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | Misty | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.52 | 749.8 | 29.69 | 754.1 | 58.4 | 14.7 | ..... | SW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | The staff, for G.B. Airy. |
| Guernsey | 29.62 | 749.8 | 29.74 | 755.4 | 55 | 12.8 | ..... | WSW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Dr. S.E.Hoskins, F.R.S. |
| Helston | 29.63 | 752.6 | 29.75 | 755.6 | 51 | 10.6 | ..... | SW | ..... | ..... | 4 | ..... | 3c. | ..... | ..... | 0.3 | 8. | Fine | M. P. Moyle. |
| Holyhead | 29.49 | 749.0 | 29.58 | 751.3 | 53 | 11.7 | ..... | SSW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | John Tilston. |
| Jersey | 29.51 | 749.5 | 29.80 | 756.9 | 53.0 | 11.7 | ..... | SW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | Blank | Blank | Gloomy | J. Fisher. |
| Kew, Observatory | 29.65 | 753.1 | 29.68 | 753.9 | 56.4 | 13.6 | ..... | SSW | 15 | 6.7 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | The Meteorological Of. |
| Leicester, Museum | 29.37 | 746.0 | 29.63 | 752.6 | 56.5 | 13.6 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.90 | 759.4 | 29.98 | 761.5 | 69 | 20.6 | ..... | NW | ..... | ..... | 3 | ..... | 3k | ..... | ..... | ..... | ..... | Blue sky | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.54 | 750.3 | 29.63 | 752.6 | 43 | 6.1 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.14 | 765.5 | 75.2 | 24.0 | ..... | E | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.45 | 748.0 | 29.64 | 752.8 | 58.1 | 14.5 | ..... | SSW | ..... | ..... | 2 | ..... | 9k;ck;d | ..... | SSE | 0.021 | 0.54 | Overcast | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.12 | 739.6 | 29.64 | 752.8 | 48.9 | 9.4 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.66 | 753.4 | 56 | 13.3 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | H. E. Bellamy. |
| Plymouth | 29.60 | 751.8 | 29.68 | 753.9 | 55.4 | 13.0 | ..... | SW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | John Merrifield. |
| Roche's Point | 29.45 | 748.0 | 29.54 | 750.3 | 54 | 12.2 | ..... | SW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded | Wm. Kennedy. |
| Saint Ann's Head | 29.44 | 747.8 | 29.60 | 751.8 | 50 | 10.0 | ..... | SSW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 41.2 | 5.1 | ..... | E | 35 | 15.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | Rev C.Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.63 | 752.6 | 29.70 | 754.4 | 67.0 | 19.4 | ..... | WSW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | W. H. Lyne. |
| Sheffield | 29.36 | 745.7 | 29.64 | 752.8 | 58.2 | 14.6 | ..... | SW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0.04 | 1.0 | Overcast | W. F. Cooper. |
| Silloth Rectory | 29.58 | 751.3 | 29.62 | 752.3 | 48.5 | 9.2 | 91 | W | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0.128 | 3.25 | Raining | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.23 | 742.4 | 29.63 | 752.6 | 47.0 | 8.3 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.47 | 748.5 | 29.68 | 753.9 | 55.6 | 13.1 | ..... | SW | ..... | ..... | 2-3 | ..... | 9 | ..... | ..... | ..... | ..... | Raining | C. H. Griffith, F. M. S. |
| Truro, Royal Institution | 29.63 | 752.6 | 29.66 | 753.4 | 58 | 14.4 | ..... | SW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | W. Newcombe. |
| Valencia, Observatory | 29.40 | 746.7 | 29.43 | 747.5 | 51.2 | 10.7 | ..... | SSE | 26 | 11.6 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | Misty | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.00 | 762.0 | 30.04 | 763.0 | 70.3 | 21.3 | 43 | S | 9 | 4.0 | ..... | 0 | 1 | ..... | ..... | 0 | 0 | Fine | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.92 | 760.0 | 58 | 14.4 | 81 | SW | ..... | ..... | 3 | ..... | 6k | ..... | ..... | 0.01 | 0.3 | Raining | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.63 | 752.6 | 52.0 | 11.1 | ..... | E | ..... | ..... | 2 | 2ck | ..... | SW | ..... | 0.01 | 0.3 | Fine | Andrew Gibb. |
| Mauritius, Observatory | 29.86 | 758.4 | 30.05 | 763.3 | 78.0 | 25.6 | 63 | E | 12.0 | 5.4 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | Fine | C. Meldrum. |
| Melbourne, Observatory | 30.08 | 764.0 | 30.17 | 766.3 | 63.5 | 17.5 | 92 | SE | 2 | 0.9 | ..... | ..... | 10 | ..... | ..... | 0.06 | 1.5 | Showery | R. L. J. Ellery. |
| MonachLt-house, (Hebrides) | ..... | ..... | 29.62 | 752.3 | 48 | 8.9 | ..... | E | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0.04 | 1.0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 29.95 | 760.7 | 41 | 5.0 | ..... | ENE | ..... | ..... | 6 | 4 | 6 | Calm | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 42', E. 29° 25' | NNW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle-Isle | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. J. Brown. |
| Ship British Commodore, N. 38° 50', W. 69° 55' | W | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 5 | W; E | D. clouds | Capt. J. W. Thorne. |
| —— City of Agra | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have generally been carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Upper. 0—10. | CLOUDS. Amount. Low'r. 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Calm | ..... | ..... | 0 | 1s | p | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.25 | 666.7 | 29.97 | 761.2 | 66.2 | 19.0 | 91 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.16 | 0.4 | ..... | Federico Maison |

NOTE.—For St. Jose the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches for an altitude of 1,145 meters, or 3,756.6 feet; the distinction between the upper and lower clouds is not always made; the rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.80 | 757.0 | 29.85 | 758.2 | 48.7 | 9.3 | 43 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 29.81 | 757.2 | 29.83 | 757.7 | 53.1 | 11.7 | ..... | ESE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 30.11 | 764.9 | 30.16 | 766.0 | 37.4 | 3.0 | 81 | S | ..... | ..... | 7 | ..... | 6 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Faröe) | 30.01 | 762.3 | 30.05 | 763.2 | 44.6 | 7.0 | 53 | ENE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | |
| Vestervig | 29.63 | 752.6 | 29.80 | 756.9 | 47.8 | 8.8 | 93 | NE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.30 | 744.2 | 29.85 | 758.2 | 52.9 | 11.6 | 75 | W | ..... | ..... | 1 | ..... | 5 | NW | WNW | 0.16 | 4. | Raining | Colignon, Director. |
| Amiens, Normal School | 29.74 | 755.4 | 29.85 | 758.2 | 57.6 | 14.2 | 76 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.181 | 4.6 | Covered | Bonvallet, Director. |
| Avignon, Normal School | 29.81 | 757.2 | 29.89 | 759.2 | 68.0 | 20 | 47 | WNW | ..... | ..... | 1 | ..... | 2 | ..... | NW | 0 | 0 | Clear | Giraud, Director |
| Bar-sur-Seine | 29.28 | 743.6 | 29.83 | 757.6 | 55.2 | 12.9 | 59 | NNW | ..... | ..... | 1 | ..... | 8km | ..... | NW | 0.260 | 6.6 | Very cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.62 | 749.8 | 29.78 | 756.5 | 57.7 | 14.3 | 57 | WSW | ..... | ..... | ..... | ..... | 8 | ..... | WNW | 0.059 | 1.50 | Very cloudy | Frere Eugene Marie, Dr |
| Besançon, Normal School | 28.99 | 736.3 | 29.89 | 759.2 | 50.7 | 10.4 | 81 | SW | ..... | ..... | 2 | ..... | 8 | ..... | W | 0.087 | 2.2 | Very cloudy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.06 | 738.2 | 29.97 | 761.3 | 55.2 | 12.9 | 68 | S | ..... | ..... | 1 | ..... | k | W | SW | 0.094 | 2.4 | ..... | Marlot, Director. |
| Bourges, Normal School | 29.32 | 744.6 | 29.86 | 758.5 | 55.8 | 13.2 | 86 | WSW | ..... | ..... | 3 | ..... | 10kn | SW | WSW | 0.067 | 1.7 | Raining | A. Waquet, Director |
| Brest, Naval Observatory | 29.52 | 749.7 | 29.76 | 755.9 | 58.3 | 14.6 | 72 | SW | ..... | ..... | 4 | ..... | 8 | ..... | SW | 0.187 | 4.75 | ..... | De Kermaree, Director |
| Carcassonne, Normal School | 29.58 | 751.4 | 29.99 | 761.7 | 64.4 | 18 | 46 | WNW | ..... | ..... | 3 | ..... | 5 | ..... | WNW | 0 | 0 | Cloudy | September, Director. |
| Caen, Normal School | 29.67 | 753.7 | 29.71 | 754.6 | 60.1 | 15.6 | 55 | WSW | ..... | ..... | 1 | ..... | 8 | ..... | WSW | 0.024 | 0.6 | Very cloudy | Lair, Director. |
| Chartres, Normal School | 29.15 | 740.3 | 29.70 | 754.4 | 59.9 | 15.5 | 81 | WSW | ..... | ..... | 1 | ..... | 7 | ..... | NW | 0.051 | 13. | ..... | Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.50 | 749.2 | 29.81 | 757.2 | 57.9 | 14.4 | 68 | W | ..... | ..... | 2 | ..... | 5 | W | W | 0 | 0 | Cloudy | Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.64 | 724.0 | 29.85 | 758.3 | 58.8 | 14.9 | 80 | W | ..... | ..... | 3 | ..... | 5 | ..... | W | 0.012 | 0.3 | Showery | Alluard, Director. |
| Commercy, Normal School | 28.56 | 725.4 | 29.81 | 757.1 | 48.7 | 9.3 | 86 | NW | ..... | ..... | 3 | ..... | 10 | ..... | NW | 0.35 | 9. | Raining | Dr. Coulet, Director |
| Commune de Grèasque*... | 28.77 | 730.7 | 29.91 | 759.7 | 59.5 | 15.3 | 53 | NW | ..... | ..... | 3 | ..... | 5 | ..... | NW | 0 | 0 | ½ covered | L. Kina, Director. |
| Grenoble, Normal School | 29.18 | 741.2 | 29.94 | 760.6 | 55.0 | 12.8 | 59 | NW | ..... | ..... | 1 | ..... | 8km | NW | ..... | 0 | 0 | Very cloudy | Ablard, Director |
| La Roche-sur-Yon, N. School | 29.69 | 754.2 | 29.91 | 759.7 | 57.2 | 14.0 | 72 | W | ..... | ..... | 3 | ..... | 8 | ..... | W | 0.110 | 2.8 | Very cloudy | Mouillot, Director |
| Le Mans, Normal School | 29.53 | 750.1 | 29.84 | 757.9 | 56.1 | 13.4 | 64 | W | ..... | ..... | 4 | ..... | 5 | W | W | 0.246 | 6.25 | Cloudy | Poirrier, Director |
| Lons-Le-Saulnier, N. School | 28.97 | 735.7 | 29.89 | 759.1 | 51.3 | 10.7 | 65 | SW | ..... | ..... | 4 | ..... | 8 | ..... | SW | 0.094 | 2.40 | Light rain | A. Baudry, Director. |
| Lorient, Naval Observatory | 29.74 | 755.5 | 29.84 | 758.0 | 56.8 | 13.8 | 78 | WSW | ..... | ..... | 6 | ..... | ..... | ..... | SW | 0.362 | 9.2 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Galzin, Directo. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mirecourt, Normal School | 28.77 | 730.8 | 29.84 | 757.8 | 49.3 | 9.6 | 84 | SW | ..... | ..... | 1 | ..... | 10 | ..... | E | 0.12 | 3. | Raining | Barbier, Director. |
| Nismes, Normal School | 29.67 | 753.7 | 29.87 | 758.8 | 66.9 | 19.4 | 41 | NW | ..... | ..... | 2 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 28.90 | 734.0 | 29.95 | 760.7 | 61.5 | 16.4 | 66 | S | ..... | ..... | 1 | ..... | ..... | N | S | 0 | 0 | ..... | Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.96 | 634.0 | ..... | ..... | 31.5 | — 0.3 | 96 | W | ..... | ..... | 8 | ..... | ..... | ..... | ..... | 0.094 | 2.4 | Foggy | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.93 | 760.3 | 29.96 | 761.1 | 57.6 | 14.2 | 76 | WSW | ..... | ..... | 3 | ..... | 8 | W | W | 0.51 | 13. | ¾ covered | Lt. E. Decante, Director. |
| Rouen, Normal School | 29.75 | 755.6 | 29.84 | 757.8 | 56.8 | 13.8 | 64 | WNW | ..... | ..... | 1 | ..... | 2 | ..... | W | 0.193 | 4.9 | Slightly cl'dy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.76 | 755.8 | 29.79 | 756.6 | 57.7 | 14.1 | 67 | SW | ..... | ..... | 2 | ..... | 5 | SW | SW | 0.072 | 1.84 | Cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.64 | 752.9 | 29.81 | 757.1 | 55.0 | 12.8 | 70 | NE | ..... | ..... | 1 | ..... | ..... | ..... | WSW | 0.346 | 8.8 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 29.04 | 737.5 | 30.13 | 765.2 | 53.6 | 12 | 54 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.98 | 25. | Raining | T. Huguet, Director. |
| Toulouse, Observatory | 29.34 | 745.1 | 30.00 | 762.5 | 58.6 | 14.8 | 66 | WNW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0.142 | 3.6 | ..... | Mercadier Julien. |
| Versailles Observatory | 29.32 | 744.7 | 29.81 | 757.2 | 53.6 | 12.0 | 65 | ?? | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.280 | 7.11 | ..... | Dr. A. Berigny, Director |
| Villefranche-sur-Saone, N.S. | 29.21 | 741.9 | 29.91 | 759.8 | 59.2 | 15.1 | 68 | WNW | ..... | ..... | 3 | ..... | 5 | N | NNE | 0.04 | 1. | Cloudy | Nicot, Director. |
| Sub-Stations. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.87 | 758.6 | 29.89 | 759.3 | 81.3 | 27.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marcl 6si. |
| Lyons Obs'y, (Park Station) | 29.29 | 744.0 | 29.89 | 759.3 | 67.4 | 14.1 | 42 | NW | ..... | ..... | 2 | ..... | 6 | ..... | N | 0 | 0 | Cloudy | Mr. Jays. |
| Mont-Louis | 24.78 | 629.4 | 30.10 | 764.4 | 50.0 | 10.0 | 58 | W | 18.0 | 5.8 | ..... | ..... | 2 | ..... | NW | 0.012 | 0.3 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.77 | 756.2 | 64.0 | 17.8 | 63 | SE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.53 | 750.0 | ..... | ..... | 52.5 | 11.4 | 76 | WNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.268 | 6.8 | Rain & hail. | Marié Davy, Director. |
| Perpignan | 29.86 | 758.4 | 29.96 | 761.1 | 63.9 | 17.7 | 80 | N | 26.2 | 11.7 | ..... | ..... | 1 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.45 | 570.3 | ..... | ..... | 34.9 | 1.6 | ..... | W | ..... | ..... | 4 | ..... | 10? | ..... | ..... | 0.117 | 2.98 | Clear | Gen'l de Nansouty. |
| Tours | 29.66 | 753.4 | 29.86 | 758.4 | 59.0 | 15.0 | 58 | NW | ..... | ..... | 3 | ..... | 7 | ..... | W | 0.075 | 1.9 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.14 | 765.5 | 30.16 | 766.1 | 55.0 | 12.8 | 62 | ESE | 8.9 | 4.0 | ..... | 10ck | ..... | ..... | ..... | 0 | 0 | Covered | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand, Nice and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall is measured at 7, 8 or 9 a.m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a.m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p.m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi. (Plantade) 2,360 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135.0 millimeters, or 5.315 inches has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–1 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.99 | 736.3 | 29.83 | 757.6 | 55.9 | 13.3 | 57 | S | | | 5 | | 9 | S | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.69 | 754.1 | 29.86 | 758.5 | 53.6 | 12.0 | 45 | NE | | | 1 | | 2 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.28 | 743.6 | 29.80 | 757.0 | 47.5 | 8.6 | 64 | NW | | | 3 | | 10 | NW | | 0.019 | 0.47 | | Royal University Obs'y |
| Carlsruhe | 29.40 | 746.7 | 29.82 | 757.5 | 50.0 | 10.0 | 87 | SW | | | 2 | | 10 | SW | | 0.157 | 4.0 | Raining | Albert Senz. |
| Cassel | 29.15 | 740.5 | 29.76 | 755.8 | 59.4 | 15.2 | 54 | SSW | | | 2 | | 7 | SW | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.59 | 751.6 | 29.75 | 755.7 | 53.6 | 12.0 | 72 | S | | | 3 | | 9 | | | | | Raining | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.45 | 748.1 | 29.82 | 757.4 | 53.2 | 11.8 | | S | | | 1 | | 9 | | | 0.031 | 0.8 | | Physical Society. |
| Freienwalde on the Oder | 29.80 | 756.9 | 29.84 | 757.9 | 56.7 | 13.7 | 60 | NNW | | | 3 | | 1cs | NNW | | 0 | 0 | | Assmann., M. D. |
| Friedrichshafen | 28.41 | 721.5 | 29.84 | 757.9 | 51.4 | 10.8 | 59 | S | | | 2 | | 10 | S | | 0.016 | 0.4 | Light rain | M. Wilhelm. |
| Hamburg | 29.74 | 755.4 | 29.81 | 757.2 | 53.6 | 12.0 | 40 | SE | | | 2 | | 1cs | | | 0 | 0 | Clear. | Captain F. Hegeman. |
| Kiel | 29.80 | 756.9 | 29.82 | 757.3 | 53.4 | 11.9 | 50 | ESE | | | 1 | | 5 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.57 | 751.1 | 29.65 | 753.2 | 39.2 | 4.0 | 91 | NW | | | 5 | | 10 | | | 0.008 | 0.2 | | Prof. E. Luther. |
| Köslin | | | 29.77 | 756.2 | 41.5 | 5.3 | | NE | | | 4 | | 1 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.41 | 746.9 | 29.83 | 757.6 | 53.6 | 12.0 | 39 | ESE | | | 1 | | 2 | | | 0 | 0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.59 | 751.6 | 29.64 | 752.8 | 43.0 | 6.1 | 88 | NNE | | | 3 | | 10n | | | | | | Skalweit. |
| Neufahrwasser | 29.72 | 755.0 | 29.74 | 755.4 | 37.8 | 3.2 | 93 | NNW | | | 4 | | 10 | | | 0.154 | 3.9 | Raining | A. Lothes. |
| Posen | 29.54 | 750.2 | 29.83 | 757.7 | 44.6 | 7.0 | 79 | NW | | | 5 | | 10 | | | 0.004 | 0.1 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.30 | 744.2 | 29.86 | 758.3 | 50.4 | 10.2 | 94 | SW | | | 2 | | 10 | SSW | | 0.064 | 1.62 | Raining | Imp. University Observatory. |
| Stuttgart | 28.85 | 732.7 | 29.79 | 756.6 | 50.4 | 10.2 | 78 | W | | | 1 | | 10 | | | 0.102 | 2.6 | Raining | Prof. Schoder. |
| Treves (Trier) | 29.25 | 743.0 | 29.77 | 756.1 | 51.4 | 10.8 | 78 | SW | | | 3 | | 10 | | | 0.091 | 2.31 | | Prof. Flesch. |
| Weissenburg (Bavaria) | 28.31 | 719.2 | 29.82 | 757.4 | 52.5 | 11.4 | 61 | WSW | 4 | 2 | | | 10 | | NW | 0 | 0 | Light fog | Dr. Van Bebber |
| Wustrow, Naval School | 29.82 | 757.5 | 29.85 | 758.1 | 50.7 | 10.4 | 50 | NE | | | 1 | | 2s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.45 | 748.0 | 29.84 | 757.8 | 66.6 | 19.2 | | SW | | | 2.0 | | | | | | | ⅜ Clear | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.77 | 756.2 | 29.82 | 757.5 | 82.1 | 27.8 | 71 | WSW | | | | | 0 | | | 0 | 0 | Blue sky | |
| Beesa | | | | | 100.8 | 38.2 | 7 | WSW | 6.8 | 3.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.77 | 756.2 | 29.81 | 757.2 | 84.4 | 29.1 | 70 | NW | 18 | 8.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.83 | 706.8 | 29.76 | 756.0 | 96.2 | 35.7 | 26 | WNW | | | | | 2 | | | 0 | 0 | D. clouds | |
| Lahore | 28.96 | 735.5 | 29.67 | 753.6 | 99.2 | 37.3 | 18 | Calm | 1.5 | 0.7 | | | 6 | | | 0 | 0 | Misty | |
| Belgaum | 27.34 | 694.5 | 29.85 | 758.3 | 82.1 | 27.8 | 80 | W | 21 | 9.4 | | | 3 | E;W | E;W | 0.39 | 9.9 | Thunder-storm. | |
| Roorkee | 28.81 | 731.7 | 29.67 | 753.7 | 97.7 | 36.5 | 11 | NW | 2.2 | 1.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Agra | 29.17 | 741.0 | 29.71 | 754.7 | 107.6 | 42.0 | 13 | W | | | | | | | | 0 | 0 | | |
| Nagpur | 28.72 | 729.4 | 29.71 | 754.7 | 104.2 | 40.1 | 18 | Calm | 5.3 | 2.4 | | | 7 | | | 0 | 0 | D clouds | |
| Lucknow | 29.32 | 744.8 | 29.68 | 754.0 | 100.0 | 37.8 | 39 | WNW | 1.7 | 0.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.42 | 747.3 | 29.72 | 755.0 | 96.6 | 35.9 | 17 | Calm | 2.7 | 1.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.52 | 749.8 | 29.70 | 754.3 | 98.0 | 36.7 | 12 | W | 1.0 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.76 | 705.0 | 29.71 | 754.6 | 92.8 | 33.8 | 26 | WNW | 4 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.66 | 753.3 | 29.74 | 755.4 | 91.9 | 33.3 | | S | 8 | 3.6 | | | 0 | | | 0 | 0 | | |
| Calcutta (Alipore) | 29.71 | 754.7 | 29.74 | 755.3 | 90.3 | 32.4 | 67 | S | 10 | 4.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.36 | 745.6 | 29.74 | 755.4 | 85.8 | 29.9 | 68 | ESE | 4.1 | 1.8 | | | 4 | | | 0 | 0 | D. clouds | |
| Chittagong | 29.72 | 755.0 | 29.82 | 757.3 | 85.9 | 29.9 | 76 | SW | 7.9 | 3.5 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.52 | 749.8 | 29.86 | 758.4 | 73.8 | 23.2 | 88 | ENE | 3.9 | 1.7 | | | 8 | SW | SW | 0.80 | 20.3 | D. clouds | |
| Jubbulpore | 28.39 | 721.2 | 29.71 | 754.5 | 99.7 | 37.6 | 12 | Calm | 1.8 | 0.8 | | | 0 | | | 0 | 0 | Blue sky | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since observation of the preceding day.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.38 | 746.2 | 29.79 | 756.6 | 60.6 | 15.9 | 66 | SW | 7.4 | 3.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.23 | 742.5 | 29.74 | 755.5 | 65.1 | 18.4 | 45 | S | ..... | ..... | 1 | ..... | 8 | SSE | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.67 | 753.5 | 29.78 | 756.3 | 64.2 | 17.9 | 62 | SE | 6.9 | 3.1 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni. |
| Moncalieri | 28.89 | 733.7 | 29.78 | 756.5 | 62.8 | 17.1 | 34 | SW | 1.8 | 0.8 | ..... | ..... | 2 | WNW | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.61 | 752.0 | 29.80 | 756.9 | 61.7 | 16.5 | 68 | S | 8.1 | 3.6 | ..... | ..... | 10 | SE | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.85 | 707.3 | 29.75 | 755.6 | 60.1 | 15.6 | 39 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.73 | 755.2 | 29.78 | 756.4 | 62.4 | 16.9 | 56 | E | 13.7 | 6.1 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.56 | 750.8 | 29.82 | 757.3 | 64.4 | 18.0 | 58 | SW | ..... | ..... | 2 | ..... | 7 | SW | ..... | 0 | 0 | ..... | Cav. F. Meucci |
| Leghorn | 29.73 | 755.1 | 29.81 | 757.2 | 62.4 | 16.9 | 71 | WSW | ..... | ..... | 4 | ..... | 9 | W | ..... | 0.020 | 0.5 | ..... | Prof. P. Monte. |
| Rome | 29.72 | 754.9 | 29.89 | 759.3 | 64.8 | 18.2 | 59 | W | 15.4 | 6.9 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.61 | 752.1 | 29.86 | 758.5 | 63.0 | 17.2 | 41 | ENE | 15.4 | 6.9 | ..... | ..... | 7 | NW | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.05 | 737.8 | 29.93 | 760.1 | 61.2 | 16.2 | 77 | NW | 1.8 | 0.8 | ..... | ..... | 5 | ..... | ..... | 0.173 | 4.4 | ..... | Prof. D. Conti. |
| Cagliari | 29.78 | 756.4 | 29.97 | 761.3 | 63.3 | 17.4 | 41 | NW | ..... | ..... | 4 | ..... | 3 | NW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.71 | 754.6 | 29.96 | 761.0 | 65.7 | 18.7 | 50 | WSW | 13.0 | 5.8 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.90 | 759.5 | 29.97 | 761.3 | 64.2 | 17.9 | 79 | ENE | 8.7 | 3.9 | ..... | ..... | 9 | WSW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.38 | 746.3 | 29.94 | 760.4 | 64.0 | 17.8 | 62 | NNW | 4.3 | 1.9 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.15 | 765.8 | 30.17 | 766.3 | 51.9 | 11.1 | 78 | NNE | 7.9 | 3.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.96 | 761.0 | 30.16 | 766.0 | 53.3 | 11.8 | 83 | NE | 2.2 | 1.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | S. Takehayashi. |
| Tokei, (Yeddo) Observatory | 30.03 | 762.7 | 30.10 | 764.5 | 51.3 | 10.7 | 55 | NW | 10.2 | 4.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.03 | 635.8 | 30.13 | 765.2 | 50.0 | 10.0 | 42 | Calm | ..... | ..... | 0 | 2 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. L. Perez. |
| Leon | 24.41 | 620.0 | 30.10 | 764.6 | 57.9 | 14.4 | 67 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.07 | 586.0 | 30.11 | 764.7 | 51.8 | 11.0 | 59 | Calm | 0 | 0 | ..... | 7c | 0 | ..... | ..... | 0 | 0 | Very hazy | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 57.0 | 13.9 | 78 | NW | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | M. V. de Leon, M. E. |
| Tlacotalpam | 29.87 | 758.8 | 29.89 | 759.1 | 77.0 | 25.0 | 94 | N | ..... | ..... | 1 | 3 | 6 | NNE | N | 0.54 | 13.6 | Light fog | M. M. Chazaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | 22.51 | 571.7 | 30.11 | 764.8 | 57.9 | 14.4 | .... | ENE | ..... | ..... | 1 | 6 | 0 | ..... | ..... | 0 | 0 | Very clear | J. Castrillon. |
| Puebla, (Catholic Institute) | 23.39 | 594.1 | 30.15 | 765.9 | 51.1 | 10.6 | 67 | ENE | 1.3 | 0.6 | ..... | 1 | 0 | Calm | ..... | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.34 | 719.7 | 30.01 | 762.0 | 71.6 | 22.0 | 30 | NE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Clear | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,167.8m., or 7,112.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 507.3 m., or 1,664.4 ft. The data are published as given, except the conversions, which have been revised; the instrumental correction —0.88 mm., has been applied at this office to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.76 | 755.9 | 29.76 | 755.9 | 54.0 | 12.2 | ..... | W | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.185 | 4.7 | ..... | |
| Groningen | 29.66 | 753.4 | 29.72 | 754.8 | 52.5 | 11.4 | ..... | S | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Heider | 29.69 | 754.0 | 29.69 | 754.0 | 49.1 | 9.5 | ..... | SSW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.031 | 0.8 | ..... | |
| Hellevoetsluis | 29.72 | 754.9 | 29.72 | 754.9 | 50.2 | 10.1 | 82 | SW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.68 | 753.9 | 29.73 | 755.1 | 52.5 | 11.4 | 81 | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.177 | 4.5 | Very cloudy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.87 | 758.8 | 29.93 | 760.2 | 44.2 | 6.8 | 74 | NNW | 2.5 | 1.1 | ..... | ..... | 8 | ..... | ..... | 0.031 | 0.8 | ..... | |
| Brönö | 29.98 | 761.5 | 30.02 | 762.5 | 39.9 | 4.4 | 47 | E | 4 | 2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.75 | 755.7 | 29.90 | 759.4 | 49.3 | 9.6 | 42 | ENE | 4 | 2 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.98 | 761.4 | 30.02 | 762.5 | 38.1 | 3.4 | 70 | SW | 11 | 5 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p. m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra (Azores) | 30.13 | 765.3 | 30.32 | 770.1 | 68.9 | 17.7 | 88 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.118 | 3.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.14 | 740.2 | 30.15 | 765.8 | 69.8 | 20.7 | 55 | SW | 8.1 | 3.6 | ..... | ..... | 6 | WNW | ..... | 0 | 0 | ..... | Dr. A.M. R. dos Santos. |
| Funchal (Madeira) | 30.16 | 766.0 | 30.24 | 768.2 | 68.2 | 20.1 | 71 | SW | 4.9 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.90 | 759.5 | 30.26 | 768.6 | 63.5 | 17.5 | 77 | NNW | 15.0 | 6.7 | ..... | ..... | 9 | WNW | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada (Azores) | 30.28 | 769.1 | 30.35 | 770.9 | 69.4 | 20.8 | 73 | ESE | ..... | ..... | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias. N. 34° 55,′ W. 14° 29′ | ..... | ..... | 30.40 | 772.3 | 67.5 | 19.7 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ENE | 2 | ..... | Overcast | A. G. da Silva Costa, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| Duque da Terceira, San Jose de Bissao, Senegambia | ..... | ..... | 30.05 | 763.2 | 75.2 | 24 | ..... | Calm | ..... | ..... | 0 | ..... | 3 | ..... | ..... | 0 | ..... | D. clouds | C.C.da Fonseca Ferreira, Comd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, S. 6° 44′. E. 10° 47′ | ..... | ..... | 29.91 | 759.6 | 83.5 | 28.8 | ..... | N | ..... | ..... | 1 | ..... | 8 | ..... | NE | 1 | SE | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa, San Jose de Bissao, Senegambia | ..... | ..... | 29.93 | 760.2 | 78.2 | 26.2 | ..... | NW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 1 | ..... | D. clouds | A. Ferreira, 2d Lt |
| Sá da Bandeira | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 29.97 | 761.2 | 74.3 | 23.5 | ..... | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 2 | ..... | Blue sky | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeirá gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.21 | 742.0 | 29.64 | 752.9 | 39.4 | 4.1 | 90 | W | 18 | 8 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Raining | Astronomical Obs. |
| Wilna | 29.06 | 738.2 | 29.47 | 748.4 | 66.2 | 19.0 | 66 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Astronomical Obs. |
| Dorpat | 29.40 | 746.7 | 30.64 | 752.8 | 54.1 | 12.3 | 87 | NE | 7 | 3 | ..... | ..... | 7k | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.67 | 753.6 | 29.69 | 754.0 | 43.2 | 6.2 | 91 | NE | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 28.97 | 735.8 | 29.60 | 751.7 | 54.3 | 12.4 | 93 | SSE | 11 | 5 | ..... | ..... | 10n;ks | ..... | ..... | ..... | ..... | Raining | Physical Cabinet. |
| Nikolaiev | 29.64 | 752.9 | 29.71 | 754.7 | 54.9 | 12.7 | 90 | S | 22 | 10 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Raining | Kurdakof. |
| Kertch | 29.77 | 756.1 | 29.79 | 756.6 | 62.2 | 16.8 | 88 | SSE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.11 | 739.4 | 29.63 | 752.7 | 68.2 | 20.1 | 56 | S | 4 | 2 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.57 | 751.1 | 29.77 | 756.1 | 77.9 | 25.5 | 46 | SE | 9 | 4 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.00 | 761.9 | 30.02 | 762.4 | 39.0 | 3.9 | 69 | ENE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Sselliwerstow. |
| Tiflis | 28.64 | 727.4 | 29.97 | 761.2 | 88.7 | 31.5 | 23 | Calm | 0 | 0 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.11 | 764.7 | 30.02 | 762.6 | 77.5 | 25.3 | 48 | SSE | 18 | 8 | ..... | ..... | 6s | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.49 | 749.0 | 29.94 | 760.4 | 75.7 | 24.3 | 44 | S | 16 | 7 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.61 | 752.1 | 29.87 | 758.7 | 69.4 | 20.8 | 50 | SSE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light rain | Physical Cabinet. |
| Ekaterinburg | 29.04 | 737.7 | 29.97 | 761.1 | 70.9 | 21.6 | 44 | NNW | 7 | 3 | ..... | ..... | 7kn;ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.83 | 757.7 | 30.05 | 763.3 | 85.1 | 29.5 | 43 | N | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.43 | 721.9 | 29.90 | 759.5 | 81.5 | 27.5 | 39 | Calm | 0 | 0 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.50 | 749.4 | 30.01 | 762.2 | 46.2 | 7.9 | 38 | Calm | 0 | 0 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeniseisk | 29.81 | 757.1 | 30.11 | 764.8 | 29.5 | — 1.4 | 40 | NNW | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking (China) | 29.63 | 752.6 | 29.77 | 756.2 | 68.9 | 20.5 | 30 | SW | 7 | 3 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.92 | 760.0 | 30.02 | 762.5 | 37.2 | 2.9 | 78 | SE | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.85 | 758.2 | 29.96 | 760.9 | 61.7 | 16.5 | 61 | ESE | 3.4 | 1.50 | ..... | ..... | 1k | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 30.01 | 762.3 | 30.07 | 763.7 | 60.4 | 15.8 | 64 | NW | 2.4 | 1.09 | ..... | ..... | 10 | ..... | ..... | 0.051 | 1.3 | Covered | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.08 | 687.8 | ..... | ..... | 60.8 | 16.0 | 36 | SW | 6.4 | 2.86 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Domingo Martin y Peres. |
| Madrid, Royal Oservatory | 27.85 | 707.4 | ..... | ..... | 66.6 | 19.2 | 57 | NW | 12.7 | 5.67 | ..... | 1 | 3 | ..... | ..... | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.91 | 759.7 | 30.06 | 763.4 | 81.5 | 27.5 | 33 | N | 4.8 | 2.14 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.21 | 741.9 | 30.10 | 764.4 | 59.4 | 15.2 | 67 | SW | 17.4 | 7.8 | ..... | ..... | 7 | ..... | ..... | 0.114 | 2.9 | Cloudy | R. Gil Villanueva, Dir. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.99 | 761.7 | 30.05 | 763.3 | 73.8 | 23.2 | 63 | E | 12.5 | 5.6 | ..... | 2c | 0 | WSW | ..... | 0 | 0 | Fair | Benito Vines, S. J |
| Manilla, Philippine Islands | 29.87 | 758.6 | 29.91 | 759.9 | 82.9 | 28.3 | 78 | E | 1.1 | 0 5 | ..... | 1 | 6 | SW | NE | 0.087 | 2.2 | Covered | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.08 | 764.1 | 30.18 | 766.6 | 63.5 | 17.5 | 75 | NW | 12.9 | 5.7 | ..... | 0 | 5 | ..... | N | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W.I | 29.99 | 761.7 | 30.08 | 764.0 | 76.3 | 24.6 | 70 | NE | 17.2 | 7.69 | ..... | 6ks | 4k | NE | NE | 0.335 | 8.50 | Cloudy | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

**Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.**

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.05 | 763.3 | 30.09 | 764.3 | 38.8 | 3.8 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.01 | 762.2 | 30.06 | 763.5 | 41.0 | 5.0 | 54 | E | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.95 | 760.8 | 30.00 | 762.1 | 40.3 | 4.6 | 47 | NNE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.67 | 753.5 | 29.84 | 758.0 | 47.1 | 8.4 | 32 | NNE | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.69 | 754.1 | 29.75 | 755.6 | 38.5 | 3.6 | 77 | NNE | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.81 | 757.1 | 29.88 | 759.0 | 45.0 | 7.2 | 40 | N | 16.1 | 7.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Nils Ekholm. |

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

**Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.**

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.47 | 723.1 | 29.90 | 759.5 | 51.4 | 10.8 | 62 | SW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0.016 | 0.4 | Covered | The Observatory. |
| Zurich | 28.24 | 717.4 | 29.91 | 759.6 | 46.8 | 8.2 | 82 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.217 | 5.5 | Raining | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—At Geneva the corresponding departures from the normal values are: Barometer, —1.3 mm.; Thermometer,—2.7 Cent.; Relative Humidity, +5 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,338.6 feet, and that of Zurich 470 m., or 1,542.0 ft.

## TURKISH SERIES.

**Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.**

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.74 | 755.4 | 67.8 | 19.9 | 54 | WSW | 12 | 5.5 | ..... | ..... | 6 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.20 | 767.0 | 96.8 | 36.0 | ..... | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.94 | 764.0 | 68.0 | 17.2 | ..... | W | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut. (Syria,) Lee Obs'y | 29.82 | 757.4 | 29.94 | 760.5 | 79.0 | 26.1 | 71 | NE | ..... | ..... | 1 | ..... | 7c | ..... | ..... | 0 | 0 | D. Clouds | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

**Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.**

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.04 | 763.0 | 30.11 | 764.8 | 36.8 | 2.7 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Hon. J. Ferguson. |
| Brockville, Ontario | 29.72 | 754.9 | 29.03 | 762.8 | 45 | 7.2 | ..... | SE | 1 | 0.4 | ..... | ..... | 10s | ..... | SE | 0.21 | 5.3 | Cloudy | W. R. Bigg. |
| *Chatham, N. B | 30.06 | 763.5 | 30.12 | 765.0 | 36 | 2.2 | 55 | N | 1 | 0.4 | ..... | 10ck | 0 | N | ..... | 0 | 0 | Fair | G. A. Blair. |
| Charlottetown, P. E. Island | 29.97 | 761.2 | 30.01 | 762.2 | 38 | 3.3 | 82 | N | 20 | 8.9 | ..... | ..... | 8ks | ..... | N | 0 | 0 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.78 | 756.4 | 29.98 | 761.5 | 44.6 | 6.9 | 86 | E | ..... | ..... | 1 | ..... | 10s | ..... | Calm | 0.05 | 1.3 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | 29.96 | 761.0 | 30.15 | 765.3 | 36.5 | 2.5 | ..... | W | ..... | ..... | 1 | 0 | 1s | ..... | ..... | 0 | 0 | Fine | H. A. Johnson. |
| Esquimault, B. C | 30.11 | 764.8 | 30.16 | 766.1 | 44.3 | 6.8 | 82 | WSW | 3 | 1.3 | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Fine | W. H. Bevis. |
| *Father Point, Quebec | 30.03 | 762.8 | 30.05 | 763.3 | 43 | 6.1 | 59 | S | 12 | 5.4 | ..... | 5k | 5s | SW | SW | 0 | 0 | Cloudy | J. McWilliams. |
| Fredericton, N. B | 30.06 | 763.5 | 30.12 | 765.0 | 39.1 | 3.9 | 64 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. Harrison. |
| *Fort Garry, Manitoba | 28.77 | 730.7 | 29.60 | 751.8 | 35 | 1.7 | 100 | N | 20 | 8.9 | ..... | 5k | 5n | N | N | 0.530 | 13 46 | Light rain | James Stewart. |
| Granton, Ontario | 28.88 | 733.5 | 29.97 | 761.2 | 55 | 12.8 | ..... | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | Inap. | Inap. | Foggy | James Grant. |
| *Halifax, N. S | 29.79 | 756.7 | 29.93 | 760.2 | 42 | 5.6 | 59 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | F. Allison, M. A. |
| Hamilton, Ontario | 29.64 | 752.8 | 30.01 | 762.2 | 56.7 | 13.7 | 89 | SW | ..... | ..... | 1 | 8cs | 0 | SW | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.65 | 753.1 | 29.99 | 761.7 | 47 | 8.3 | 90 | N | 8 | 3.6 | ..... | ..... | 10ks | ..... | Calm | 0.10 | 2.5 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.85 | 758.2 | 29.89 | 759.2 | 35.7 | 2.0 | 95 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | ..... | 0.39 | 9.9 | Raining | C. H. Rigby. |
| Moose Factory, Ontario | 30.09 | 764.3 | 30.13 | 765.3 | 34.0 | 1.1 | 79 | NE | ..... | ..... | 3 | 8ck | 0 | ..... | ..... | 0 | 0 | Cloudy | J. R. Nason. |
| *Montreal, Quebec | 29.82 | 757.4 | 30.02 | 762.5 | 41 | 5.0 | 91 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | ..... | 0.27 | 6.9 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.33 | 745.0 | 30.03 | 762.8 | 42 | 5.7 | 99 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0.06 | 1.5 | Foggy | Rev. R. Mosly. |
| Peterboro, Ontario | 29.24 | 742.7 | 29.98 | 761.5 | 53.7 | 12.1 | 95 | S | ..... | ..... | 0 | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.30 | 744.2 | 29.99 | 761.7 | 53 | 11.7 | 93 | SW | 2 | 0.9 | ..... | ..... | Haze | ..... | ..... | 0 | 0 | Hazy | H. Morgan. |
| Port Hastings, N. S | 29.84 | 757.9 | 29.89 | 759.2 | 37.4 | 3.0 | ..... | NW | 4 | 1.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.34 | 745.2 | 29.98 | 761.5 | 57 | 13.9 | 83 | SW | 2 | 0.9 | ..... | 8ck | 0 | W | ..... | Inap. | Inap. | Cloudy | M. Payne. |
| *Quebec, Quebec | 29.75 | 755.6 | 30.08 | 764.0 | 42 | 5.6 | 74 | NE | ..... | ..... | 1 | ..... | 10n | ..... | NE | 0 | 0 | Cloudy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.55 | 750.6 | 30.01 | 762.2 | 42 | 5.6 | 100 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | NW | 0.04 | 1.0 | Cloudy | W. H. McIntyre. |
| St. Andrews, N. B | 30.00 | 762.0 | 30.05 | 763.3 | 43 | 6.1 | 62 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| St. John, N. B | 29.90 | 759 4 | 30.07 | 763.8 | 40 | 4.4 | 73 | NE | 7 | 3.1 | ..... | 1c | 0 | ..... | ..... | 0 | 0 | Fine | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.27 | 743.4 | 29.98 | 761.5 | 48 | 8.9 | 98 | SE | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 0.19 | 4.8 | Foggy | K. Stewart. |
| Stayner, Ontario | 29.22 | 742.2 | 30.00 | 762.0 | 47 | 8.3 | 92 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0.08 | 2.0 | Foggy | R. J. Cole. |
| Stratford, Ontario | 28.69 | 728.7 | 29.96 | 761.0 | 53.0 | 11.7 | 99 | NW | 3 | 1.3 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.85 | 758.2 | 29.89 | 759.2 | 36 | 2.2 | 91 | N | 16 | 7.2 | ..... | ..... | 10n | ..... | ..... | 0.46 | 11.7 | Light rain | T. C. Hill. |
| *Toronto, Ontario | 29.62 | 752.3 | 30.00 | 762.0 | 54 | 12.2 | 91 | N | 2 | 0.9 | ..... | ..... | 10ks | ..... | SW | 0.02 | 0.5 | Cloudy | Magnetic Observatory. |
| Windsor, N. S | 29.92 | 760.0 | 30.02 | 762.5 | 36.5 | 2.5 | 85 | NW | 11 | 4.9 | ..... | 2k | 0 | ..... | ..... | 0.01 | 0.3 | Fine | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 37.0 | 2.8 | 100 | E | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 1.30 | 33.0 | Rainy | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'r 0—10. | Clouds. Amount. Lw'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.74 | 755.4 | 29.97 | 761.2 | 53 | 11.7 | 67 | Calm | 0 | 0 | ..... | 0 | 8ks | ..... | W | 0 | 0 | Fair | |
| Alpena, Michigan | 29.33 | 745.0 | 29.98 | 761.5 | 43 | 6.1 | 92 | SE | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0.07 | 1.8 | Foggy | |
| Atlanta, Georgia | 28.94 | 735.1 | 30.06 | 763.5 | 62 | 16.7 | 56 | SE | 8 | 3.6 | ..... | Haze | 5s | Calm | Calm | 0 | 0 | Fair | |
| Atlantic City, New Jersey | 29.97 | 761.2 | 29.98 | 761.5 | 60 | 15.6 | 82 | W | 5 | 2.2 | ..... | 10c | 0 | W | ..... | 0 | 0 | Cloudy | |
| Augusta, Georgia | 30.00 | 762.0 | 30.18 | 766.6 | 64 | 17.8 | 89 | Calm | 0 | 0 | ..... | 8c | Sm'e | S | Calm | 0 | 0 | Fair | |
| Baltimore, Maryland | 29.97 | 761.2 | 30.02 | 762.5 | 70 | 21.1 | 48 | NW | 5 | 2.2 | ..... | Haze | 5s; sm | Calm | Calm | Inap. | Inap. | Smoky | |
| Barnegat, New Jersey | 29.94 | 760.5 | 29.96 | 761.0 | 59 | 15.0 | 81 | W | 2 | 0.9 | ..... | 5cs; ck | Fog | Calm; W | Calm | 0.01 | 0.3 | Fair | |
| Bismarck, Dakota | 27.88 | 708.1 | 29.73 | 755.1 | 44 | 6.7 | 67 | W | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Boerne, Texas | 28.44 | 722.4 | 29.72 | 754.9 | 62 | 16.7 | 72 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boise City, Idaho | 27.24 | 691.9 | 30.20 | 767.1 | 32 | 0.0 | 59 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boston, Massachusetts | 29.88 | 758.9 | 30.04 | 763.0 | 39 | 3.9 | 87 | E | 12 | 5.4 | ..... | ..... | 10s | ..... | E | 0.02 | 0.5 | Cloudy | |
| Brackettville, Texas | 28.73 | 729.7 | 29.74 | 755.4 | 63 | 17.2 | 83 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.56 | 725.4 | 29.53 | 750.0 | 49 | 9.4 | 85 | NW | 15 | 6.7 | ..... | 0 | 8ks | ..... | NW | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.87 | 758.7 | 29.92 | 760.0 | 71 | 21.7 | 90 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.29 | 744.0 | 30.00 | 762.0 | 41.5 | 5.3 | 87 | SW | 5 | 2.2 | ..... | ..... | 10s; hz | ..... | Calm | 0 | 0 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Burlington, Vermont | 29.72 | 754.9 | 30.01 | 762.2 | 44 | 6.7 | 79 | E | 6 | 2.7 | ..... | ..... | 10c | ..... | Calm | 0.04 | 1.0 | Cloudy | |
| Cairo, Illinois | 29.57 | 751.6 | 29.95 | 760.7 | 62 | 16.7 | 83 | E | 8 | 3.6 | ..... | ..... | 10s | ..... | E | 0.33 | 8.4 | Cloudy | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 29.15 | 638.8 | 29.95 | 760.7 | 68 | 14.4 | 17 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 45 | 7.2 | 46 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.39 | 695.7 | 29.96 | 761.0 | 33 | 0.6 | 79 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.14 | 765.5 | 30.15 | 765.8 | 64 | 17.8 | 89 | SW | 15 | 6.7 | ..... | Sm'e | Sm'e | ..... | SW | 0 | 0 | Smoky | |
| Cape Henry, Virginia | 30.05 | 763.3 | 30.07 | 763.8 | 65 | 18.3 | 78 | SW | 16 | 7.2 | ..... | 0 | 5ks | ..... | Calm | 0 | 0 | Fair | |
| Cape Lookout, N. Carolina | 30.15 | 765.8 | 30.16 | 766.1 | 64 | 17.8 | 89 | SW | 16 | 7.2 | ..... | Haze | Haze | Calm | SW | 0 | 0 | Dense haze | |
| Cape May, New Jersey | 29.91 | 759.7 | 29.94 | 760.5 | 57 | 13.9 | 81 | W | 12 | 5.4 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Castroville, Texas | 29.10 | 739.1 | 29.80 | 756.9 | 62 | 16.7 | 94 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.12 | 765.0 | 30.18 | 766.6 | 70 | 21.1 | 80 | SW | 4 | 1.8 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 23.98 | 609.1 | 29.92 | 760.0 | 38 | 3.3 | 91 | NE | 5 | 2.2 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Chicago, Illinois | 29.20 | 741.7 | 29.86 | 758.4 | 63 | 17.2 | 72 | S | 9 | 4.0 | ..... | 5cs | 0 | S | ..... | 0.01 | 0.3 | Fair | |
| Cincinnati, Ohio | 29.36 | 745.7 | 30.00 | 762.0 | 64 | 17.8 | 73 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | SW | Inap. | Inap. | Threatening | |
| Cleveland, Ohio | 29.28 | 743.7 | 29.98 | 761.5 | 62 | 16.7 | 72 | S | 3 | 1.3 | ..... | 5ck | 0 | SW | ..... | 0.34 | 8.6 | Fair | |
| Coleman City, Texas | 28.07 | 713.0 | 29.71 | 754.6 | 55 | 12.8 | 81 | Calm | 0 | 0 | ..... | 2c | 0 | Calm | ..... | 0.50 | 12.7 | Fair | |
| Columbus, Ohio | 29.19 | 741.4 | 30.00 | 762.0 | 62 | 16.7 | 72 | SE | 3 | 1.3 | ..... | ..... | 10s; sm' | ..... | Calm | 0 | 0 | Cloudy | |
| Concho, Texas | 27.96 | 710.2 | 29.62 | 752.3 | 55 | 12.8 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.42 | 747.2 | 29.88 | 758.9 | 59 | 15.0 | 94 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Davenport, Iowa | 29.19 | 741.4 | 29.81 | 757.2 | 61 | 16.1 | 77 | S | 3 | 1.3 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.33 | 643.4 | ..... | ..... | 36 | 2.2 | 71 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Decatur, Texas | 28.69 | 728.7 | 29.82 | 757.4 | 65 | 18.3 | 78 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.08 | 738.6 | 29.86 | 758.4 | 60 | 15.6 | 88 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.74 | 628.4 | 29.96 | 761.0 | 47 | 8.3 | 77 | NE | 16 | 7.2 | ..... | 5ck | 2s | W | W | 0 | 0 | Fair | |
| Des Moines, Iowa | 28.90 | 734.0 | 29.76 | 755.9 | 57 | 13.9 | 75 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 29.82 | 744.7 | 29.97 | 761.2 | 59 | 15.0 | 82 | SW | 3 | 1.3 | ..... | 2cs | 2s | NW | Calm | 0 | 0 | Fair | |
| Dodge City, Kansas | 27.22 | 691.4 | 29.44 | 747.8 | 55 | 12.8 | 74 | SW | 8 | 3.6 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.12 | 739.6 | 29.79 | 756.7 | 59 | 15.0 | 76 | S | 2 | 0.9 | ..... | 5k | Haze | SW | Calm | 0 | 0 | Fair | |
| Duluth, Minnesota | 29.03 | 737.3 | 29.71 | 754.6 | 41 | 5.0 | 91 | NE | 6 | 2.7 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Eagle Pass, Texa | 29.11 | 739.4 | 29.83 | 757.7 | 64 | 17.8 | 89 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.99 | 761.7 | 30.06 | 763.5 | 42 | 5.6 | 58 | N | 6 | 2.7 | ..... | 2c | Haze | Calm | Calm | 0 | 0 | Clear | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 64 | 17.8 | 94 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | ..... | 0 | 0 | Foggy | |
| El Paso, Texas | 26.16 | 664.4 | ..... | ..... | 57 | 13.9 | 17 | W | 8 | 3.6 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.28 | 743.7 | 29.98 | 761.5 | 59 | 15.0 | 82 | Calm | 0 | 0 | ..... | 5c | 0 | W | ..... | 0.03 | 0.8 | Fair | |
| Escanaba, Michigan | 29.22 | 742.2 | 29.87 | 758.7 | 46 | 7.8 | 84 | SE | 3 | 1.3 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Florence, Arizona | 28.41 | 721.6 | 30.01 | 762.2 | 58 | 14.4 | 32 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.68 | 703.1 | ..... | ..... | 38 | 3.3 | 90 | NW | 22 | 9.8 | ..... | ..... | 10n | ..... | NW | 0.03 | 0.8 | Light rain | |
| Fort Craig, New Mexico | 25.43 | 645.9 | 29.50 | 749.3 | 45 | 7.2 | 39 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.15 | 638.8 | 30.11 | 764.8 | 59 | 15.0 | 28 | SW | 6 | 2.7 | ..... | 2ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.34 | 745.2 | 29.86 | 758.4 | 59 | 15.0 | 94 | S | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Fort Griffin, Texas | 28.58 | 725.9 | 29.84 | 757.9 | 55 | 12.8 | 93 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.44 | 697.0 | ..... | ..... | 40 | 4.4 | 82 | NW | 20 | 8.9 | ..... | 2k | 0 | NW | ..... | 0.10 | 2.5 | Clear | |
| Fort McKavett, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort St. Michael, Alaska | 29.88 | 758.9 | 29.91 | 759.7 | 28 | — 2.2 | 100 | S | 37 | 16.5 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Fort Sill, Indian Territory | 28.64 | 727.4 | 29.73 | 755.1 | 56 | 13.3 | 93 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Stevenson, Dakota | 27.87 | 707.9 | ..... | ..... | 40 | 4.4 | 100 | NW | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.25 | 6.3 | Light rain | |
| Fredericksburg, Texas | 28.14 | 714.7 | 29.64 | 752.8 | 67 | 19.4 | 64 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 29.85 | 758.2 | 29.89 | 759.2 | 67 | 19.4 | 89 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Graham, Texas | 28.76 | 730.5 | 29.80 | 756.9 | 56 | 13.3 | 94 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.24 | 742.7 | 29.87 | 758.7 | 62 | 16.7 | 77 | SW | 13 | 5.8 | ..... | 2k | 5s | W | Calm | 0 | 0 | Fair | |
| Indianapolis, Indiana | 29.19 | 741.4 | 29.94 | 760.5 | 62 | 16.7 | 72 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Indianola, Texas | 29.90 | 759.4 | 29.94 | 760.5 | 68 | 20.0 | 95 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.74 | 730.0 | 29.85 | 758.2 | 62 | 16.7 | 77 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.13 | 765.3 | 30.15 | 765.8 | 70 | 21.1 | 80 | E | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.19 | 741.4 | 29.78 | 756.4 | 62 | 16.7 | 77 | S | 4 | 1.8 | ..... | 1c | 0 | W | ..... | 0 | 0 | Clear | |
| Key West, Florida | 30.04 | 763.0 | 30.08 | 764.0 | 76 | 24.4 | 64 | SE | 15 | 6.7 | ..... | 10cs; k | 0 | W; SE | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 30.07 | 763.8 | 30.09 | 764.3 | 63 | 17.2 | 87 | W | 17 | 7.6 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.10 | 739.1 | 30.10 | 764.5 | 60 | 15.6 | 71 | E | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Dense haze | |
| La Crosse, Wisconsin | 29.04 | 737.6 | 29.76 | 755.9 | 55 | 12.8 | 81 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.01 | 660.6 | 30.16 | 766.1 | 44 | 6.7 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.45 | 748.0 | 29.78 | 756.4 | 75 | 23.9 | 60 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.96 | 735.6 | 29.78 | 756.4 | 57 | 13.9 | 87 | S | 3 | 1.3 | ..... | 0 | Fog | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.65 | 753.1 | 29.99 | 761.7 | 52.0 | 11.1 | 93 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.03 | 0.8 | Light rain | |
| Louisville, Kentuckey | 29.42 | 747.2 | 29.96 | 761.0 | 65 | 18.3 | 73 | E | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Lynchburg, Virginia | 29.40 | 746.7 | 30.07 | 763.8 | 62 | 16.7 | 61 | W | 2 | 0.9 | ..... | 0 | 8ks | ..... | Calm | 0 | 0 | Cloudy | |
| Madison, Wisconsin | 28.84 | 732.5 | 29.79 | 756.7 | 59 | 15.0 | 76 | S | 3 | 1.3 | ..... | 1k | 0 | W | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.12 | 739.6 | 29.80 | 756.9 | 50 | 10.0 | 79 | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.25 | 717.5 | 29.99 | 761.7 | 57 | 13.9 | 81 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.62 | 752.3 | 29.93 | 760.2 | 63 | 17.2 | 88 | S | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | 0.72 | 18.3 | Light rain | |
| Milwaukee, Wisconsin | 29.12 | 739.6 | 29.82 | 757.4 | 58 | 14.4 | 82 | SW | 7 | 3.1 | ..... | 1k | 5s | Calm | W | Inap. | Inap. | Fair | |
| Mobile, Alabama | 29.95 | 760.7 | 29.99 | 761.7 | 72 | 22.2 | 76 | SE | 13 | 5.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Threatening | |
| Montgomery, Alabama | 29.83 | 757.7 | 30.06 | 763.5 | 64 | 17.8 | 62 | SE | 6 | 2.7 | ..... | 5cs | 5s | S | S | 0 | 0 | Cloudy | |
| Morgantown, West Virginia | 28.98 | 736.3 | 30.02 | 762.5 | 63 | 17.2 | 72 | Calm | 0 | 0 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Mt. Washington, N. H. | 23.72 | 602.5 | 30.08 | 764.0 | 34 | 1.1 | 90 | NE | 18 | 8.0 | ..... | 0 | 10ks | ..... | NE | 0.19 | 4.8 | Fair | |
| Nashville, Tennessee | 29.48 | 748.8 | 29.99 | 761.7 | 69 | 20.6 | 43 | SE | 4 | 1.8 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Cloudy | |
| New Haven, Connecticut | 29.85 | 758.2 | 29.96 | 761.0 | 50 | 10.0 | 82 | NE | 9 | 4.0 | ..... | 5ck | 0 | W | ..... | Inap. | Inap. | Fair | |
| New London, Connecticut | 29.93 | 760.2 | 29.98 | 761.5 | 52 | 11.1 | 79 | NE | 6 | 2.7 | ..... | 2ck | 1s | W | Calm | 0.08 | 2.0 | Fair | |
| New Orleans, Louisiana | 29.87 | 758.7 | 29.92 | 760.0 | 66 | 18.9 | 95 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 4.05 | 102.9 | Threatening | |
| Newport, Rhode Island | 29.94 | 760.5 | 29.99 | 761.7 | 47.5 | 8.6 | 82 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| New York, New York | 29.80 | 756.9 | 29.98 | 761.5 | 51 | 10.6 | 78 | SE | 2 | 0.9 | ..... | 5ck | 5s; fog | SE | Calm | 0.06 | 1.5 | Cloudy | |
| Norfolk, Virginia | 30.02 | 762.5 | 30.08 | 764.0 | 66 | 18.9 | 74 | SW | 9 | 4.0 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrumental error and temperature. Inches. | BAROMETER. Corrected for instrumental error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Upper. 0—10 | CLOUDS. Amount. Lower. 0—10 | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 28.90 | 684.8 | 29.48 | 748.6 | 49 | 9.4 | 64 | NE | 20 | 8.9 | ..... | 8c | 2s | SW | SW | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 30.16 | 766.1 | 30.20 | 767.1 | 38.4 | 3.6 | 91 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Omaha, Nebraska | 28.62 | 726.9 | 29.67 | 753.6 | 63 | 17.2 | 67 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.67 | 753.6 | 29.99 | 761.7 | 52 | 11.1 | 93 | W | 1 | 0.4 | ..... | ..... | 10m;fg | ..... | Calm | 0.09 | 2.3 | Light rain | |
| Pembina, Dakota | 28.68 | 728.5 | 29.51 | 749.5 | 40 | 4.4 | 100 | NW | 8 | 3 6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Philadelphia, Pa | 29.93 | 760.2 | 29.98 | 761.5 | 64 | 17.8 | 68 | W | 6 | 2.7 | ..... | 10cs | Haze | Calm | Calm | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.97 | 728.2 | 30.44 | 773.2 | 60 | 15.6 | 34 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.75 | 450.8 | 29.96 | 761.0 | 20 | — 6.7 | 39 | NW | 32 | 14.3 | ..... | 2cs | 5s | Calm | W | 0 | 0 | Cloudy | |
| Pioche, Nevada | 24.01 | 609.8 | 29.78 | 756.4 | 47 | 8.3 | 28 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.24 | 742.7 | 30.03 | 762.8 | 62 | 16.7 | 72 | W | 4 | 1.8 | ..... | 1ck | 0 | Calm | ..... | Inap. | Inap. | Clear | |
| Port Huron, Michigan | 29.30 | 744.2 | 29.95 | 760.7 | 59 | 15.0 | 82 | W | 2 | 0.9 | ..... | 0 | 5ks | ..... | W | 0 | 0 | Fair | |
| Portland, Maine | 30.04 | 763.0 | 30.09 | 764.3 | 42 | 5.6 | 74 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Portland, Oregon | 30.18 | 766.6 | 30.28 | 769.1 | 44.0 | 6.7 | 84 | SE | 3 | 1.3 | ..... | ..... | 10ks | ..... | N | Inap. | Inap. | Cloudy | |
| Prescott, Arizona | 24.69 | 627.1 | 30.05 | 763.3 | 41 | 5.0 | 41 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pilot Point, Texas | 28.92 | 734.6 | 29.71 | 754.6 | 63 | 17.2 | 88 | NE | 12 | 5.4 | ..... | 5k | 2s | N | NE | 0 | 0 | Cloudy | |
| Punta Rassa, Florida | 30.11 | 764.8 | 30.13 | 765.3 | 70 | 21.1 | 75 | E | 9 | 4.0 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Red Bluff, California | 29.59 | 751.6 | 29.94 | 760.5 | 60.2 | 15.7 | 70 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rio Grande City, Texas | 28.63 | 752.6 | 29.84 | 757.9 | 67 | 19.4 | 89 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rochester, New York | 29.39 | 746.5 | 30.00 | 762.0 | 57 | 13.9 | 75 | W | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Roseburg, Oregon | 29.67 | 753.6 | 30.26 | 768.6 | 36.0 | 2.2 | 90 | Calm | 0 | 0 | ..... | 1k | 0 | Calm | ..... | 0 | 0 | Clear | |
| Sacramento, California | 29.87 | 758.7 | 29.95 | 760.7 | 52 | 11.1 | 79 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.33 | 745.0 | 29.90 | 759.4 | 58 | 14.4 | 88 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | S | Inap. | Inap. | Cloudy | |
| St. Marks, Florida | 30.07 | 763.8 | 30.09 | 764.3 | 65 | 18.3 | 89 | SE | 8 | 3.6 | ..... | 1k | Haze | S | Calm | 0 | 0 | Fair | |
| St. Paul, Minnesota | 28.81 | 731.8 | 29.60 | 751.8 | 57 | 13.9 | 69 | SE | 8 | 3.6 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Salt Lake City, Utah | 25.64 | 651.2 | 29.97 | 761.2 | 44 | 6.7 | 45 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.23 | 742.4 | 29.80 | 756.9 | 65 | 18.3 | 80 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.93 | 760.2 | 30.01 | 762.2 | 56 | 13.3 | 87 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.33 | 745.0 | 29.98 | 761.5 | 65 | 17.2 | 67 | Calm | 0 | 0 | ..... | 5ck | 0 | W | ..... | 0.22 | 5.6 | Fair | |
| Sandy Hook, New Jersey | 29.93 | 760.2 | 29.96 | 761.0 | 48 | 8.9 | 93 | Calm | 0 | 0 | ..... | 5k | 5s | NW | NW | 0 | 0 | Cloudy | |
| San Francisco, California | 29.93 | 760.2 | 30.00 | 762.0 | 49 | 9.4 | 87 | W | 9 | 4.0 | ..... | 0 | 5ks | ..... | W | 0 | 0 | Fair | |
| Santa Fé, New Mexico | 23.23 | 590.0 | 29.77 | 756.1 | 44 | 6.7 | 28 | E | 5 | 2.2 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.08 | 764.0 | 30.18 | 766.6 | 71 | 21.7 | 80 | S | 4 | 1.8 | ..... | 8cs | Fog | S | Calm | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.65 | 753.1 | 29.86 | 758.4 | 64 | 17.8 | 94 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Silver City, New Mexico | 24.26 | 616.2 | 30.40 | 772.1 | 49 | 9.4 | 30 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.18 | 766.6 | 30.22 | 767.6 | 66 | 18.9 | 95 | SW | 6 | 2.7 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| Springfield, Massachusetts | 29.89 | 759.2 | 30.02 | 762.5 | 40 | 8.9 | 70 | N | 6 | 2.7 | ..... | ..... | 10ks | ..... | N | 0.01 | 0.3 | Cloudy | |
| Stockton, Texas | 26.86 | 682.2 | 29.86 | 758.4 | 59 | 15.0 | 43 | SW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.04 | 763.0 | 30.09 | 764.3 | 41 | 5 0 | 82 | NE | 13 | 5.8 | ..... | ..... | 10s | ..... | NE | 0.07 | 1.8 | Cloudy | |
| Toledo, Ohio | 29.28 | 743.7 | 29.94 | 760.5 | 64 | 17.8 | 78 | SW | 10 | 4.5 | ..... | 5cs | 2s | Calm | Calm | 0.01 | 0.3 | Cloudy | |
| Tucson, Arizona | 27.47 | 697.7 | 30.02 | 762.5 | 54 | 12.2 | 31 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.79 | 756.7 | 30.20 | 769.4 | 44.0 | 6.7 | 76 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 37 | 2.8 | 80 | S | ..... | ..... | 2 | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Uvalde, Texas | 29.02 | 737.1 | 29.83 | 757.7 | 65 | 18 3 | 73 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.64 | 752.8 | 29.89 | 759.2 | 65 | 18.3 | 97 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0.76 | 19.3 | Cloudy | |
| Virginia City, Montana | 24.25 | 615.9 | 29.73 | 755.1 | 29 | — 1.7 | 45 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.56 | 750.8 | 29.92 | 760.0 | 58.6 | 14.7 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 29.91 | 759.7 | 30.02 | 762.5 | 64 | 17.8 | 68 | SW | 4 | 1.8 | ..... | 10c;hzo | 8mo | Calm | ..... | 0 | 0 | Smoky | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 56 | 13.3 | 35 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.11 | 764.8 | 30.18 | 766.6 | 66 | 18.9 | 84 | SW | 7 | 3.1 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.66 | 651.8 | 30.02 | 762.5 | 35 | 1.7 | 36 | E | 9 | 4.0 | ..... | 0 | 2s | ..... | W | 0 | 0 | Fair | |
| Wood's Holl, Mass | 29.94 | 760.5 | 29.98 | 761.5 | 44 | 6.7 | 84 | E | 10 | 4.5 | ..... | ..... | 10s | ..... | SE | 0.06 | 1.5 | Cloudy | |
| Yankton, Dakota | 28.51 | 724.1 | 29.75 | 755.6 | 58 | 14.4 | 58 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yuma, Arizona | 29.67 | 753.6 | 29.83 | 757.7 | 64 | 17.8 | 39 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.83 | 719.6 | 29.71 | 754.6 | 55 | 12 8 | 93 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 30.01 | 762.2 | 30.06 | 763.5 | 74 | 23.3 | 63 | SE | 2.4 | 1.1 | ..... | 8ck | 0 | W | ..... | 0 | 0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.25 | 641.3 | ..... | ..... | 64.2 | 17.9 | 89 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | 0.23 | 5.8 | ..... | Thomas Herran. |
| Navassa, W. I | 29.96 | 761.0 | 30.04 | 763.0 | 77 | 25.0 | ..... | NE | 7.1 | 3.2 | ..... | ..... | ..... | ..... | ..... | Blank | Blank | Light rain | W. H. W. Jones. |
| Paramaribo, D. Guiana, S.A | 30.00 | 762.0 | 30.00 | 762.0 | 77 | 25.0 | 91 | E | ..... | ..... | 3 | ..... | 8ks | ..... | ..... | 0 | 0 | Cloudy | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | 29.89 | 759.2 | 29.93 | 760.2 | 28.5 | — 1.9 | 94 | E | 6 | 2.7 | ..... | 2c | 0 | NE | ..... | 0 | 0 | Fair | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 626.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,888.2 ft., or 866.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,500 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,886 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,385.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.95 | 760.7 | 53 | 11.7 | 49 | 9.4 | 93 | WSW | 13 | 5.8 | ..... | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 30.15 | 765.8 | 70 | 21.1 | 70 | 21.1 | 90 | SE | 20 | 8.9 | ..... | ..... | 10 | ..... | SE | 0.79 | 20.1 | ..... | ..... | Threatening | |
| Navy Yard, Portsmouth, N.H | 30.08 | 764.0 | 60 | 15.6 | 38 | 3.3 | 46 | NE | 2 | 0.9 | ..... | ..... | 10 | ..... | ..... | 0.3 | 8. | ..... | ..... | Overcast..... | |
| Naval Hospital, Yokohama, Japan.....* | 30.04‡ | 763.0‡ | ..... | ..... | 52 | 11.1 | 66 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Adams, Panama .....* | 29.95 | 760.7 | 79 | 26.1 | 78 | 25.6 | 95 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.46 | 11.7 | ..... | ..... | Clear..... | |
| Alaska, N. 51° 32′, W. 127° 56′..... | 30.10‡ | 764.5‡ | ..... | ..... | 39 | 3.9 | 90 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Alliance, Palermo, Sicily..... | 29.98‡ | 761.5‡ | ..... | ..... | 67 | 19.4 | 89 | N | ..... | ..... | 2 | ..... | 3 | ..... | N | ..... | ..... | ..... | ..... | Raining..... | |
| Ashuelot, Hong-Kong, China. ...*. | 30.06‡ | 763.5‡ | ..... | ..... | 70 | 21.1 | 70 | E | ..... | ..... | 3 | ..... | 10 | ..... | W | ..... | ..... | Smooth | ..... | Pleasant..... | |
| Canonicus, New Orleans, La.....*. | 29.94 | 760.5 | 48 | 8.9 | 64 | 17.8 | 79 | SE | ..... | ..... | 2 | ..... | 10† | ..... | SE | ..... | ..... | ..... | ..... | Hazy..... | |
| Colorado, New York, N. Y..... | 29.93 | 760.2 | 53 | 11.7 | 54 | 12.2 | 80 | Calm | 0 | 0 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Fair..... | |
| Constitution N. 24° 21′, W. 34° 27′. ..... | 30.17‡ | 766.3‡ | ..... | ..... | 73 | 22.8 | 85 | NE | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Foggy ..... | |
| Despatch, Genoa, Italy..... | 29.80‡ | 756.9‡ | ..... | ..... | 64 | 17.8 | 78 | SSE | ..... | ..... | 2 | ..... | 5 | ..... | SE | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Essex, Montevideo, Uruguay.*. | 29.95 | 760.7 | 67 | 19.4 | 65 | 18.3 | ..... | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Fair..... | |
| Franklin, Norfolk, Va.....*. | 30.20 | 767.1 | 68 | 20.0 | 66 | 18.9 | 84 | SW | 8.4 | 3.8 | ..... | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Clear..... | |
| Gettysburg, Genoa, Italy .....*. | 29.72‡ | 754.9‡ | ..... | ..... | 61 | 16.1 | 82 | SE | ..... | ..... | 4 | ..... | 8 | ..... | SE | 0 | 0 | ..... | ..... | Cloudy..... | |
| Hartford, Buenos Ayres, S. A.....*. | 29.95 | 760.7 | 69 | 20.6 | 73 | 22.8 | 72 | NW | ..... | ..... | 2 | ..... | 8 | ..... | N | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Michigan, Erie, Pa.....† | 29.92‡ | 760.0‡ | ..... | ..... | 49 | 9.4 | 78 | W | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Fair..... | |
| Monocacy. Shanghai, China.....*. | 30.18‡ | 766.6‡ | ..... | ..... | 54 | 12.2 | 87 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | SSE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongahela N. 35° 06′, E. 140° 02′....*. | 30.07‡ | 763.8‡ | ..... | ..... | 59 | 15.0 | 88 | W | ..... | ..... | 1 | ..... | cs | ..... | ..... | Light | Light | ..... | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C.....*. | 30.28 | 769.1 | 72 | 22.2 | 64 | 17.8 | ?? | SSE | 10 | 4.5 | ..... | ..... | 10 | ..... | SSE | 0 | 0 | ..... | ..... | Misty..... | |
| Onward, Callao, Peru.....†*. | 30.06 | 763.5 | ..... | ..... | 63 | 17.2 | 94 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | NW | Cloudy ..... | |
| Palos, Shanghai, China.....*. | 30.20 | 767.1 | 62 | 16.7 | 52 | 11.1 | 73 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy . ..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 65 | 18.3 | 89 | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Pensacola. Callao, Peru..... | 29.95‡ | 760.7‡ | ..... | ..... | 63 | 17.2 | 89 | WNW | 3 | 1.3 | ..... | ..... | 10. | ..... | ..... | 0 | 0 | Smooth | ..... | Foggy ..... | |
| Plymouth. Portsmouth, N. H..... | 30.07‡ | 763.8‡ | ..... | ..... | 41 | 5.0 | 83 | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Portsmouth, Hampton Roads, Va..... | 30.07‡ | 763.8‡ | ..... | ..... | 61 | 16.1 | 88 | SW | ..... | ..... | 3 | ..... | 5 | ..... | S | 0 | 0 | Slight | S;W | Fair..... | |
| Powhatan, Norfolk, Va..... | 30.03‡ | 762.8‡ | ..... | ..... | 66 | 18.9 | 79 | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Quinnebaug, Tunis, Africa ..... | 30.11‡ | 764.8‡ | ..... | ..... | 66 | 18.9 | 54 | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Ranger. Amoy, China.....*. | 30.09‡ | 764.3‡ | ..... | ..... | 66 | 18.9 | 64 | NNW | ..... | ..... | 3 | ..... | 5 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Richmond. N. 4° 54′, E. 99° 31′..... | 29.85‡ | 758.2‡ | ..... | ..... | 81 | 27.2 | 91 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | NE | 0 | 0 | Smooth | NE | Fair..... | |
| Rio Bravo, Brownsville, Texas..... | 29.93 | 760.2 | 70 | 21.1 | 69 | 20.6 | 100 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Santee, Annapolis, Md..... | 30.01‡ | 762.2‡ | ..... | ..... | 67 | 19.4 | 89 | W | ..... | ..... | 1 | ..... | 8 | ..... | W | 0 | 0 | ..... | ..... | Cloudy..... | |
| Saratoga, Horta Bay, Fayal, Azores. | 30.31‡ | 769.9‡ | ..... | ..... | 67 | 19.4 | 89 | SSW | ..... | ..... | 3 | ..... | 10 | ..... | SW | 0 | 0 | Mod'ate | E | D. clouds..... | |
| St. Louis, League Island, Pa..... | 29.93 | 760.2 | 65 | 18.3 | 56 | 13.3 | 87 | W | 3 | 1.3 | ..... | ..... | 8 | ..... | W | 0 | 0 | ..... | ..... | Misty..... | |
| Trenton Villafranca, France...*. | 29.79‡ | 756.7‡ | ..... | ..... | 75 | 23.9 | 81 | ESE | ..... | ..... | 1–2 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Tuscarora. Port Sacrificios, Mex...* | 29.87‡ | 758.7‡ | ..... | ..... | 74 | 23.3 | 81 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Long | S;W | Hazy..... | |
| Vandalia N. 19° 57′, W. 74° 02′... | 30.00‡ | 762.0‡ | ..... | ..... | 76 | 24.4 | 77 | ESE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Mod'ate | E | Clear..... | |
| Wabash, Boston, Mass..... | 30.07‡ | 763.8‡ | ..... | ..... | 41 | 5.0 | 83 | E | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Hazy..... | |
| Wyoming, Athens, Greece.....*. | 29.83‡ | 757.7‡ | ..... | ..... | 67 | 19.4 | 79 | SW | ..... | ..... | 1–2 | ..... | 8 | ..... | SW | ..... | ..... | Smooth | SW | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **CUNARD LINE MARINE SERIES.** Furnished by the co-operation of Ch. G. Francklyn, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Samaria, Capt. T. Roberts, N. 47° 43′, W. 35° 08′....† | | | 30.07 | 763.8 | 54 | 12.2 | | ENE | | | 2 | 8 | | NE | | Long | NE | Covered..... | M. C. Miles. |
| NOTE.—†Aneroid. | | | | | | | | | | | | | | | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | L. B. Walls. |
| §S. S. City of Tokio Capt. Maury Yokohama, Japan | | 30.22‡ | 767.6‡ | | | | SE | | | 4 | | 2s | | SW | 0 | Smooth | | Blue sky..... | |
| S. S. Colima. N. 34° 10′, W. 121° 10′...† | | 30.00‡ | 762.0‡ | 60 | 15.6 | | NW | | | 4 | | 7 | | NNW | 0 | Mod'ate | NW | Misty..... | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota, Capt. H. G. Morse | | | | | | | | | | | | | | | | | | | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Granada, Capt. Austin | | | | | | | | | | | | | | | | | | | F. W. Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, Sydney, N. S. W. | | 30.26‡ | 768.6‡ | | | | W | | | 1 | | 0 | | | | | | Fine..... | R. C. Ghest, 1st Officer. |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office. §The date of the S. S. City of Tokio is uncertain, and may be in error one day. | | | | | | | | | | | | | | | | | | | |
| **WHITE STAR LINE MARINE SERIES.** Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |
| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, Capt. L. Meyer. N. 33° 23′, W. 156° 56′ | | 30.27‡ | 768.8‡ | 54 | 12.2 | 80 | NNE | | | 6 | | 0s | | | 0 | Mod'ate | NNE | Squally..... | D. A. Joyce. |
| S. S. Gaelic, N. 38° 37′, W. 127° 32′...* | | 30.18‡ | 766.6‡ | 50 | 10.0 | | NNE | | | 5 | | k | | N | 0 | | | Overcast..... | Capt. W. H. Kidley. |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to distin 12; no ction between upper and lower clouds. The position given for the S. S. Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |
| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** Furnished by the co-operation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 46° 06′, W. 31° 40′ | | 30.23‡ | 767.8‡ | | | | ESE | | | 1 | | 2 | | | | Rough | NW | Fair | Capt. G. Meyer. |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Corrections for temperature instrumental error and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |

## UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

| NAMES OF VESSELS. | True course toward. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | L'w'r | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Liverpool, Eng. | ..... | 29.67‡ | 753.6‡ | 53 | 11.7 | ..... | SE | ..... | ..... | 2 | ..... | 7 | ..... | SE | 0 | ..... | ..... | Cloudy..... | Captain Sargent. |
| S. S. Ohio | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. H. Dodge. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for the Pennsylvania, the cloud-direction as toward instead of from; sea-swell in general terms, as published; rain-fall for the Indiana and Ohio in general terms. ‡Corrections for temperature, instrumental error and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Randle. |
| S. S. Switzerland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jackson. |
| S. S. Vaderland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Nichols. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

**ALLAN LINE MARINE SERIES.**

Furnished by the co-operation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| S. S. Hibernian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| S. S. Peruvian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Richardson. J. Powell, 4th Officer. |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Anéroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the co-operation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Off Cape Cod Light, Mass. | ..... | 30.02‡ | 762.6‡ | 39 | 3.9 | 91 | SE | 12 | 5.4 | .. ... | ..... | 10s | ..... | SE | 0.02 in. or 0.5 mm. | Rough | SE | Overcast..... | Capt. James Jorgensen. |
| Brigantine "George of Halifax" | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Willard N. Pratt. |
| Schooner Harry and Fred, N. 31° 32,′ W. 69 ° 23′ | ..... | 30.10‡ | 764.5‡ | ..... | ..... | ..... | W | 10 | 4.5 | ..... | ..... | 2 | ..... | ..... | ..... | Long | NE | Hazy ..... | Capt. George Gardner. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Corrections for temperature, instrumental error and elevation applied at this office.

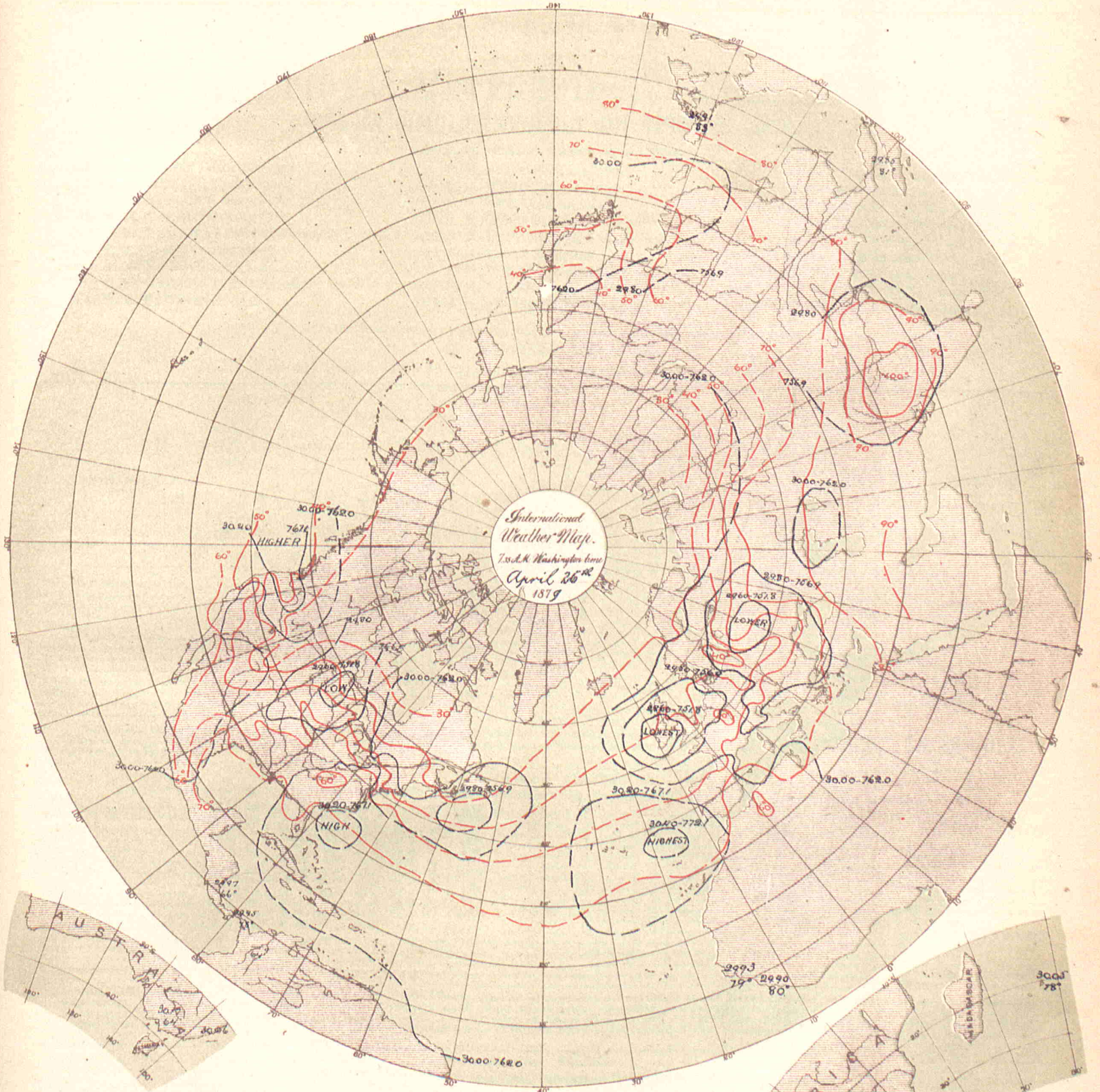
Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively by the letters c, k, s, n, d, f, p, hz., fg. and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 330 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 27, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Morocco | ..... | ..... | 30.06 | 763.5 | 71.1 | 21.7 | 70 | WNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Kesxuche. |
| Nemours | ..... | ..... | 29.89 | 759.2 | 74.1 | 23.4 | 50 | W | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Tourlière. |
| Algiers | ..... | ..... | 29.91 | 759.6 | 73.0 | 22.8 | 50 | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Foufrede. |
| La Calle | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Jacques. |
| Tunis | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Gau. |
| Sfax | ..... | ..... | 30.05 | 763.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Saida | ..... | ..... | 30.09 | 763.6 | 74.8 | 23.8 | 9 | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Herbin. |
| Tebessa | ..... | ..... | 30.02 | 762.5 | 72.3 | 22.4 | 41 | SW | ..... | ..... | 7 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Watrin. |
| Geriville | ..... | ..... | 30.02 | 762.6 | 59.0 | 15.0 | 21 | NNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Brugniaux. |
| Laghouat | ..... | ..... | 30.04 | 762.9 | 81.7 | 27.6 | 22 | S | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bertrand. |
| Biskra | ..... | ..... | 29.98 | 761.5 | 82.8 | 28.2 | 23 | SE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the amount of cloudiness is given by the scale 0-4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

## AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.19 | 741.4 | 29.74 | 755.4 | 48.9 | 9.4 | 92 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.378 | 9.6 | ..... | Prof. Ivan Stoxir. |
| Cracow, I. R. Observatory | 28.93 | 734.8 | 29.70 | 754.3 | 50.4 | 10.2 | 53 | WNW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski. |
| Eperies | 28.78 | 731.1 | 29.65 | 753.0 | 56.7 | 13.7 | 63 | S | ..... | .... | 1 | ..... | 10s | ..... | N | 0.028 | 0.70 | ..... | Julius Mikolik. |
| Gratz | 28.46 | 722.8 | 29.69 | 754.0 | 59.7 | 15.4 | 54 | SE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.35 | 720.2 | 29.76 | 755.8 | 58.6 | 14.8 | 43 | NW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. A. Gottschling. |
| Kremsmünster | 28.31 | 719.1 | 29.63 | 752.5 | 57.2 | 14.0 | 64 | NNE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner. |
| Lemberg | 28.68 | 728.4 | 29.66 | 753.3 | 52.5 | 11.4 | 63 | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.134 | 3.4 | ..... | Dr. T. Stanecki. |
| Pola | 29.64 | 752.8 | 29.75 | 755.6 | 62.8 | 17.1 | 69 | S | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0.827 | 21.0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.32 | 744.7 | 29.78 | 756.4 | 59.4 | 15.2 | 52 | SW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0.008 | 0.2 | ..... | Julius Osics, S. J. |
| Szegedin | 29.47 | 748.5 | 29.74 | 755.4 | 67.6 | 19.8 | 66 | S | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0.020 | 0.50 | ..... | Karl Stancel. |
| Trieste | 29.67 | 753.5 | 29.77 | 756.1 | 55.8 | 13.2 | 94 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 1.024 | 26.0 | Raining | P. Busin. |
| Vienna | 28.99 | 736.3 | 29.69 | 754.1 | 59.0 | 15.0 | 52 | S | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

## BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. M. Passau. |
| Brussels | 29.43 | 747.5 | 29.63 | 752.5 | 46.8 | 12.8 | 60 | ESE | ..... | ..... | 2 | ..... | 10 | ..... | E | 0 | 0 | Light rain | Royal Observatory. |
| Furnes | 29.61 | 752.1 | 29.63 | 752.7 | 59.5 | 15.3 | 66 | NW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0.402 | 10.2 | Light rain | M. E. de Cae. |
| Maeseyck | 29.54 | 750.2 | 29.66 | 753.4 | 53.4 | 11.9 | 76 | S | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.016 | 0.4 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

**Entered at the Post Office at Washington, D. C., as Second-Class Matter.**

## BRITISH SERIES.

Furnished by the cooperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Upper 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.83 | 757.7 | 29.93 | 760.2 | 40.4 | 4.7 | ..... | NE | 21 | 9.4 | ..... | ..... | 10 | ..... | ..... | 0.330 | 8.38 | Raining..... | W. Boswell. |
| Ardrossan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.85 | 758.2 | 50.9 | 10.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 29.74 | 755.4 | 50.8 | 10.4 | ..... | ENE | 9 | 4.0 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 29.72 | 754.9 | 50.7 | 10.4 | ..... | ENE | 12 | 5.4 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Thomas Mackereth. |
| Bradford, Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.32 | 8.1 | ..... | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.96 | 761.0 | 30.00 | 762.0 | 85 | 29.4 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 29.68 | 753.9 | 59.0 | 15.0 | ..... | NE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | Blank | Blank | D. clouds.... | H. Todd. [C. |
| Cardington | ..... | ..... | 29.67 | 753.6 | 57.0 | 13.9 | ..... | E | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | John McLaren. |
| Chatham, School M. E. | 29.53 | 750.0 | 29.66 | 753.4 | 54.1 | 12.3 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.16 | 715.3 | 29.63 | 752.6 | 47.0 | 8.3 | ..... | NE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 29.79 | 756.7 | 29.83 | 757.7 | 48 | 8.9 | ..... | NE | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.61 | 752.1 | 29.63 | 752.6 | 53 | 11.7 | ..... | NE | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | ⅗ clouded... | J. Costello. |
| Falmouth, Observatory | 29.49 | 749.0 | 29.72 | 754.9 | 47.5 | 8.6 | ..... | SSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | The Staff. |
| Fort Napier, (Natal) | 27.59 | 700.8 | 29.90 | 759.4 | 85.0 | 29.4 | ..... | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.69 | 754.1 | 29.90 | 759.4 | 88 | 31.1 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's college | ..... | ..... | ..... | ..... | 56 | 13.3 | ..... | ENE | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | Gloomy ..... | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 30.06 | 763.5 | 30.11 | 764.8 | 64.8 | 18.2 | ..... | W | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 29.63 | 752.6 | 29.84 | 757.9 | 45.0 | 7.2 | ..... | NE | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. [C. |
| Great Yarmouth | 29.70 | 754.4 | 29.71 | 754.6 | 49 | 9.4 | ..... | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.48 | 748.8 | 29.65 | 753.1 | 51.6 | 10.9 | ..... | ENE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | Raining..... | The staff, for G.B. Airy. |
| Guernsey | 29.40 | 746.7 | 29.62 | 752.3 | 52 | 11.1 | ..... | NNE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S.E. Hoskins, F.R.S. |
| Helston | 29.85 | 758.2 | 29.97 | 761.2 | 53 | 11.7 | ..... | NE | ..... | ..... | 2 | ..... | 8ck | ..... | ..... | 0.3 | 8. | Raining..... | M. P. Moyle. |
| Holyhead | 29.75 | 755.6 | 29.78 | 756.4 | 48 | 8.9 | ..... | NNE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | John Tilston. |
| Jersey | 29.33 | 745.0 | 29.62 | 752.3 | 53.0 | 11.7 | ..... | NNE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | J. Fisher. |
| Kew, Observatory | 29.63 | 752.6 | 29.67 | 753.6 | 50.8 | 10.4 | ..... | E | 8 | 3.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | The Meteorological Of. |
| Leicester, Museum | 29.50 | 749.3 | 29.76 | 755.9 | 51.0 | 10.6 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranean | 30.02 | 762.5 | 30.09 | 764.3 | 69 | 20.6 | ..... | SW | ..... | ..... | 2 | ..... | 8ck | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 29.86 | 758.4 | 29.95 | 760.7 | 43 | 6.1 | ..... | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.10 | 764.5 | 76.0 | 25.6 | ..... | E | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.57 | 751.1 | 29.76 | 755.9 | 46.8 | 8.2 | ..... | N | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.20 | 741.7 | 29.72 | 754.9 | 49.0 | 9.4 | ..... | NNE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.68 | 753.9 | 55 | 12.8 | ..... | NW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | H. E. Bellamy. |
| Plymouth | 29.59 | 751.6 | 29.66 | 753.4 | 54.0 | 12.2 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Merrifield. |
| Roche's Point | 29.72 | 754.9 | 29.80 | 756.9 | 57 | 13.9 | ..... | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Wm. Kennedy, |
| Saint Ann's Head | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 44 | 6.7 | ..... | NE | 28 | 12.5 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Rev C. Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.55 | 758.2 | 29.92 | 760.0 | 59.4 | 15.2 | ..... | SW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | Blank | Blank | D. clouds..... | W. H. Lyne. |
| Sheffield | 29.49 | 749.0 | 29.78 | 756.4 | 47.6 | 8.6 | ..... | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast ..... | W. F. Cooper. |
| Silloth Rectory | 29.86 | 758.4 | 29.89 | 759.2 | 53.8 | 12.1 | 64 | SE | ..... | ..... | 5 | ..... | 6 | ..... | ..... | 0 | 0 | D. clouds..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.36 | 745.7 | 29.76 | 755.9 | 53.2 | 11.8 | ..... | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. S. J. Perry. |
| Strathfield, Turgiss | 29.44 | 747.8 | 29.65 | 753.1 | 57.4 | 14.1 | ..... | NE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | C. H. Griffith, F. M. S. |
| Truro, Royal Institution | 29.66 | 753.4 | 29.69 | 754.1 | 55 | 12.8 | ..... | NE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | 29.79 | 756.7 | 29.82 | 757.4 | 52.7 | 11.5 | ..... | NNW | 17 | 7.6 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | The Meteorological Of. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.04 | 763.0 | 30.08 | 764.0 | 75.5 | 24.2 | 43 | SSE | 12 | 5.4 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Fine..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.02 | 762.5 | 56 | 13.3 | 80 | N | ..... | ..... | 1 | ..... | 10k | ..... | ..... | 0.03 | 0.8 | Cloudy..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.88 | 758.9 | 41.1 | 5.1 | ..... | NE | ..... | ..... | 3 | ..... | 10s | ..... | ..... | 0.13 | 3.3 | Foggy ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.87 | 758.7 | 30.06 | 763.6 | 78.0 | 25.6 | 65 | ESE | 11.0 | 4.9 | ..... | ..... | 2 | ..... | ESE | 0 | 0 | Fine..... | C. Meldrum. |
| Melbourne, Observatory | 29.90 | 759.4 | 29.99 | 761.7 | 64.3 | 17.9 | 63 | N | 9 | 4.0 | ..... | ..... | 8 | WNW | ..... | 0.05 | 1.3 | Dull..... | R. L. J. Ellery. |
| MonachLt-house, (Hebrides) | ..... | ..... | 29.97 | 761.2 | 44 | 6.7 | ..... | ENE | ..... | ..... | 4 | 0 | 0 | ..... | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.02 | 762.5 | 42 | 5.6 | ..... | ENE | ..... | ..... | 4 | 2 | 4 | Calm | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

## BRITISH MARINE SERIES.

### VESSELS.

| | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Upper 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 42', E. 29° 25' | ..... | ..... | 29.93‡ | 760.2‡ | 67 | 19.4 | ..... | SW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle-Isle | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. J. Brown. |
| Ship British Commodore, N. 37° 50', W. 68° 05' | ..... | ..... | 30.22 | 767.6 | 60 | 15.6 | ..... | ENE | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 4 | E | D. clouds..... | Capt. J. W. Thorne. |
| ——— City of Agra | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have generally been carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | Millimeters. | Reduced to sea-level. Inches. | Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | Velocity Miles per hour. | Meters per second. | Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | Low'r 0—10. | Direction. Upper. From— | Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | Millimeters. | WEATHER. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 20.24 | 666.5 | 29.96 | 761.0 | 68.4 | 20.2 | 93 | Calm | ..... | ..... | 0 | 9ck | ..... | ..... | ..... | 0.012 | 0.3 | ..... | Federico Maison |

NOTE.—For St. Jose the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches for an altitude of 1,145 meters, or 3,756.6 feet; the distinction between the upper and lower clouds is not always made; the rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.72 | 755.0 | 29.77 | 756.2 | 46.2 | 7.9 | 82 | N | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 29.78 | 756.3 | 29.80 | 756.8 | 52.3 | 11.3 | 87 | E | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 30.11 | 764.8 | 30.15 | 765.9 | 35.8 | 2.1 | 78 | S | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 30.19 | 766.9 | 30.23 | 767.8 | 42.8 | 6.0 | 85 | NNE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.68 | 753.8 | 29.85 | 758.1 | 49.6 | 9.8 | 82 | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.02 | 737.2 | 29.58 | 751.2 | 51.8 | 11 | 84 | NE | ..... | ..... | 1 | ..... | 8 | NE | NE | 0.110 | 2.8 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 29.53 | 750.0 | 29.64 | 752.8 | 58.6 | 14.8 | 83 | ESE | ..... | ..... | 1 | ..... | 6 | ..... | NE | 0.197 | 5.0 | Cloudy | Bonvallet, Director. |
| Avignon, Normal School | 29.65 | 753.1 | 29.73 | 755.1 | 57.0 | 13.9 | 69 | S | ..... | ..... | 1 | ..... | 5 | ..... | W | 0.181 | 4.6 | Cloudy | Giraud, Director |
| Bar-sur-Seine | 29.04 | 737.6 | 29.58 | 751.4 | 55.6 | 13.1 | 58 | S | ..... | ..... | 1 | ..... | 8ckn | ..... | SSE | 0.020 | 0.5 | Very cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.31 | 744.5 | 29.57 | 751.1 | 57.4 | 14.1 | 58 | ESE | ..... | ..... | ..... | ..... | 8 | ..... | SE | 0.04 | 1. | Very cloudy | Frere Eugene Marie, Dr |
| Besançon, Normal School | 28.75 | 730.3 | 29.67 | 753.7 | 54.5 | 12.5 | 63 | S | ..... | ..... | 2 | ..... | 5 | ..... | SW | 0.213 | 5.4 | Cloudy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.80 | 731.5 | 29.71 | 754.7 | 54.1 | 12.3 | 70 | S | ..... | ..... | 4 | ..... | kn | SW | S | 0.083 | 2.1 | ..... | Marlot, Director |
| Bourges, Normal School | 29.01 | 736.9 | 29.56 | 750.8 | 50.0 | 10 | 86 | SSW | ..... | ..... | 3 | ..... | 10sn | NE | SSW | 0.091 | 2.3 | Raining | A. Waquet, Director |
| Brest, Naval Observatory | 29.39 | 746.4 | 29.63 | 752.5 | 54.3 | 12.4 | 72 | N | ..... | ..... | 3 | ..... | 9 | ..... | N | 0.079 | 2.00 | ..... | De Rermaree, Director |
| Carcassonne, Normal School | 29.33 | 745.0 | 29.74 | 755.3 | 59.9 | 15.5 | 53 | WNW | ..... | ..... | 3 | ..... | 5 | ..... | WNW | 0.08 | 2. | Almost cl'dy | September, Director. |
| Caen, Normal School | 29.47 | 748.6 | 29.61 | 749.5 | 51.8 | 11 | 75 | N | ..... | ..... | 2 | ..... | 10 | ..... | ESE | 0.031 | 0.8 | Covered | Lair, Director. |
| Chartres, Normal School | 28.89 | 733.9 | 29.46 | 748.2 | 51.8 | 11 | 82 | E | ..... | ..... | 2 | ..... | 10 | ..... | NE | 0.16 | 4. | Light rain | Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.28 | 743.7 | 29.60 | 751.8 | 52.5 | 11.4 | 71 | SSE | ..... | ..... | 2 | ..... | 5 | SSE | SSE | 0 | 0 | Cloudy | Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.20 | 716.2 | 29.52 | 749.9 | 57.2 | 14.0 | 47 | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.055 | 1.4 | ..... | Alluard, Director. |
| Commercy, Normal School | 28.79 | 731.3 | 29.65 | 753.0 | 50.2 | 10.1 | 95 | NW | ..... | ..... | 3 | ..... | 10 | ..... | NW | 0.094 | 2.4 | Raining | Dr. Coulet, Director. |
| Commune de Grèasque* | 28.62 | 726.8 | 29.76 | 755.8 | 52.0 | 11.1 | 77 | N | ..... | ..... | 1 | ..... | 8 | ..... | N | 0.04 | 1. | ¾ covered | L. Kina, Director. |
| Grenoble, Normal School | 28.96 | 735.6 | 29.73 | 755.1 | 53.2 | 11.8 | 67 | WSW | ..... | ..... | 2 | ..... | 8kn | ..... | SW | 0.063 | 1.60 | Very cloudy | Ablard, Director |
| La Roche-sur-Yon, N. School | 29.28 | 743.8 | 29.49 | 749.1 | 52.2 | 11.2 | 84 | NW | ..... | ..... | 1 | ..... | 8 | ..... | NW | 0.59 | 15. | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.23 | 742.4 | 29.63 | 750.1 | 51.3 | 10.7 | 77 | NW | ..... | ..... | 3 | ..... | 6 | ..... | SW | 0.457 | 11.6 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.72 | 729.5 | 29.63 | 752.7 | 55.2 | 12.9 | 55 | S | ..... | ..... | 4 | ..... | 5cn | ..... | W | 0.307 | 7.80 | Cloudy | A. Baudry, Director. |
| Lorient, Naval Observatory | 29.53 | 750.0 | 29.63 | 752.5 | 53.6 | 12.0 | 76 | NNW | ..... | ..... | 2 | ..... | ..... | ..... | N | 0.402 | 10.2 | ..... | Lt T. Carré, Director |
| MÂcon. Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Galzin, Director. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mirecourt, Normal School | 28.58 | 726.0 | 29.61 | 752.0 | 53.8 | 12.1 | 72 | SW | ..... | ..... | 3 | ..... | 5 | ..... | NE | 0 | 0 | Cloudy | Barbier, Director. |
| Nismes, Normal School | 29.52 | 749.9 | 29.73 | 755.1 | 58.6 | 14.8 | 72 | SW | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.266 | 6.75 | Covered | Boyer, Director. |
| Privas, Normal School | 28.67 | 728.1 | 29.73 | 755.1 | 50.7 | 10.4 | 74 | S | ..... | ..... | 1 | ..... | ..... | SW | S | 0 | 0 | ..... | Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.73 | 628.2 | ..... | ..... | 32.0 | 0.0 | 100 | W | ..... | ..... | 8 | ..... | ..... | ..... | ..... | 0.177 | 4.5 | Foggy | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.52 | 749.8 | 29.55 | 750.6 | 58.1 | 14.5 | 69 | W | ..... | ..... | 3 | ..... | 5 | WNW | WNW | 0.16 | 4. | ⅛ covered | Lt. E. Decante, Director. |
| Rouen, Normal School | 29.50 | 749.4 | 29.59 | 751.6 | 55.0 | 12.8 | 63 | E | ..... | ..... | 2 | ..... | 10 | ..... | E | 0.047 | 1.2 | Covered | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.55 | 750.5 | 29.58 | 751.3 | 54.7 | 12.6 | 90 | N | ..... | ..... | 2 | ..... | 1 | NNE | NNE | 0.269 | 9.37 | Clear | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.42 | 747.2 | 29.58 | 751.4 | 54.1 | 12.3 | 76 | SE | ..... | ..... | 1 | ..... | ..... | ..... | SE | 0.358 | 9.1 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.73 | 729.7 | 29.33 | 757.6 | 44.6 | 7 | 71 | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.39 | 10. | Raining | T. Huguet, Director. |
| Toulouse, Observatory | 29.09 | 737.8 | 29.76 | 756.0 | 52.5 | 11.4 | 90 | WSW | ..... | ..... | 6 | ..... | 9 | ..... | ..... | 0.425 | 10.8 | Rainy | Mercadier Julier. |
| Versailles Observatory | 29.08 | 738.5 | 29.57 | 751.0 | 54.7 | 12.6 | 66 | SE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.056 | 1.42 | ..... | Dr. A. Berigny, Director |
| Villefranche-sur-Saone, N.S. | 28.92 | 734.6 | 29.58 | 751.4 | 56.1 | 13.4 | 69 | SE | ..... | ..... | 2 | ..... | 8 | SSW | NE | 0.04 | 1. | Very cloudy | Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.85 | 758.1 | 29.87 | 758.8 | 80.6 | 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.39 | 10. | ..... | L'Abbé Marchésai. |
| Lyons Obs'y, (Park Station) | 29.02 | 737.0 | 29.63 | 752.5 | 54.7 | 12.6 | 66 | SSW | ..... | ..... | 4 | ..... | 7 | ..... | SW | 0.051 | 1.30 | Covered | Mr. Jays. |
| Mont-Louis | 24.54 | 623.4 | 29.86 | 758.4 | 44.6 | 7.0 | 60 | SW | 18.6 | 8.3 | ..... | ..... | 7 | ..... | N | 0.118 | 3.0 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.74 | 755.5 | 57.2 | 14.0 | 60 | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Clear | Dr. A. Niepce, Jr. |
| Paris, Montsouris Obs'y | 29.29 | 744.0 | ..... | ..... | 52.9 | 11.6 | 77 | ESE | ..... | ..... | 3 | ..... | 10 | ..... | SE | 0.165 | 4.2 | ..... | Marié Davy, Director. |
| Perpignan | 29.64 | 752.9 | 29.75 | 755.6 | 59.0 | 15.0 | 47 | E | 5.6 | 2.5 | ..... | ..... | 7 | ..... | NW | 0.39 | 1.0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.20 | 564.0 | ..... | ..... | 29.8 | — 1.2 | ..... | NW | ..... | ..... | 6–8 | ..... | 10 | ..... | ..... | 0.083 | 2.11 | Snowy | Gen'l de Nansouty. |
| Tours | 29.34 | 745.1 | 29.58 | 750.1 | 54.0 | 12.2 | 76 | S | ..... | ..... | 1 | ..... | 10 | ..... | SSW | 0.173 | 4.4 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 29.04 | 760.6 | 29.97 | 761.2 | 51.3 | 10.7 | 93 | SE | 10.5 | 4.7 | ..... | ..... | 10 | ..... | ..... | 0.142 | 3.6 | Covered | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand, Nice and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a.m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:58 p.m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,588.40 m., or 5,204.8 ft.; Pic du Midi—(Summit) 2,877 m., or 9,436.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135.0 millimeters, or 5.315 inches has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–1 | Clouds. Amount. Up'er (0–10) | Clouds. Amount. Low'r (0–10) | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.82 | 732.0 | 29.65 | 753.2 | 56.3 | 13.5 | 48 | S | | | 6 | | 2 | SW | | 0.039 | 1.0 | | Prof. Dr. Hoh. |
| Berlin | 29.56 | 750.7 | 29.72 | 755.0 | 56.5 | 13.6 | 36 | NE | | | 1 | | 6 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.20 | 741.7 | 29.72 | 755.0 | 49.3 | 9.6 | 47 | WNW | | | 3 | | 10 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.22 | 742.2 | 29.64 | 752.8 | 54.7 | 12.6 | 62 | E | | | 2 | | 10 | E | | 0.083 | 2.1 | Raining | Albert Senz. |
| Cassel | 29.12 | 739.7 | 29.72 | 755.0 | 54.3 | 12.4 | 75 | N | | | 3 | | 8 | NNE | | 0.291 | 0.74 | Raining | Dr. H. Möhl. |
| Crefeld | 29.50 | 749.2 | 29.66 | 753.3 | 58.1 | 14.5 | 50 | E | | | 1 | | 8 | | | 0.04 | 1. | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.30 | 744.1 | 29.66 | 753.3 | 58.1 | 14.5 | | NE | | | 1 | | 6 | | | 0.205 | 5.2 | | Physical Society. |
| Freienwalde on the Oder | 29.70 | 754.3 | 29.74 | 755.3 | 55.6 | 13.1 | 63 | NNW | | | 3 | | 10cs | NE | | 0 | 0 | | Assmann., M. D. |
| Friedrichshafen | 28.21 | 716.6 | 29.63 | 752.5 | 54.7 | 12.6 | 62 | SW | | | 1 | | 2 | W | | 0.650 | 16.5 | | M. Wilhelm. |
| Hamburg | 29.68 | 753.8 | 29.75 | 755.6 | 55.9 | 13.3 | 34 | E | | | 3 | 3cs | | SE | | 0 | 0 | Fair | Captain F. Hegeman. |
| Kiel | 29.77 | 756.1 | 29.78 | 756.5 | 50.2 | 10.1 | 48 | NE | | | 3 | | 5 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.41 | 747.1 | 29.50 | 749.2 | 41.0 | 5.0 | 92 | NW | | | 3 | | 10 | | | 0.492 | 12.5 | | Prof. E Luther. |
| Köslin | | | 29.66 | 753.4 | 33.8 | 1.0 | | N | | | 4 | | 6 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.29 | 743.8 | 29.70 | 754.3 | 57.2 | 14.0 | 42 | NE | | | 1 | | 5 | | | 0 | 0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.44 | 747.4 | 29.49 | 749.0 | 40.3 | 4.6 | 96 | NNE | | | 2 | | 10n | | | | | Light rain | Skalweit. |
| Neufahrwasser | 29.56 | 750.8 | 29.57 | 751.2 | 37.9 | 3.3 | 95 | N | | | 4 | | 10 | | | 0.417 | 10.6 | Raining | A. Lothes. |
| Posen | 29.43 | 747.8 | 29.72 | 754.9 | 38.5 | 3.6 | 100 | NW | | | 6 | | 10 | | | 0.453 | 11.5 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.10 | 739.1 | 29.64 | 752.8 | 56.8 | 13.8 | 58 | NNE | | | 1 | | 9 | | | 0.191 | 4.85 | | Imp. University Observatory. |
| Stuttgart | 28.69 | 728.8 | 29.63 | 752.6 | 50.9 | 10.5 | 71 | SE | | | 1 | | 10 | | | 0.008 | 0.2 | Raining | Prof. Schoder. |
| Treves (Trier) | 29.09 | 738.8 | 29.60 | 751.9 | 58.1 | 14.5 | 55 | SW | | | 4 | | 10 | | | 0.004 | 0.09 | | Prof. Flesch. |
| Weissenburg (Bavaria) | 28.15 | 715.1 | 29.63 | 752.7 | 55.2 | 12.9 | 47 | N | 1.1 | 0.5 | | | 7ck | | N | 0.098 | 2.5 | | Dr. Van Bebber |
| Wustrow, Naval School | 29.75 | 755.6 | 29.77 | 756.2 | 42.8 | 6.0 | 72 | NNE | | | 2 | | 4s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at; and the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m., Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.68 | 753.8 | 30.06 | 763.5 | 68.5 | 20.3 | | SW | | | 2.0 | | | | | | | Clear | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.74 | 755.4 | 29.79 | 756.7 | 85.0 | 29.4 | 66 | SW | | | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | | | | | 102.3 | 39.1 | 7 | WSW | 7.6 | 3.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.75 | 755.6 | 29.79 | 756.6 | 84.4 | 29.1 | 70 | NW | 20 | 8.9 | | | 1 | WNW | | 0 | 0 | D. clouds | |
| Poona | 27.80 | 706.2 | 29.74 | 755.4 | 95.2 | 35.1 | 30 | WNW | | | | | 2 | | | 0 | 0 | D. clouds | |
| Lahore | 28.90 | 734.1 | 29.61 | 752.0 | 102.3 | 39.1 | 19 | Calm | 1.3 | 0.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.29 | 693.1 | 29.77 | 756.2 | 85.8 | 29.9 | 73 | WSW | 20 | 8.9 | | | 2 | E | E | 0 | 0 | D. clouds | |
| Roorkee | 28.75 | 730.3 | 29.61 | 752.2 | 99.1 | 37.3 | 12 | NW | 1.4 | 0.6 | | | 0 | | | 0 | 0 | | |
| Agra | 29.10 | 739.1 | 29.63 | 752.6 | 105.6 | 40.9 | 10 | W | | | | | | | | 0 | 0 | | |
| Nagpur | 28.65 | 727.8 | 29.65 | 753.0 | 103.7 | 39.8 | 12 | Calm | 2.7 | 1.2 | | | 7 | | E | 0 | 0 | D. clouds | |
| Lucknow | 29.31 | 744.4 | 29.67 | 753.6 | 100.5 | 38.1 | 38 | WNW | 2.0 | 0.9 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.36 | 745.7 | 29.66 | 753.2 | 99.9 | 37.7 | 17 | Calm | 1.4 | 0.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.50 | 749.2 | 29.67 | 753.6 | 98.6 | 37.0 | 12 | NW | 0.8 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.72 | 704.1 | 29.66 | 753.5 | 94.8 | 34.9 | 30 | NW | 5.2 | 2.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.62 | 752.2 | 29.70 | 754.2 | 90.1 | 32.3 | 16 | S | 9 | 4.0 | | | 2 | | | 0 | 0 | | |
| Calcutta (Alipore) | 29.70 | 754.3 | 29.72 | 754.8 | 87.8 | 31.0 | 69 | S | 8 | 3.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.32 | 744.7 | 29.71 | 754.6 | 82.8 | 28.2 | 75 | Calm | 6.2 | 2.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.70 | 754.4 | 29.79 | 756.7 | 85.3 | 29.6 | 77 | SSW | 7.4 | 3.3 | | | 3 | | | 0.14 | 3.6 | Misty | |
| Sibsagar | 29.45 | 748.0 | 29.78 | 756.5 | 78.5 | 25.8 | 80 | SE | 1.6 | 0.7 | | | 10 | W | W | 0 | 0 | Gloomy | |
| Jubbulpore | 28.34 | 719.8 | 29.64 | 752.9 | 101.7 | 38.7 | 11 | Calm | 2.3 | 1.0 | | | 3 | | E | 0 | 0 | D. clouds | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since observation of the preceding day.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.34 | 745.2 | 29.75 | 755.6 | 55.8 | 13.2 | 75 | E | 1.8 | 0.8 | ..... | ..... | 10 | ..... | ..... | 0.709 | 18.0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.12 | 739.7 | 29.63 | 752.7 | 57.0 | 13.9 | 75 | NW | ..... | ..... | 4 | ..... | 9 | ESE | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.60 | 751.9 | 29.71 | 754.7 | 57.4 | 14.1 | 71 | NE | 12.5 | 5.6 | ..... | ..... | 7 | SW | ..... | 0.177 | 4.5 | ..... | Prof. Dott. Lorenzoni. |
| Moncalieri | 28.74 | 730.1 | 29.64 | 752.9 | 56.5 | 13.6 | 73 | ESE | 3.1 | 1.4 | ..... | ..... | 9 | NNE | ..... | 0.638 | 16.2 | ..... | Prof. P. F. Denza. |
| Genoa | 29.54 | 750.3 | 29.73 | 755.1 | 52.2 | 11.2 | 77 | SW | 14.3 | 6.4 | ..... | ..... | 10 | SE | ..... | 0.118 | 3.0 | ..... | Prof. G. M. Garibaldi |
| Mondovi | 27.75 | 705.3 | 29.67 | 753.6 | 53.8 | 12.1 | 60 | NW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.69 | 754.2 | 29.74 | 755.4 | 62.4 | 16.9 | 50 | SW | 6.3 | 2.8 | ..... | ..... | 10 | SW | ..... | 0.472 | 12.0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.52 | 749.9 | 29.78 | 756.4 | 59.0 | 15.0 | 70 | SW | ..... | ..... | 2 | ..... | 10 | SW | ..... | 0.622 | 15.8 | ..... | Cav. F. Meucci |
| Leghorn | 29.68 | 753.8 | 29.76 | 755.9 | 56.5 | 13.6 | 75 | W | ..... | ..... | 4 | ..... | 10 | WSW | ..... | 0.602 | 15.3 | ..... | Prof. P. Monte. |
| Rome | 29.69 | 754.0 | 29.86 | 758.4 | 60.3 | 15.7 | 80 | S | 9.4 | 4.2 | ..... | ..... | 10 | ..... | ..... | 0.106 | 2.7 | ..... | Prof. P. S. Ferrari |
| Lecce | 29.70 | 754.3 | 29.95 | 760.7 | 66.9 | 19.4 | 45 | WSW | 17.4 | 7.8 | ..... | ..... | 7 | W | ..... | 0.079 | 2.0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.11 | 739.4 | 29.99 | 761.7 | 67.6 | 19.8 | 71 | NW | 1.3 | 0.6 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. D. Conti. |
| Cagliari | 29.55 | 750.6 | 29.74 | 755.5 | 64.4 | 18.0 | 53 | S | ..... | ..... | 4 | ..... | 3 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.68 | 753.8 | 29.93 | 760.1 | 72.5 | 22.5 | 40 | SW | 12.5 | 5.6 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore |
| Syracuse | 29.93 | 760.2 | 30.00 | 762.0 | 67.6 | 19.8 | 58 | S | 16.1 | 7.2 | ..... | ..... | 10 | WSW | ..... | 0.354 | 9.0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.39 | 746.6 | 29.95 | 760.7 | 64.4 | 18.0 | 59 | WSW | 4.9 | 2.2 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.11 | 764.8 | 30.13 | 765.3 | 58.4 | 14.7 | 78 | Calm | 0 | 0 | ..... | ..... | 10cks | ..... | ..... | 0.010 | 0.25 | Cloudy | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.87 | 758.7 | 30.07 | 763.8 | 61.2 | 16.2 | 63 | SE | 5.7 | 2.5 | ..... | ..... | 10s | ..... | ..... | 0.030 | 0.76 | Cloudy | S. Takehayashi. |
| Tokei, (Yeddo) Observatory | 30.13 | 765.3 | 30.20 | 767.1 | 56.2 | 13.4 | 85 | S | 5.4 | 2.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.09 | 637.2 | 30.19 | 766.9 | 50.0 | 10.0 | 41 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | Prof. L. Perez. |
| Leon | 24.44 | 620.8 | 30.11 | 764.9 | 59.9 | 15.5 | 66 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.10 | 586.8 | 30.08 | 764.0 | 55.9 | 13.3 | 55 | Calm | 0 | 0 | ..... | 4ck | 0 | ..... | ..... | 0 | 0 | Hazy | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 55.9 | 13.3 | 50 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. V. de Leon, M. E. |
| Tlacotalpam | 29.91 | 759.6 | 29.92 | 759.9 | 77.0 | 25.0 | 93 | S | ..... | ..... | 2 | 4 | 6 | S | S | 0.02 | 0.5 | Light fog | M. M. Chazaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | 22.54 | 572.5 | 30.11 | 764.8 | 61.0 | 16.1 | 40 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | J. Castrillon. |
| Puebla, (Catholic Institute) | 23.41 | 594.5 | 30.17 | 766.3 | 50.0 | 10.0 | 68 | ENE | 1.3 | 0.6 | ..... | 0 | 1 | ..... | NW | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.38 | 720.7 | 30.05 | 763.3 | 70.3 | 21.3 | 30 | NNE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | Very cloudy | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

NOTE.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 507.3 m., or 1,664.4 ft. The data are published as given, except the conversions, which have been revised; the instrumental correction —0.88 mm., has been applied at this office to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.66 | 753.3 | 29.66 | 753.3 | 57.9 | 14.4 | ..... | NE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.008 | 0.2 | ..... | |
| Groningen | 29.65 | 753.2 | 29.71 | 754.6 | 55.0 | 12.8 | ..... | ENE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.020 | 0.5 | ..... | |
| Helder | 29.70 | 754.4 | 29.70 | 754.4 | 48.9 | 9.4 | ..... | NE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.059 | 1.5 | ..... | |
| Hellevoetsluis | 29.66 | 753.3 | 29.66 | 753.3 | 60.8 | 16.0 | 50 | NE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.63 | 752.6 | 29.68 | 753.8 | 57.0 | 13.9 | 59 | ENE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Light clouds | H. v. d. Brink. |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.91 | 759.6 | 29.96 | 761.0 | 47.5 | 8.6 | 55 | WNW | 4.0 | 1.8 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 30.01 | 762.2 | 30.05 | 763.2 | 38.8 | 3.8 | 54 | NNE | 18 | 8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.78 | 756.5 | 29.93 | 760.2 | 50.5 | 10.3 | 38 | NNE | 13 | 6 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.00 | 762.1 | 30.05 | 763.2 | 34.9 | 1.6 | 69 | N | 11 | 5 | ..... | 10 | ..... | ..... | ..... | 0.134 | 3.4 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p.m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra (Azores) | 30.00 | 762.1 | 30.19 | 766.9 | 64.2 | 17.9 | 88 | S | 4.9 | 2.2 | ..... | ..... | 5 | ..... | ..... | 0.039 | 1.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.10 | 739.1 | 30.12 | 765.1 | 61.7 | 16.5 | 47 | WNW | 15.0 | 6.7 | ..... | ..... | 7 | WNW | ..... | 0 | 0 | ..... | Dr. A.M. R. dos Santos. |
| Funchal (Madeira) | 30.15 | 765.7 | 30.23 | 767.9 | 66.4 | 19.1 | 71 | SW | 6.9 | 3.1 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.85 | 758.2 | 30.21 | 767.4 | 60.1 | 15.6 | 57 | WNW | 16.1 | 7.2 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada (Azores) | 30.19 | 766.7 | 30.26 | 768.5 | 70.9 | 21.6 | 69 | S | 4.9 | 2.2 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0— | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa. Com'd.t. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande,Com'd't. |
| Duque da Terceira, San Jose de Blasao, Senegambia | ..... | ..... | 30.05 | 763.2 | 76.1 | 24.5 | ..... | Calm | ..... | ..... | 0 | ..... | 3 | ..... | ..... | 0 | ..... | D clouds | C.C.da Fonseca Ferreira,Comd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, S. 6° 03′, E. 11° 11′ | ..... | ..... | 29.90 | 759.5 | 83.3 | 28.5 | ..... | SSE | ..... | ..... | 1 | ..... | 5 | ..... | SE | 1 | SW | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria,Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa. Porto de Balama, Senegambia | ..... | ..... | 29.92 | 759.9 | 81.7 | 27.6 | ..... | Var. | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 1 | ..... | D. clouds | A. Ferreira, 2d Lt |
| Sá da Bandeira | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 29.94 | 760.5 | 74.3 | 23.5 | ..... | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 2 | ..... | Blue sky | J. M. T. Guimaraes, Com'd't. |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.16 | 740.7 | 29.59 | 751.6 | 40.6 | 4.6 | 84 | WSW | 13 | 6 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.13 | 740.0 | 29.56 | 750.7 | 45.5 | 7.5 | 83 | SSW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds | Astronomical Obs. |
| Dorpat | 29.29 | 743.9 | 29.53 | 750.1 | 41.7 | 5.4 | 94 | N | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.50 | 749.3 | 29.52 | 749.7 | 38.1 | 3.4 | 90 | NNE | 11 | 5 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.05 | 737.9 | 29.67 | 753.6 | 59.2 | 15.1 | 52 | WSW | 11 | 5 | ..... | ..... | 5k;ks; c;ck] | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.71 | 754.7 | 29.78 | 756.5 | 68.5 | 20.3 | 47 | SSE | 4 | 2 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.85 | 758.3 | 29.87 | 758.8 | 61.7 | 16.5 | 85 | SSW | 7 | 3 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 28.94 | 735.1 | 29.47 | 748.6 | 57.2 | 14.0 | 76 | S | 27 | 12 | ..... | ..... | 8n | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.56 | 750.9 | 29.76 | 756.0 | 66.4 | 19.1 | 52 | W | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.69 | 754.2 | 29.71 | 754.7 | 37.2 | 2.9 | 64 | NNE | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Capt. Ssellwerstow. |
| Tiflis | 28.49 | 723 6 | 29.82 | 757.4 | 85.5 | 29.7 | 35 | Calm | 0 | 0 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 29.96 | 761.1 | 29.88 | 759.0 | 76.1 | 24.5 | 37 | SE | 16 | 7 | ..... | ..... | 7cs | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.37 | 746.1 | 29.82 | 757.4 | 78.4 | 25.8 | 39 | S | 20 | 9 | ..... | ..... | 7s | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.43 | 747.5 | 29.69 | 754.0 | 71.6 | 22.0 | 56 | SSE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 25.94 | 735.0 | 29.87 | 758.6 | 68.5 | 20.3 | 45 | W | 18 | 8 | ..... | ..... | 8c;k;os; ck] | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.77 | 756.2 | 29.99 | 761.8 | 89.2 | 31.8 | 41 | NE | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.40 | 721.4 | 29.90 | 759.5 | 76.3 | 24.6 | 56 | Calm | 0 | 0 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.66 | 753.4 | 30.17 | 766.4 | 41.5 | 5.3 | 40 | NW | 4 | 2 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeniseisk | 30.08 | 764.0 | 30.39 | 771.8 | 28.6 | - 1.9 | 41 | NW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking (China) | 29.65 | 753.1 | 29.79 | 756.7 | 64.4 | 18.0 | 42 | Calm | 0 | 0 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.94 | 760.5 | 30.04 | 763.0 | 37.6 | 3.1 | 88 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.63 | 752.7 | 29.74 | 755.4 | 59.9 | 15.5 | 66 | ENE | 5.1 | 2.28 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 29.81 | 757.2 | 29.87 | 758.6 | 63.1 | 17.3 | 53 | NW | 3.8 | 1.68 | ..... | 2 | 8 | W | ..... | 0.008 | 0.2 | Covered | Prof.Manuel deNaveran |
| Burgos, Met. Obs'y | 26.91 | 683.5 | ..... | ..... | 54.6 | 12.2 | 46 | SW | 12.2 | 5.44 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Cloudy | DomingoMartin y Peres. |
| Madrid, Royal Osservatory | 27.72 | 704.1 | ..... | ..... | 60.8 | 16.0 | 49 | W | 33.6 | 15.00 | ..... | 1 | 8 | W | ..... | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.66 | 753.4 | 29.80 | 757.0 | 86.2 | 30.1 | 19 | NW | 5.3 | 2.36 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.12 | 739.6 | 30.00 | 762.1 | 60.6 | 15.9 | 67 | WNW | 11.2 | 5.0 | ..... | ..... | 8 | ..... | ..... | 0.110 | 2.8 | Almost cov'd | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.95 | 760.8 | 30.02 | 762.5 | 74.9 | 23.8 | 77 | ESE | 6.7 | 3.0 | ..... | 8c | 0 | WSW | ..... | 0 | 0 | Fair | Benito Vines, S. J. |
| Manilla, Philippine Islands | 29.80 | 756.8 | 29.84 | 758.1 | 82.2 | 27.9 | 83 | SE | 4.5 | 2.0 | ..... | 4 | 2 | S | E | 0.039 | 1.0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.10 | 764.4 | 30.19 | 766.9 | 60.8 | 16.0 | 61 | WNW | 15.0 | 6.7 | ..... | 0 | 1 | ..... | NW | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W.I | 29.98 | 761.5 | 30.07 | 763.8 | 78.4 | 25.8 | 83 | NE | 17.0 | 7.58 | ..... | 6kn | 5kn | NE | NE | 1.575 | 40.00 | Cloudy | Leonardo deTejeda,Ch'f Eng'r. |

Note.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.95 | 760.7 | 29.99 | 761.7 | 38.8 | 3.8 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.94 | 760.5 | 30.00 | 761.9 | 41.7 | 5.4 | 42 | ENE | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.95 | 760.7 | 30.00 | 762.0 | 46.8 | 8.2 | 37 | NE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.62 | 752.4 | 29.80 | 756.9 | 43.7 | 6.5 | 26 | N | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.63 | 752.5 | 29.69 | 754.0 | 38.5 | 3.6 | 87 | NE | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.78 | 756.4 | 29.85 | 758.3 | 43.2 | 6.2 | 34 | NNE | 23.5 | 10.5 | ..... | 0 | ..... | ..... | ..... | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.28 | 717.1 | 29.66 | 753.4 | 58.1 | 11.7 | 67 | W | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0.102 | 2.6 | Covered ..... | The Observatory. |
| Zurich | 28.01 | 711.5 | 29.64 | 752.9 | 56.8 | 13.8 | 51 | E | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0.134 | 3.4 | Clear..... | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —7.3 mm.; Thermometer,—2.0 Cent.; Relative Humidity, 0 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,338.6 feet, and that of Zurich 470 m., or 1,542.6 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.97 | 761.2 | 64.0 | 17.8 | 57 | SW | 7 | 3.0 | ..... | ..... | 6 | ..... | SW | 0.098 | 2.5 | ..... ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.16 | 766.0 | 98.6 | 37.0 | ..... | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Valona | ..... | ..... | 30.02 | 762.6 | 65.3 | 18.5 | ..... | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut (Syria) Lee Obs'y | 30.01 | 762.2 | 30.12 | 765.1 | 73.2 | 22.9 | 67 | W | ..... | ..... | 3 | ..... | 1c | ..... | ..... | 0 | 0 | D clouds..... | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | 48 | 8.9 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.75 | 755.6 | 30.05 | 763.3 | 48 | 8.9 | ..... | Calm | 0 | 0 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy ..... | W. R. Bigg. |
| *Chatham, N. B | 30.17 | 766.3 | 30.23 | 767.8 | 37 | 2.8 | 68 | NE | 3 | 1.3 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair..... | G. A. Blair. |
| Charlottetown, P. E. Island | 30.17 | 766.3 | 30.21 | 767.3 | 41 | 5.0 | 78 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.82 | 757.4 | 30.01 | 762.2 | 50.3 | 10.2 | 89 | E | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | Overcast..... | James Smith. M. A. |
| Dalhousie, N. B | 30.01 | 762.2 | 30.18 | 766.6 | 45 | 7.2 | ..... | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | H. A. Johnson. |
| Esquimault, B. C | 30.11 | 764.8 | 30.16 | 766.1 | 48.3 | 9.1 | 85 | Calm | 0 | 0 | ..... | 8ck | 0 | ..... | ..... | 0 | 0 | Cloudy ..... | W. H. Bevis. |
| *Father Point, Quebec | 30.14 | 765.5 | 30.16 | 766.1 | 39 | 3.9 | 90 | N | 4 | 1.8 | ..... | 0 | Haze | .... ..... | Calm | 0 | 0 | Hazy. ..... | J. McWilliams. |
| Fredericton, N. B | 30.16 | 766.1 | 30.23 | 767.8 | 42.1 | 5.6 | 92 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.17 | 740.9 | 30.03 | 762.8 | 32 | 0.0 | 90 | NW | 12 | 5.4 | ..... | 5ck | 2ks | NW | NW | 0.200 | 6.60 | Fair ..... | James Stewart. |
| Granton, Ontario | 28.85 | 732.8 | 29.93 | 760.2 | 56 | 13.3 | ..... | SE | ..... | ..... | 1 | ..... | 10n | ..... | ..... | Inap. | Inap. | Overcast..... | James Grant. |
| *Halifax, N. S | 30.03 | 762.8 | 30.17 | 766.3 | 46 | 7.8 | 63 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.68 | 753.9 | 30.05 | 763.3 | 45.7 | 7.6 | 95 | SW | ..... | ..... | 1 | 10cs | 0 | SW | ..... | 0 | 0 | Cloudy..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.71 | 754.6 | 30.04 | 763.0 | 52 | 11.1 | 91 | E | 3 | 1.3 | ..... | 10cs | Sm'e | Calm | E | 0 | 0 | Cloudy..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.09 | 764.3 | 30.13 | 765.3 | 34.4 | 1.3 | 91 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | C. H. Rigby. |
| Moose Factory, Ontario | 29.56 | 750.8 | 29.60 | 751.8 | 40.5 | 4.7 | 95 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.25 | 6.3 | Raining ..... | J. R. Nason. |
| *Montreal, Quebec | 29.86 | 758.4 | 30.06 | 763.5 | 49 | 9.4 | 84 | S | 14 | 6.3 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.25 | 742.9 | 29.93 | 760.2 | 54 | 12.2 | 90 | SE | 9 | 4.0 | ..... | 2ck | 5ks | S | S | Inap. | Inap. | Fair..... | Rev. R. Mosly. |
| Peterboro, Ontario | 29.26 | 743.2 | 30.00 | 762.0 | 53.7 | 12.1 | 93 | SW | ..... | ..... | 0 | ..... | 10ks | ..... | ..... | 0 | 0 | Foggy ..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.30 | 744.2 | 29.99 | 761.7 | 54 | 12.2 | 100 | N | 4 | 1.8 | ..... | ..... | 10n | ..... | SW | Inap. | Inap. | Threatening | H. Morgan. |
| Port Hastings, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Peter Grant. |
| Port Stanley, Ontario | 29.33 | 745.0 | 29.97 | 761.2 | 56 | 13.3 | 91 | E | 8 | 3.6 | ..... | ..... | Fog | ..... | ..... | Inap. | Inap | Cloudy..... | M. Payne. |
| *Quebec, Quebec | 29.82 | 757.4 | 30.15 | 765.8 | 41 | 5.0 | 74 | NE | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.54 | 750.3 | 30.00 | 762.0 | 49 | 9.4 | 93 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | S | Inap. | Inap. | Cloudy..... | W. H. McIntyre. |
| St. Andrews, N. B | 30.15 | 765.8 | 30.20 | 767.1 | 43 | 6.1 | 75 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | Dr. Gove. |
| St. John, N. B | 30.06 | 763.5 | 30.22 | 767.6 | 46 | 7.8 | 77 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.20 | 741.7 | 29.90 | 759.4 | 58 | 14.4 | 95 | S | 10 | 4.5 | ..... | ..... | 10n | ..... | SW | 0.08 | 2.0 | Cloudy..... | K. Stewart. |
| Stayner, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. J. Cole. |
| Stratford, Ontario | 28.68 | 728.5 | 29.94 | 760.5 | 55.2 | 12.9 | 92 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0.03 | 0.8 | Overcast..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.08 | 764 0 | 30.12 | 765.0 | 42 | 5.6 | 69 | N | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear..... | T. C. Hill. |
| *Toronto, Ontario | 29.65 | 753.1 | 30.03 | 762.8 | 47 | 8.3 | 97 | SE | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Foggy ..... | Magnetic Observatory. |
| Windsor, N. S | 30.12 | 765.0 | 30.21 | 767.3 | 42.0 | 5.6 | 87 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear..... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 36 | 2.2 | 100 | NE | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 1.30 | 33.0 | Rainy ..... | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the co-operation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'r 0—10. | Clouds. Amount. Lw'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.97 | 761.2 | 30.20 | 767.1 | 49 | 9.4 | 75 | S | 11 | 4.9 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Alpena, Michigan | 29.19 | 741.4 | 29.82 | 757.4 | 54 | 12.2 | 87 | S | 10 | 4.6 | ..... | 0 | 6s | ..... | Calm | 0.02 | 0.5 | Fair | |
| Atlanta, Georgia | 28.87 | 733.3 | 30.00 | 762.0 | 61 | 16.1 | 88 | SE | 7 | 3.1 | ..... | ..... | 10n | ..... | Calm | 0.11 | 2.8 | Light rain | |
| Atlantic City, New Jersey | 30.20 | 767.1 | 30.22 | 767.6 | 45 | 7.2 | 100 | E | 14 | 6.3 | ..... | ..... | Fog | ..... | Calm | 0.12 | 3.0 | Foggy | |
| Augusta, Georgia | 29.91 | 759.7 | 30.08 | 764.0 | 67 | 19.4 | 74 | SE | 3 | 1.3 | ..... | ..... | 10n | ..... | S | Inap | Inap. | Light rain | |
| Baltimore, Maryland | 30.15 | 765.8 | 30.20 | 767.1 | 53 | 11.7 | 80 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Barnegat, New Jersey | 30.19 | 766.8 | 30.21 | 767.3 | 43 | 6.1 | 92 | E | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Bismarck, Dakota | 28.24 | 717.3 | 30.10 | 764.5 | 40 | 4.4 | 82 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Boerne, Texas | 28.41 | 721.6 | 29.68 | 753.9 | 65 | 18.3 | 80 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boise City, Idaho | 27.16 | 689.8 | 30.12 | 765.0 | 41 | 5.0 | 57 | SE | 2 | 0.9 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Boston, Massachusetts | 30.10 | 764.5 | 30.26 | 768.6 | 46 | 7.8 | 77 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Brackettville, Texas | 28.66 | 728.0 | 29.66 | 753.4 | 66 | 18.9 | 89 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 29.05 | 737.9 | 30.08 | 764.0 | 36 | 2.2 | 80 | W | 9 | 4.0 | ..... | 5k | 0 | NW | ..... | Inap. | Inap. | Fair | |
| Brownsville, Texas | 29.80 | 756.9 | 29.84 | 757.9 | 75 | 23.9 | 81 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.31 | 744.5 | 29.99 | 761.7 | 56 | 13.3 | 84 | W | 4 | 1.8 | ..... | ..... | 10n | ..... | SW | 0.01 | 0.3 | Light rain | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Burlington, Vermont | 29.82 | 757.4 | 30.11 | 764.8 | 55 | 12.8 | 62 | S | 12 | 5.4 | ..... | 2ck | 2s | W | Calm | 0 | 0 | Fair | |
| Cairo, Illinois | 29.57 | 751.1 | 29.95 | 760.7 | 64 | 17.8 | 89 | SE | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.21 | 640.3 | 30.01 | 762.2 | 56 | 13.3 | 24 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 46 | 7.8 | 54 | NW | ..... | ..... | 1 | 2cs | 0 | W | ..... | 0 | 0 | Fair | |
| Campo, California | 27.45 | 697.2 | 30.02 | 762.5 | 35 | 1.7 | 70 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.20 | 767.1 | 30.20 | 767.1 | 64 | 17.8 | 89 | SW | 8 | 3.6 | ..... | 10c | Sm'e | NW | W | 0 | 0 | Cloudy | |
| Cape Henry, Virginia | 30.11 | 764.8 | 30.13 | 765.3 | 67 | 19.4 | 69 | SW | 14 | 6.3 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.17 | 766.3 | 30.18 | 766.6 | 66 | 18.9 | 89 | Calm | 0 | 0 | ..... | 5c | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Cape May, New Jersey | 30.12 | 765.0 | 30.15 | 765.8 | 48 | 8.9 | 92 | E | 15 | 6.7 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Castroville, Texas | 29.08 | 738.6 | 29.77 | 756.1 | 66 | 18.9 | 79 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.05 | 763.3 | 30.10 | 764.5 | 71 | 21.7 | 75 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Cheyenne, Wyoming | 24.16 | 613.6 | 30.10 | 764.5 | 33 | 0.6 | 79 | NE | 5 | 2.2 | ..... | 0 | 8ks | ..... | NE | 0.03 | 0.8 | Cloudy | |
| Chicago, Illinois | 29.19 | 741.4 | 29.86 | 758.4 | 60 | 15.6 | 82 | SW | 5 | 2.2 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Cincinnati, Ohio | 29.35 | 745.5 | 29.98 | 761.5 | 64 | 17.8 | 65 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Cleveland, Ohio | 29.26 | 743.2 | 29.97 | 761.2 | 62 | 16.7 | 77 | SE | 3 | 1.3 | ..... | ..... | 10ks | ..... | W | 0.02 | 0.5 | Threatening | |
| Coleman City, Texas | 28.07 | 713.0 | 29.67 | 753.6 | 66 | 18.9 | 74 | S | 14 | 6.3 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Columbus, Ohio | 29.15 | 740.4 | 29.96 | 761.0 | 64 | 17.8 | 68 | S | 2 | 0.9 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy | |
| Concho, Texas | 27.97 | 710.4 | 29.59 | 751.6 | 67 | 19.4 | 74 | NW | 8 | 3.6 | ..... | 5k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Corsicana, Texas | 29.42 | 747.2 | 29.87 | 758.7 | 65 | 18.3 | 89 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.30 | 744.2 | 29.93 | 760.2 | 56 | 13.3 | 51 | NW | 10 | 4.5 | ..... | 2ck | 0 | W | ..... | 0 | 0 | Fair | |
| Deadwood, Dakota | 25.46 | 646.7 | ..... | ..... | 35 | 1.7 | 70 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Decatur, Texas | 28.72 | 729.5 | 29.84 | 757.9 | 68 | 20.0 | 79 | N | 12 | 5.4 | ..... | 5c;cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Denison, Texas | 29.10 | 739.1 | 29.87 | 758.7 | 63 | 17.2 | 89 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.94 | 633.5 | 30.16 | 766.1 | 42 | 5.6 | 83 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.11 | 2.8 | Clear | |
| Des Moines, Iowa | 29.18 | 741.2 | 30.07 | 763.8 | 43 | 6.1 | 59 | N | 12 | 5.4 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| Detroit, Michigan | 29.27 | 743.4 | 29.93 | 760.2 | 57 | 13.9 | 87 | S | 3 | 1.3 | ..... | ..... | 10ks | ..... | NW | 0.07 | 1.8 | Threatening | |
| Dodge City, Kansas | 27.48 | 698.0 | 29.76 | 755.9 | 50 | 10.0 | 86 | NE | 28 | 12.5 | ..... | 0 | 2s | ..... | N | 0.18 | 4.6 | Clearing | |
| Dubuque, Iowa | 29.24 | 742.7 | 29.93 | 760.2 | 52 | 11.1 | 47 | N | 7 | 3.1 | ..... | 1ck | 0 | Calm | ..... | 0.02 | 0.5 | Clear | |
| Duluth, Minnesota | 29.23 | 742.4 | 29.92 | 760.0 | 40 | 4.4 | 56 | W | 10 | 4.5 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Eagle Pass, Texa | 29.04 | 737.6 | 29.75 | 755.6 | 67 | 19.4 | 84 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 30.15 | 765.8 | 30.22 | 767.6 | 43 | 6.1 | 75 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 71 | 21.7 | 90 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| El Paso, Texas | 26.25 | 666.7 | ..... | ..... | 59 | 15.0 | 12 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.26 | 743.2 | 29.96 | 760.7 | 64 | 17.8 | 73 | SE | 4 | 1.8 | ..... | 10c | Haze | W | Calm | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.13 | 739.9 | 29.77 | 756.1 | 53 | 11.7 | 61 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.47 | 723.1 | 30.07 | 763.8 | 60 | 15.6 | 20 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 27.99 | 710.9 | ..... | ..... | 38 | 3.3 | 81 | SW | 7 | 3.1 | ..... | 5ck | 0 | NW | ..... | 0.04 | 1.0 | Fair | |
| Fort Craig, New Mexico | 25.51 | 647.9 | 29.57 | 751.1 | 48 | 8.9 | 37 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.20 | 640.1 | 30.16 | 766.1 | 66 | 18.9 | 15 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.36 | 745.7 | 29.88 | 758.9 | 65 | 18.3 | 78 | S | 2 | 0.9 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.63 | 727.2 | 29.87 | 758.7 | 64 | 17.8 | 94 | NE | 12 | 5.4 | ..... | 5k | 0 | NE | ..... | 0 | 0 | Fair | |
| Fort Keogh, Montana | 27.47 | 697.7 | ..... | ..... | 37 | 2.8 | 54 | Calm | 0 | 0 | ..... | 8k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort McKavett, Texas | 27.56 | 700.0 | 29.39 | 746.5 | 68 | 20.0 | 70 | SW | 12 | 5.4 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.96 | 761.0 | 29.99 | 761.7 | 16 | — 8.9 | 100 | N | 24 | 10.7 | ..... | ..... | 10k | ..... | N | Inap. | Inap. | Cloudy | |
| Fort Sill, Indian Territory | 28.67 | 728.2 | 29.75 | 755.6 | 60 | 15.6 | 82 | N | 12 | 5.4 | ..... | 5ck | 5ks | Calm | Calm | 0.74 | 18.8 | Cloudy | |
| Fort Stevenson, Dakota | ..... | ..... | ..... | ..... | 36 | 2.2 | 70 | Calm | 0 | 0 | ..... | 1c | 0 | Calm | ..... | 0.04 | 1.0 | Fair | |
| Fredericksburg, Texas | 28.29 | 718.6 | 29.79 | 756.7 | 70 | 21.1 | 80 | S | 9 | 4.0 | ..... | 0 | 8ks | ..... | Calm | 0 | 0 | Fair | |
| Galveston, Texas | 29.89 | 759.2 | 29.93 | 760.2 | 72 | 22.2 | 90 | S | 4 | 1.8 | ..... | 2k | 0 | S | ..... | 0 | 0 | Clear | |
| Graham, Texas | 28.80 | 731.5 | 29.82 | 757.4 | 66 | 18.9 | 84 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 29.23 | 742.4 | 29.86 | 758.4 | 58 | 14.4 | 88 | SW | 16 | 7.2 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Indianapolis, Indiana | 29.15 | 740.4 | 29.90 | 759.4 | 64 | 17.8 | 73 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Indianola, Texas | 29.90 | 759.4 | 29.92 | 760.0 | 71 | 21.7 | 95 | S | 8 | 3.6 | ..... | 0 | 8s | ..... | S | 0 | 0 | Fair | |
| Jacksboro, Texas | 28.73 | 729.7 | 29.85 | 758.2 | 66 | 18.9 | 79 | SE | 10 | 4.5 | ..... | 4ck | 6ks | SE | SE | 0 | 0 | Cloudy | |
| Jacksonville, Florida | 30.04 | 763.0 | 30.06 | 763.5 | 70 | 21.1 | 85 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | 0.25 | 6.3 | Cloudy | |
| Keokuk, Iowa | 29.30 | 744.2 | 29.91 | 759.7 | 56 | 13.3 | 48 | N | 12 | 5.4 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| Key West, Florida | 30.00 | 762.0 | 30.03 | 762.8 | 77 | 25.0 | 77 | SE | 14 | 6.3 | ..... | 5k | Haze | SE | Calm | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 30.11 | 764.8 | 30.13 | 765.3 | 65 | 18.3 | 78 | SW | 16 | 7.2 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.04 | 737.6 | 30.02 | 762.5 | 64 | 17.8 | 68 | E | 1 | 0.4 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Threatening | |
| La Crosse, Wisconsin | 29.21 | 741.9 | 29.95 | 760.7 | 45 | 7.2 | 53 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.07 | 662.2 | 30.22 | 767.6 | 48 | 8.9 | 63 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.41 | 747.0 | 29.73 | 755.1 | 80 | 26.7 | 59 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.17 | 740.9 | 30.01 | 762.2 | 51 | 10.6 | 59 | N | 14 | 6.3 | ..... | ..... | 10ks;n | ..... | W | 0.04 | 1.0 | Light rain | |
| Los Angeles, California | 29.67 | 753.6 | 30.01 | 762.2 | 51.0 | 10.6 | 93 | NE | 3 | 1.3 | ..... | ..... | Fog | ..... | Calm | Inap. | Inap. | Foggy | |
| Louisville, Kentuckey | 29.43 | 747.5 | 29.97 | 761.2 | 64 | 17.8 | 78 | S | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | 0.03 | 0.8 | Light rain | |
| Lynchburg, Virginia | 29.44 | 747.8 | 30.10 | 764.5 | 67 | 19.4 | 60 | Calm | 0 | 0 | ..... | 0 | 5ks | ..... | Calm | 0 | 0 | Fair | |
| Madison, Wisconsin | 28.89 | 733.8 | 29.86 | 758.4 | 55 | 12.8 | 50 | NW | 8 | 3.6 | ..... | 1k | 0 | NW | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.06 | 738.1 | 29.75 | 755.6 | 52 | 11.1 | 54 | W | 4 | 1.8 | ..... | 0 | 8s | ..... | W | 0 | 0 | Fair | |
| Mason, Texas | 28.19 | 716.0 | 29.87 | 758.7 | 68 | 20.0 | 74 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.61 | 752.1 | 29.92 | 760.0 | 64 | 17.8 | 94 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.09 | 2.3 | Cloudy | |
| Milwaukee, Wisconsin | 29.13 | 739.9 | 29.83 | 757.7 | 59 | 15.0 | 70 | W | 11 | 4.9 | ..... | 1ck | 8s | W | W | 0 | 0 | Cloudy | |
| Mobile, Alabama | 29.94 | 760.5 | 29.98 | 761.5 | 66 | 18.9 | 81 | NE | 4 | 1.8 | ..... | 5k | 5s | W | W | 1.28 | 32.5 | Cloudy | |
| Montgomery, Alabama | 29.76 | 755.9 | 29.99 | 761.7 | 66 | 18.9 | 84 | S | 5 | 2.2 | ..... | 8k | 0 | S | ..... | 0.02 | 0.5 | Fair | |
| Morgantown, West Virginia | 28.95 | 735.3 | 29.96 | 761.0 | 69 | 20.6 | 52 | S | 4 | 1.8 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Mt. Washington, N. H. | 23.95 | 608.3 | 30.31 | 769.9 | 36 | 2.2 | 80 | W | 12 | 5.4 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |
| Nashville, Tennessee | 29.42 | 747.2 | 29.94 | 760.5 | 64 | 17.8 | 78 | SE | 4 | 1.8 | ..... | ..... | 10ks | ..... | S | 0.09 | 2.3 | Cloudy | |
| New Haven, Connecticut | 30.15 | 765.8 | 30.26 | 768.6 | 52 | 11.1 | 73 | SE | 5 | 2.2 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| New London, Connecticut | 30.22 | 767.6 | 30.27 | 768.8 | 50 | 10.0 | 55 | SE | 6 | 2.7 | ..... | 1c | 0 | NW | ..... | 0 | 0 | Clear | |
| New Orleans, Louisiana | 29.90 | 759.4 | 29.96 | 761.0 | 67 | 19.4 | 84 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.22 | 5.6 | Clear | |
| Newport, Rhode Island | 30.22 | 767.6 | 30.27 | 768.8 | 44.5 | 6.9 | 80 | NE | 1 | 0.4 | ..... | 2c | Fog | S | Calm | 0 | 0 | Fair | |
| New York, New York | 30.08 | 764.0 | 30.26 | 768.6 | 49 | 9.4 | 71 | E | 8 | 3.6 | ..... | 1ck | 5ks | Calm | Calm | 0 | 0 | Fair | |
| Norfolk, Virginia | 30.09 | 764.3 | 30.15 | 765.8 | 70 | 21.1 | 66 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.28 | 692.9 | 29.91 | 759.7 | 41 | 5.0 | 78 | NE | 12 | 5.4 | | | 10s | | Calm | 0.03 | 0.8 | Cloudy | |
| Olympia, Washington Ter. | 30.16 | 766.1 | 30.20 | 767.1 | 34.2 | 1.2 | 90 | S | 1 | 0.4 | | | 10s | | | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 28.89 | 736.3 | 30.10 | 764.5 | 45 | 7.2 | 53 | N | 13 | 5.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Oswego, New York | 29.72 | 754.9 | 30.04 | 763.0 | 57 | 13.9 | 81 | SE | 12 | 5.4 | | | 10s | | SW | Inap | Inap. | Cloudy | |
| Pembina, Dakota | 29.15 | 740.4 | 30.01 | 762.2 | 30 | — 1.1 | 100 | NW | 5 | 2.2 | | 0 | 0 | | | 0.01 | 0.3 | Clear. | |
| Philadelphia, Pa. | 30.16 | 766.1 | 30.22 | 767.6 | 47 | 8.3 | 92 | E | 10 | 4.5 | | | 10s | | E | 0.05 | 1.3 | Cloudy | |
| Phœnix, Arizona | 28.75 | 730.2 | 30.52 | 775.2 | 61 | 16.1 | 31 | E | 3 | 1.3 | | 8cs | 0 | W | | 0 | 0 | Cloudy | |
| Pike's Peak, Colorado | 17.82 | 452.6 | 30.03 | 762.8 | 11 | —11.7 | 40 | NW | 24 | 10.7 | | 0 | 0 | | | 0.50 | 12.7 | Clear. | |
| Ploche, Nevada | 24.08 | 611.6 | 29.85 | 758.2 | 47 | 8.3 | 28 | W | 6 | 2.7 | | 2c | 0 | SW | | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 29.20 | 741.7 | 29.99 | 761.7 | 60 | 15.6 | 77 | Calm | 0 | 0 | | | Fog | | Calm | 0 | 0 | Foggy | |
| Port Huron, Michigan | 29.26 | 743.2 | 29.90 | 759.4 | 58 | 14.4 | 82 | SW | 12 | 5.4 | | | 10ks | | SW | 0.04 | 1.0 | Cloudy | |
| Portland, Maine | 30.18 | 766.6 | 30.23 | 767.8 | 47 | 8.3 | 70 | Calm | 0 | 0 | | 0 | Haze | | Calm | 0 | 0 | Clear. | |
| Portland, Oregon | 30.15 | 765.8 | 30.25 | 768.3 | 47.5 | 8.6 | 62 | N | 8 | 3.6 | | | 10s | | NW | 0.01 | 0.3 | Cloudy | |
| Prescott, Arizona | 24.76 | 628.9 | 30.12 | 765.0 | 44 | 6.7 | 45 | W | 2 | 0.9 | | 2c | 0 | Calm | | 0 | 0 | Fair | |
| Pilot Point, Texas | 28.93 | 734.8 | 29.75 | 755.6 | 50 | 10.0 | 93 | N | 3 | 1.3 | | 8k | 0 | NW | N | 0 | 0 | Cloudy | |
| Punta Rassa, Florida | 30.04 | 763 0 | 30.06 | 763.5 | 72 | 22.2 | 80 | SE | 19 | 8.5 | | 8cs | 0 | SW | | 0 | 0 | Fair | |
| Red Bluff, California | 29.66 | 753.4 | 30.02 | 762.5 | 54 | 12.2 | 80 | NW | 8 | 3.6 | | 1c | 0 | W | | 0 | 0 | Clear. | |
| Rio Grande City, Texas | 29.55 | 750.6 | 29.76 | 755.9 | 69 | 20.6 | 85 | SE | | | 1 | 0 | 0 | | | 0 | 0 | Clear. | |
| Rochester, New York | 29.40 | 746.7 | 30.00 | 762.0 | 63 | 17.2 | 72 | SW | 6 | 2.7 | | | 10s | | SW | 0.04 | 1.0 | Cloudy | |
| Roseburg, Oregon | 29.65 | 753.1 | 30.25 | 768.3 | 37.5 | 3.1 | 90 | Calm | 0 | 0 | | 5ck | 0 | NE | | 0 | 0 | Fair | |
| Sacramento, California | 29.92 | 760.0 | 30.01 | 762.2 | 53 | 11.7 | 86 | S | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear. | |
| St. Louis, Missouri | 29.34 | 745.2 | 29.90 | 759.4 | 62 | 16.7 | 88 | S | 1 | 0.4 | | 1ck | 8s | Calm | Calm | 0 | 0 | Fair | |
| St. Marks, Florida | 29.98 | 761.5 | 30.00 | 762.0 | 70 | 21.1 | 90 | SE | 14 | 6.3 | | 0 | 9n | | S | Inap | Inap. | Light rain | |
| St. Paul, Minnesota | 29.13 | 739.9 | 29.96 | 761.0 | 41 | 5.0 | 57 | W | 7 | 3.1 | | 0 | 5ks | | NW | 0 | 0 | Fair | |
| Salt Lake City, Utah | 25.69 | 652.5 | 30.02 | 762.5 | 46 | 7.8 | 40 | E | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear. | |
| San Antonio, Texas | 29.16 | 740.7 | 29.72 | 754.9 | 66 | 18.9 | 84 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear. | |
| San Diego, California | 29.98 | 761.5 | 30.06 | 763.5 | 55 | 12.8 | 87 | N | 4 | 1.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.31 | 744.5 | 29.96 | 761.0 | 65 | 18.3 | 68 | Calm | 0 | 0 | | 10k | 0 | Calm | | 0 | 0 | Cloudy | |
| Sandy Hook, New Jersey | 30.20 | 767.1 | 30.23 | 767.8 | 45 | 7.2 | 76 | SE | 12 | 5.4 | | 2cs | 8s | Calm | Calm | 0 | 0 | Cloudy | |
| San Francisco, California | 29.98 | 761 5 | 30.05 | 763.3 | 51.2 | 10.7 | 82 | SW | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear. | |
| Santa Fé, New Mexico | 23.34 | 592.8 | 29.88 | 758.9 | 42 | 5.6 | 34 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear. | |
| Savannah, Georgia | 30.00 | 762.0 | 30.09 | 764.3 | 69 | 20.6 | 85 | SW | 5 | 2.2 | | | 10n | | Calm | 0.90 | 22.9 | Heavy rain. | |
| Shreveport, Louisiana | 29.70 | 754.4 | 29.92 | 760.0 | 64 | 17.8 | 89 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear. | |
| Silver City, New Mexico | 24.33 | 618.0 | 30.57 | 776.5 | 42 | 5.6 | 42 | Calm | 0 | 0 | | 5c | 0 | Calm | | 0 | 0 | Fair | |
| Smithville, North Carolina | 30.16 | 766.1 | 30.19 | 766.8 | 67 | 19.4 | 89 | S | 3 | 2.7 | | 8cs | 0 | Calm | | 0 | 0 | Fair | |
| Springfield, Massachusetts | 30.12 | 765.0 | 30.26 | 768.6 | 45 | 7.2 | 84 | E | 2 | 0.9 | | | 10ks | | S | 0 | 0 | Cloudy | |
| Stockton, Texas | 26.94 | 684.3 | 29.94 | 760.5 | 64 | 17.8 | 21 | NW | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear. | |
| Thatcher's Island, Mass | 30.22 | 767.6 | 30.27 | 768.8 | 44 | 6.7 | 84 | SW | 7 | 3.1 | | | Fog | | | 0 | 0 | Foggy | |
| Toledo, Ohio | 29.27 | 743.4 | 29.93 | 760.2 | 64 | 17.8 | 78 | W | 7 | 3.1 | | | 10s | | Calm | Inap. | Inap. | Cloudy | |
| Tucson, Arizona | 27.52 | 699.0 | 30.07 | 763.8 | 54 | 12.2 | 37 | SE | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear. | |
| Umatilla, Oregon | 29.74 | 755.4 | 30.24 | 768.1 | 48.0 | 8.9 | 56 | SW | 20 | 8.9 | | | 10s | | W | 0 | 0 | Cloudy | |
| Unalashka, Aleutian Islands | | | | | 37 | 2.8 | 80 | W | | | 2 | | 10s | | SW | 0 | 0 | Cloudy | |
| Uvalde, Texas | 28.97 | 735.8 | 29.70 | 755.9 | 71 | 21.7 | 75 | E | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.74 | 755.4 | 30.00 | 762.0 | 59 | 15.0 | 97 | S | 1 | 0.4 | | | 10s | | Calm | 0.35 | 8.9 | Cloudy | |
| Virginia City, Montana | 24.24 | 615.7 | 29.72 | 754.9 | 33 | 0.6 | 51 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear. | |
| Visalia, California | 29.63 | 752.6 | 30.00 | 762.0 | 55.5 | 13.1 | 77 | E | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear. | |
| Washington, D. C. | 30.06 | 763.5 | 30.18 | 766.6 | 52 | 11.1 | 79 | NE | 5 | 2.2 | | | 10s | | | 0 | 0 | Cloudy | |
| Wickenburg, Arizona | | | | | 59 | 15.0 | 43 | NW | | | 1 | 2c | 0 | W | | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 30.09 | 764.3 | 30.16 | 766.1 | 69 | 20.6 | 70 | SE | 4 | 1.8 | | 8c | 0 | Calm | | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.68 | 652.3 | 30.04 | 763.0 | 37 | 2.8 | 45 | SE | 3 | 1.3 | | 2c | 0 | W | | 0 | 0 | Fair | |
| Wood's Holl, Mass | 30.24 | 768.1 | 30.28 | 769.1 | 48 | 8.9 | 70 | N | 1 | 0.4 | | Haze | 0 | | | 0 | 0 | Clear. | |
| Yankton, Dakota | 28'89 | 733.8 | 30.21 | 767.3 | 41 | 5.0 | 65 | NW | 10 | 4.5 | | | 10s | | NW | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.70 | 754.4 | 29.87 | 758.7 | 62 | 16.7 | 56 | W | 1 | 0.4 | | 6cs | 0 | Calm | | 0 | 0 | Fair | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark. | 28.38 | 720.8 | 29.75 | 755.6 | 61 | 16.1 | 77 | | | | | | | | | | | | J. B. Gordon. |
| Havana, Cuba, W. I. | 29.90 | 761.0 | 30.01 | 762.2 | 75 | 23.9 | 76 | Calm | 0 | 0 | | 8c | 0 | SW | | 0 | 0 | Cloudy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | | | | | | | | | | | | | | | | | | | James Gall. |
| Medellin, Colombia, S. A. | 26.27 | 641.6 | | | 63.5 | 17.5 | 95 | Calm | | | 0 | | 10n | | | 0.65 | 16.5 | | Thomas Herran. |
| Navassa, W. I. | 29.95 | 760.7 | 30.03 | 762.8 | 81 | 27.2 | | NE | | | | | | | | 0 | 0 | Fair | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.00 | 762.0 | 30.00 | 762.0 | 80 | 26.7 | 87 | E | | | 2 | | 10n | | | 1.800 | 45.72 | Raining | O. J. Hering. |
| Santiago de Cuba, W. I. | | | | | | | | | | | | | | | | | | | Robert Mason. |
| St. Thomas, W. I. | | | | | | | | | | | | | | | | | | | G. O. Gellich. |
| York Factory, B. A. | 29.96 | 761.0 | 30.01 | 762.2 | 30.0 | — 1.1 | 95 | NE | 8 | 3.6 | | 2c | 0 | NE | | 0 | 0 | Fair | J. Fortescue & W. Wood. |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.6 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.: Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761 4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m., Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6.896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.855 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.98 | 761.5 | 53 | 11.7 | 50 | 10.0 | 93 | SW | 15 | 6.7 | .... | ..... | 8 | ..... | SW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Pensacola, Fla. | 30.08 | 764.0 | 64 | 17.8 | 64 | 17.8 | 100 | NE | 3 | 1.3 | .... | ..... | 2 | ..... | NE | 0 | 0 | ..... | ..... | Fair..... | |
| Navy Yard, Portsmouth, N.H | 30.25 | 768.3 | 65 | 18.3 | 48 | 8.9 | 78 | S | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Pleasant..... | |
| Naval Hospital, Yokohama, Japan.....* | 30.17‡ | 766.3‡ | ..... | ..... | 56 | 13.3 | 84 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Adams, Panama .....* | 29.96 | 761.0 | 82 | 27.8 | 80 | 26.7 | 95 | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Alaska, N. 52° 51′, W. 128° 20′..... | 30.14‡ | 765.5‡ | ..... | ..... | 38 | 3.3 | 90 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.35 | 8.9 | Smooth | ..... | Misty..... | |
| Alliance, Palermo, Sicily..... | 29.90‡ | 759.4‡ | ..... | ..... | 78 | 22.8 | 35 | SW | ..... | .... | 5–6 | ..... | 8 | ..... | S;W | ..... | ..... | ..... | ..... | Pleasant..... | |
| Ashuelot, Hong-Kong, China. ..* | 29.95‡ | 760.7‡ | ..... | ..... | 72 | 22.2 | 80 | ENE | ..... | ..... | 1 | ..... | 1 | ..... | W | ..... | ..... | Smooth | ..... | Light haze.. | |
| Canonicus, New Orleans, La.....* | 29.95 | 760.7 | 49 | 9.4 | 66 | 18.9 | 100 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Colorado, New York, N. Y..... | 30.24 | 768.1 | 52 | 11.1 | 50 | 10.0 | 64 | ENE | 4 | 1.8 | ..... | ..... | 5 | ..... | NE | 0 | 0 | ..... | ..... | Pleasant..... | |
| Constitution N. 24° 02′, W. 36° 14′..... | 30.17‡ | 766.8‡ | ..... | ..... | 75 | 23.9 | 81 | ENE | ..... | ..... | 2 | ..... | 7? | ..... | Calm | ..... | ..... | Smooth | ..... | Clear?..... | |
| Despatch, Genoa, Italy..... | 29.69‡ | 754.1‡ | ..... | ..... | 55 | 12.8 | 87 | SW | ..... | ..... | 3 | ..... | 10 | ..... | W | ..... | ..... | Smooth | ..... | Rainy.. ..... | |
| Franklin, Norfolk, Va.....* | 30.27 | 768.8 | 69 | 20.6 | 68 | 20.0 | 79 | SW | 9.6 | 4.3 | ..... | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Clear..... | |
| Gettysburg, Genoa, Italy .....* | 29.69‡ | 754.1‡ | ..... | ..... | 53 | 11.7 | 100 | SSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.2 | 5. | Smooth | ..... | Overcast..... | |
| Hartford, Buenos Ayres, S. A.....* | 29.94 | 760.5 | 70 | 21.1 | 71 | 21.7 | 80 | NW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair..... | |
| Michigan, Erie, Pa.....† | 29.93‡ | 760.2‡ | ..... | ..... | 62 | 16.7 | 88 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Monocacy. Shanghai, China.....* | 29.97‡ | 761.2‡ | ..... | ..... | 53 | 11.7 | 86 | SE | ..... | ..... | 1 | ..... | 10 | ..... | SE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongahela Yokohama, Japan.....* | 30.12‡ | 765.0‡ | ..... | ..... | 62 | 16.7 | 83 | SSW | ..... | ..... | 1 | ..... | ck | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C.....* | 30.16 | 766.1 | 71 | 21.7 | 70 | 21.1 | 85 | SE | 12 | 5.4 | ..... | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Overcast..... | |
| Onward, Callao, Peru.....†* | 30.10 | 764.5 | ..... | ..... | 65 | 18.3 | 84 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | Long | NW | Fair ..... | |
| Palos. Shanghai, China.....* | 30.01 | 762.2 | 61 | 16.1 | 51 | 10.6 | 100 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | NW | ..... | ..... | ..... | ..... | Overcast..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 54 | 12.2 | 87 | NE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Pensacola. Callao, Peru..... | 29.98‡ | 761.5‡ | ..... | ..... | 64 | 17.8 | 89 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Hazy..... | |
| Plymouth. Portsmouth, N. H..... | 30.21‡ | 767.3‡ | ..... | ..... | 45 | 7.2 | 84 | SSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Foggy ..... | |
| Portsmouth, Hampton Roads, Va..... | 30.16‡ | 766.1‡ | ..... | ..... | 63 | 17.2 | 83 | WSW | ..... | ..... | 2 | ..... | 2 | ..... | SW | 0 | 0 | Smooth | ..... | Clear..... | |
| Powhatan, Norfolk, Va..... | 30.12‡ | 765.0‡ | ..... | ..... | 68 | 20.0 | 74 | WSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Quinnebaug, Tunis, Africa ..... | 29.86‡ | 758.4‡ | ..... | ..... | 76 | 24.4 | 47 | W | ..... | ..... | 2 | ..... | 5 | ..... | W | ..... | ..... | ..... | ..... | Fair..... | |
| Ranger. Amoy, China.....* | 29.89‡ | 759.2‡ | ..... | ..... | 69 | 20.6 | 85 | SSE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Richmond. N. 2° 50′, E. 101° 05′..... | 29.81‡ | 757.2‡ | ..... | ..... | 84 | 28 9 | 83 | ENE | ..... | ..... | 1 | ..... | 5 | ..... | ENE | 2.0 | 5.1 | Smooth | ENE | Fair..... | |
| Rio Bravo, Brownsville, Texas..... | 29.86 | 758.4 | 72 | 22.2 | 73 | 22.8 | 100 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Santee, Annapolis, Md..... | 30.15‡ | 765.8‡ | ..... | ..... | 50 | 10.0 | 86 | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy.. ..... | |
| Saratoga, Horta Bay, Fayal, Azores. | 30.20‡ | 767.1‡ | ..... | ..... | 69 | 20.6 | 85 | SSW | ..... | ..... | 4 | ..... | 5 | ..... | NE | 0 | 0 | Mod'ate | SSE | D. clouds..... | |
| St. Louis, League Island, Pa..... | 30.13 | 765.3 | 63 | 17.2 | 55 | 12.8 | 87 | ESE | 8 | 3.6 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Misty..... | |
| Trenton Villafranca, France..* | 29.73‡ | 755.1‡ | ..... | ..... | 63 | 17.2 | 83 | SW | ..... | ..... | 1 | ..... | 10 | ..... | SW | 0 | 0 | Mod'ate | S | Cloudy..... | |
| Tuscarora, Chipequa Bay, Mexico.* | 29.87‡ | 758.7‡ | ..... | ..... | 78 | 25.6 | 73 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Long | NW | Hazy..... | |
| Vandalia, N. 18° 10′, W. 74° 54′..... | 30.03‡ | 762.8‡ | ..... | ..... | 80 | 26.7 | 82 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear ..... | |
| Wabash, Boston, Mass..... | 30.28‡ | 769.1‡ | ..... | ..... | 48 | 8.9 | 92 | W | 1 | 0.4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Hazy..... | |
| Wyoming, Athens, Greece.....* | 30.06‡ | 763.5‡ | ..... | ..... | 66 | 18.9 | 89 | SSE | ..... | ..... | 1–2 | ..... | 2 | ..... | S | ..... | ..... | Smooth | S | Clear..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **CUNARD LINE MARINE SERIES.** Furnished by the co-operation of Ch. G. Francklyn, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Samaria, Capt. T. Roberts, N. 49° 04′, W. 29° 07′....† | | | 29.86 | 758.4 | 53 | 11.7 | | E | | 4 | | | | SE | | Mod'ate | ESE | Cloudy | M. C. Miles. |
| NOTE.—†Aneroid. | | | | | | | | | | | | | | | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | |
| §S. S. City of Tokio Capt. Maury Yokohama, Japan | | | 30.16‡ | 766.1‡ | | | | SE | | 3 | | 6ck | | | 0 | Smooth | | Blue sky | L. B. Walls. |
| S. S. Colima. N. 37° 00′, W. 122° 21′..† | | | 30.04‡ | 763.0‡ | 55 | 12.8 | | NW | | 4 | | 7 | | SSE | 0 | Mod'ate | NW | Misty | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota, Capt. H. G. Morse, | | | | | | | | | | | | | | | | | | | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly |
| S. S. Granada, Capt. Austin. | | | | | | | | | | | | | | | | | | | F. W. Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, Sydney, N. S. W. | | | 30.24‡ | 768.1‡ | | | | W | | 1 | | 0 | | | | | | Fine | R. C. Ghest, 1st Officer. |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office. §The date of the S. S. City of Tokio is uncertain, and may be in error one day. | | | | | | | | | | | | | | | | | | | |
| **WHITE STAR LINE MARINE SERIES.** Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |
| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, Capt. L. Meyer. N. 33° 26′, W. 162° 51′ | | | 30.32‡ | 770.1‡ | 54 | 12.2 | 80 | NNE | | 6 | | ks | | | 0 | Mod'ate | NNE | Squally | D. A. Joyce. |
| S. S. Gaelic, | | | | | | | | | | | | | | | | | | | Capt. W. H. Kidley. |
| S. S. Oceanic, Capt. J. Metcalf, | | | | | | | | | | | | | | | | | | | J. G. Cameron. |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to distin 12; no ction between upper and lower clouds. The position given for the S. S. Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |
| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** Furnished by the co-operation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 52° 40′, E. 3° 26′ | | | 29.74‡ | 755.4‡ | 53.0 | 11.7 | 73 | E | | 1 | | 5 | | | 2 h'rs | Smooth | E | Hazy | Capt. C. Undütsch. |
| S. S. Leipzig, | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 47° 17′, W. 25° 40′ | | | 30.11‡ | 764.8‡ | | | | SE | | 2 | | 10 | | NW | | Rough | NW | Cloudy | Capt. G. Meyer. |
| NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Corrections for temperature instrumental error and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |

## UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

| NAMES OF VESSELS. | True course toward. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | L'w'r | Upper. | Lower. | | | | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | Character. | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Liverpool, Eng | | 29.82‡ | 757.4‡ | 67 | 13.9 | | E | | | 5 | | 8 | | E | Mod'ate | | | Cloudy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
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| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
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| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | J. Powell, 4th Officer. |
| S. S. Peruvian | | | | | | | | | | | | | | | | | | | |
| **MARINE SERIES. (Miscellaneous.)** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller, Off Cape Poge, Mass., N. 41°25' W. 70°27' | | 30.26‡ | 768.6‡ | 50 | 10.0 | 65 | Calm | 0 | 0 | | | 2c | | Calm | 0 | Smooth | | Clear | Capt. James Jorgensen. |
| Brigantine "George of Halifax" | | | | | | | | | | | | | | | | | | | Willard N. Pratt. |
| Schooner Harry and Fred, N. 29° 24', W. 69° 20' | | 30.19‡ | 766.8‡ | | | | NNW | 5 | 2.2 | | | 0 | | | | Long | NE | Clear | Capt. George Gardner. |
| | | | | | | | | | | | | | | | | | | | |
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Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for the Pennsylvania, the cloud-direction as toward instead of from; sea-swell in general terms, as published; rain-fall for the Indiana and Ohio in general terms. ‡Corrections for temperature, instrumental error and elevation applied at this office.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office.

Note.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Corrections for temperature, instrumental error and elevation applied at this office.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively by the letters c, k, s, n, d, f, p, hz., fg. and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$.) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 28, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instru-m'tal error and temperature. Inches. | Barometer. Corrected for instru-m'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 30.11 | 764.7 | 69.3 | 20.7 | 82 | Calm | | | 0 | | 0 | | | 0 | 0 | Clear | Kesxuche. |
| Algiers | | | 29.95 | 760.6 | 65.5 | 18.6 | 62 | WNW | | | 6 | | 10 | | | Inap. | Inap. | Covered | Touriliere. |
| La Calle | | | 29.88 | 759.0 | 64.2 | 17.9 | 82 | NNW | | | 3 | | 10 | | | 0.008 | 0.2 | Covered | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 29.94 | 760.5 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 30.06 | 763.6 | 68.4 | 20.2 | 21 | W | | | 5 | | 0 | | | 0 | 0 | Clear | Herbin. |
| Tebessa | | | 29.95 | 760.8 | 68.7 | 20.4 | 31 | W | | | 6 | | 10 | | | 0 | 0 | Covered | Watrin. |
| Geriville | | | 29.99 | 761.8 | 68.7 | 20.4 | 8 | NNW | | | 6 | | 2 | | | 0 | 0 | Fair | Brugniaux. |
| Laghouat | | | 30.01 | 762.3 | 75.6 | 24.2 | 57 | SE | | | 3 | | 0 | | | 0 | 0 | Clear | Bertrand. |
| Biskra | | | 29.93 | 760.1 | 82.9 | 28.3 | 17 | NW | | | 4 | | 2 | | | 0 | 0 | Fair | Chanvaux. |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

## AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instru-m'tal error and temperature. Inches. | Barometer. Corrected for instru-m'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 28.94 | 735.1 | 29.48 | 748.8 | 55.4 | 13.0 | 86 | Calm | | | 0 | | 10 | | | 0.366 | 9.3 | Raining | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 28.91 | 734.2 | 29.66 | 753.4 | 55.0 | 12.8 | 64 | NNW | | | 1 | | 10 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 28.72 | 729.6 | 29.58 | 751.2 | 63.7 | 17.6 | 63 | S | | | 2 | | 8cks | | N | 0.018 | 0.45 | | Julius Mikolik. |
| Gratz | 28.32 | 719.4 | 29.56 | 750.9 | 51.3 | 10.7 | 83 | E | | | 3 | | 10 | | | 0.937 | 23.8 | | Andreas Rospini. |
| Hermannstadt | 28.29 | 718.5 | 29.67 | 753.6 | 65.3 | 18.5 | 44 | S | | | 4 | | 10 | | | 0.248 | 6.30 | | Prof. A. Gottschling. |
| Kremsmünster | 28.23 | 717.1 | 29.56 | 750.7 | 52.7 | 11.5 | 77 | ENE | | | 3 | | 8 | | | 0 | 0 | | Prof. C. Wagner. |
| Lemberg | 28.64 | 727.5 | 29.60 | 751.9 | 61.5 | 16.4 | 52 | SW | | | 1 | | 4 | | | 0.063 | 1.6 | | Dr. T. Stanecki. |
| Pola | 29.46 | 748.2 | 29.87 | 761.0 | 57.2 | 14.0 | 69 | WSW | | | 4 | | 6 | | | 0.591 | 15.0 | | I.R. Hydrographic Office |
| Szathmar | 29 21 | 742.0 | 29.67 | 753.5 | 61.2 | 16.2 | 75 | S | | | 3 | | 10 | | | 0.035 | 0.9 | | Julius Csics, S. J. |
| Szegedin | 29.28 | 743.8 | 29.56 | 750.8 | 57.0 | 13.9 | 86 | Calm | | | 0 | | 10 | | | 0.362 | 9.20 | | Karl Stancel. |
| Trieste | 29.47 | 748.4 | 29.67 | 751.0 | 63.2 | 11.8 | 84 | ENE | | | 1 | | 10 | | | 0.520 | 13.2 | Raining | P. Busin. |
| Vienna | 28.87 | 733.3 | 29.58 | 751.2 | 56.5 | 13.6 | 67 | E | | | 1 | | 9 | | | 0.146 | 3.7 | | I. R. Central Met. Obs'y |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

## BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instru-m'tal error and temperature. Inches. | Barometer. Corrected for instru-m'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 29.61 | 752.0 | 29.81 | 757.1 | 56.8 | 13.8 | 60 | NNE | | | 2 | | 7 | | NE | 0 | 0 | | Royal Observatory. |
| Furnes | 29.89 | 759.1 | 29.91 | 759.7 | 51.6 | 10.9 | 80 | E | | | 4 | | 8 | | | 0 | 0 | | M. E. de Cae. |
| Maeseyck | 29.65 | 753.1 | 29.78 | 756.3 | 55.6 | 13.1 | 67 | NE | | | 4 | | 2 | | | 0 | 0 | | M. Pierrot. |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

**Entered at the Post Office at Washington, D. C., as Second-Class Matter.**

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Upper. 0–10. | Clouds. Amount. Low'r. 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.16 | 766.1 | 30.26 | 768.6 | 42.0 | 5.6 | ..... | E | 14 | 6.3 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | D. clouds | W. Boswell. |
| Ardrossan | 30.17 | 766.3 | 30.19 | 766.8 | 54 | 12.2 | ..... | E | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.23 | 767.8 | 49.3 | 9.6 | ..... | NNE | 10 | 4.5 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 30.12 | 765.0 | 45.8 | 7.7 | ..... | NE | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 30.12 | 765.0 | 47.8 | 8.8 | ..... | NE | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Squally | Thomas Mackereth. |
| Bradford, Yorkshire | 29.70 | 754.4 | 30.10 | 764.5 | 48.1 | 8.9 | ..... | E | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0.02 | 0.5 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.94 | 760.5 | 29.98 | 761.5 | 84 | 28.9 | ..... | NE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 30.61 | 762.2 | 51.5 | 10.8 | ..... | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds | H. Todd. [C. |
| Cardington | ..... | ..... | 30.03 | 762.8 | 47.0 | 8.3 | ..... | N | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.84 | 757.9 | 29.98 | 761.5 | 48.5 | 9.2 | ..... | NE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.52 | 724.4 | 30.00 | 762.0 | 48.0 | 8.9 | ..... | N | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy | Alexander Watt. |
| Donaghadee | 30.17 | 766.3 | 30.21 | 767.3 | 50 | 10.0 | ..... | NNE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 29.92 | 760.0 | 29.94 | 760.5 | 48 | 8.9 | ..... | NNE | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy | J. Costello. |
| Falmouth, Observatory | 29.86 | 758.4 | 30.10 | 764.5 | 51.3 | 10.7 | ..... | NNW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Foggy | The Staff. |
| Fort Napier, (Natal) | 27.72 | 704.1 | 30.03 | 762.8 | 66.8 | 19.3 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.61 | 752.1 | 29.84 | 757.9 | 88 | 31.1 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's college | ..... | ..... | ..... | ..... | 53 | 11.7 | ..... | N | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 30.02 | 762.5 | 30.08 | 764.0 | 64.7 | 18.2 | ..... | W | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 30.00 | 762.0 | 30.20 | 767.1 | 48.9 | 9.4 | ..... | NE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | D. G. Maclean. [C. |
| Great Yarmouth | 29.99 | 761.7 | 30.00 | 762.0 | 45 | 7.2 | ..... | NNE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.81 | 757.2 | 29.98 | 761.5 | 50.9 | 10.5 | ..... | NNE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The staff, for G.B. Airy. |
| Guernsey | 29.79 | 756.7 | 30.01 | 762.2 | 47 | 8.3 | ..... | NNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | Dr. S.E.Hoskins, F.R.S. |
| Helston | 30.22? | 767.6? | 30.34? | 770.6? | 52 | 11.1 | ..... | N | ..... | ..... | 2 | ..... | 4k | ..... | ..... | 0 | 0 | Fine | M. P. Moyle. |
| Holyhead | 30.12 | 765.0 | 30.15 | 765.8 | 49 | 9.4 | ..... | NE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | John Tilston. |
| Jersey | 29.75 | 755.6 | 30.05 | 763.3 | 46.0 | 7.8 | ..... | NNE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | J. Fisher. |
| Kew, Observatory | 29.95 | 760.7 | 29.99 | 761.7 | 50.5 | 10.3 | ..... | N | 22 | 9.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | The Meteorological Of. |
| Leicester, Museum | 29.81 | 757.2 | 30.08 | 764.0 | 45.5 | 7.5 | ..... | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.73 | 755.1 | 29.80 | 756.9 | 67 | 19.4 | ..... | NW | ..... | ..... | 3 | ..... | 3k | ..... | ..... | ..... | ..... | Blue sky | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 30.16 | 766.1 | 30.25 | 768.3 | 49 | 9.4 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 30.06 | 763.5 | 77.0 | 25.0 | ..... | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.89 | 759.2 | 30.08 | 764.0 | 48.4 | 9.1 | ..... | NE | ..... | ..... | 3 | ..... | 10k;d | ..... | NE | 0 | 0 | Overcast | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.54 | 750.3 | 30.08 | 764.0 | 45.2 | 7.3 | ..... | NNE | ..... | ..... | 2-3 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.03 | 762.8 | 47 | 8.3 | ..... | N | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Squally | H. E. Bellamy. |
| Plymouth | 29.96 | 761.0 | 30.04 | 763.0 | 51.8 | 11.0 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Merrifield. |
| Roche's Point | 30.12 | 765.0 | 30.20 | 767.1 | 51 | 10.6 | ..... | NNE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded | Wm. Kennedy. |
| Saint Ann's Head | 29.94 | 760.5 | 30.11 | 764.8 | 48 | 8.9 | ..... | N | ..... | ..... | 5 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 43 | 6.1 | ..... | NW | 20 | 8.9 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Hailing | Rev C.Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.87 | 758.7 | 29.93 | 760.2 | 72.6 | 22.6 | ..... | S | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | W. H. Lyne. |
| Sheffield | 29.82 | 757.4 | 30.11 | 764.8 | 48.1 | 8.9 | ..... | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Inap. | Inap. | Overcast | W. F. Cooper. |
| Silloth Rectory | 30.13 | 765.3 | 30.16 | 766.1 | 55.5 | 13.1 | 48 | E | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | D. clouds | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.72 | 754.9 | 30.13 | 765.3 | 50.1 | 10.1 | ..... | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Rev. S. J. Perry. |
| Stratfield, Turgiss | 29.78 | 756.4 | 30.00 | 762.0 | 51.1 | 10.6 | ..... | N | ..... | ..... | 3-4 | ..... | 8 | ..... | ..... | ..... | ..... | Squally | C. H. Griffith, F. M. S. |
| Truro, Royal Institution | 30.07 | 763.8 | 30.10 | 764.5 | 57 | 13.9 | ..... | N | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | W. Newcombe. |
| Valencia, Observatory | 30.22 | 767.6 | 30.25 | 768.3 | 53.5 | 11.9 | ..... | N | 13 | 5.8 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.07 | 763.8 | 30.11 | 764.8 | 84.4 | 29.1 | 28 | S | 21 | 9.4 | ..... | 0 | 1 | ..... | ..... | 0 | 0 | Fine | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.58 | 751.3 | 69 | 20.6 | 56 | N | ..... | ..... | 5 | ..... | 10k | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 30.26 | 768.6 | 46.1 | 7.8 | ..... | E | ..... | ..... | 2 | ..... | 4k | ..... | ..... | 0 | 0 | Fine | Andrew Gibb. |
| Mauritius, Observatory | 29.84 | 757.9 | 30.03 | 762.8 | 78.0 | 25.6 | 67 | ESE | 14.5 | 6.5 | ..... | ..... | 2 | ..... | ESE | 0 | 0 | Fine | C. Meldrum. |
| Melbourne, Observatory | 29.57 | 751.1 | 29.66 | 753.3 | 61.8 | 16.6 | 86 | N | 15 | 6.7 | ..... | ..... | 10 | ..... | ..... | 0.51 | 13.0 | Heavy showers | R. L. J. Ellery. |
| Monach Lt-house, (Hebrides) | ..... | ..... | 30.32 | 770.1 | 44 | 6.7 | ..... | N | ..... | ..... | 4 | 3 | 3 | N | ..... | 0 | 0 | ..... | J. Youngehause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.07 | 763.8 | 43 | 6.1 | ..... | N | ..... | ..... | 4 | 0 | 5 | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Upper. 0–10. | Clouds. Amount. Low'r. 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 44', E. 29° 28' | ..... | ..... | 29.98‡ | 761.5‡ | 70 | 21.1 | ..... | W | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Capt. W. J. L. Wharton. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle-Isle | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. J. Brown. |
| Ship British Commodore, N. 37° 45', W. 67° 25' | ..... | ..... | 30.24 | 768.1 | 65 | 18.3 | ..... | E | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 2 | E | D. clouds | Capt. J. W. Thorne. |
| —— City of Agra | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. McMontry. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have generally been carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instru'tal error and temperature. Inches. | Millimeters. | Reduced to sea-level. Inches. | Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | Velocity Miles per hour. | Meters per second. | Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | Low'r 0—10. | Direction. Upper. From— | Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | Millimeters. | WEATHER. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.26 | 667.0 | 29.98 | 761.5 | 68.9 | 20.5 | 95 | Calm | ..... | ..... | 0 | 9ks | ..... | ..... | ..... | Inap | Inap. | ..... | Federico Maison |

NOTE.—For St. Jose the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches for an altitude of 1,145 meters, or 3,756.6 feet; the distinction between the upper and lower clouds is not always made; the rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.64 | 758.0 | 29.89 | 759.2 | 45.9 | 7.7 | 47 | N | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 29.93 | 760.3 | 29.95 | 760.8 | 50.5 | 10.3 | 29 | NE | ..... | ..... | 6 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 30.15 | 765.9 | 30.20 | 767.0 | 36.7 | 2.6 | 77 | SSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 30.28 | 769.1 | 30.32 | 770.0 | 41.0 | 5.0 | 52 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.86 | 758.4 | 30.03 | 762.7 | 48.6 | 9.2 | 86 | NE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.43 | 747.6 | 29.98 | 761.6 | 47.8 | 8.8 | 78 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.094 | 2.4 | Covered | Collignon, Director. |
| Amiens, Normal School | 29.85 | 758.1 | 29.96 | 760.9 | 57.2 | 14.0 | 80 | NNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bonvallet, Director. |
| Avignon, Normal School | 29.58 | 751.4 | 29.66 | 753.4 | 64.0 | 17.8 | 56 | N | ..... | ..... | 2 | ..... | 2 | ..... | N | 0 | 0 | Clear | Giraud, Director |
| Bar-sur-Seine | 29.20 | 741.6 | 29.74 | 755.5 | 56.1 | 13.4 | 68 | NE | ..... | ..... | 1 | ..... | 8kn | ..... | NE | Inap. | Inap. | Very cloudy | G. Saillard, Director. |
| Beauvais, Normal School | 29.62 | 752.4 | 29.89 | 759.2 | 49.3 | 9.6 | 77 | NW | ..... | ..... | ..... | ..... | 10 | ..... | NNW | 0.059 | 1.50 | Covered | Frere Eugene Marie, Dr |
| Besançon, Normal School | 28.82 | 732.0 | 29.70 | 754.4 | 58.1 | 14.5 | 59 | NE | ..... | ..... | 2 | ..... | 2 | ..... | NE | ..... | ..... | Slightly cld'y | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 28.86 | 733.0 | 29.77 | 756.1 | 57.7 | 14.3 | 69 | N | ..... | ..... | 3 | ..... | k | N | N | 0.08 | 2. | ..... | Marlot, Director |
| Bourges, Normal School | 29.28 | 743.7 | 29.83 | 757.7 | 55.0 | 12.8 | 86 | NNW | ..... | ..... | 3 | ..... | 10kn | W | NNW | 0.87 | 22. | Raining | A. Waquet, Director. |
| Brest, Naval Observatory | 29.78 | 756.3 | 30.02 | 762.5 | 55.4 | 13.0 | 66 | N | ..... | ..... | 3 | ..... | 7 | ..... | N | 0.020 | 0.50 | ..... | De Kermaree, Director |
| Carcassonne, Normal School | 29.41 | 747.0 | 29.83 | 757.6 | 61.3 | 10.7 | 90 | W | ..... | ..... | 4 | ..... | 10 | W | W | 0.335 | 8.5 | Covered | September, Director. |
| Caen, Normal School | 29.89 | 759.1 | 29.92 | 760.0 | 46.4 | 8 | 77 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Lair, Director. |
| Chartres, Normal School | 29.37 | 745.9 | 29.94 | 760.5 | 49.1 | 9.5 | 91 | NW | ..... | ..... | 3 | ..... | 10 | ..... | SE | 0.047 | 1.2 | Covered | Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.50 | 749.2 | 29.81 | 757.2 | 52.9 | 11.6 | 86 | NW | ..... | ..... | 4 | ..... | 10 | N | N | 0 | 0 | Covered | Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.39 | 721.1 | 29.73 | 755.2 | 54.3 | 12.4 | 59 | NW | ..... | ..... | 2 | ..... | 10 | ..... | NW | 0.087 | 2.2 | Raining | Alluard, Director. |
| Commercy, Normal School | 28.87 | 733.4 | 29.74 | 755.3 | 54.1 | 12.3 | 67 | NW | ..... | ..... | 1 | ..... | 5kn | ..... | NW | 0.287 | 7.3 | Cloudy | Dr. Coulet, Director. |
| Commune de Grésque* | 28.52 | 724.3 | 29.66 | 753.3 | 56.7 | 13.7 | 47 | NW | ..... | ..... | 4 | ..... | 5 | ..... | NW | 0.087 | 2.2 | ½ covered | L. Kina, Director. |
| Grenoble, Normal School | 28.93 | 734.8 | 29.69 | 754.1 | 55.0 | 12.8 | 59 | NW | ..... | ..... | 2 | ..... | k | ..... | NE | 0 | 0 | ..... | Ablard, Director |
| La Roche-sur-Yon, N. School | 29.72 | 755.0 | 29.94 | 760.5 | 59.4 | 15.2 | 73 | N | ..... | ..... | 1 | ..... | 8 | ..... | N | 0.205 | 5.2 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.63 | 752.7 | 29.94 | 760.5 | 52.9 | 11.6 | 71 | N | ..... | ..... | 4 | ..... | 8 | ..... | NE | 0.010 | 0.25 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 28.70 | 729.0 | 29.61 | 752.2 | 57.4 | 14.1 | 50 | NE | ..... | ..... | 2 | ..... | 2ck | ..... | N | 0.063 | 1.60 | Slightly cl'dy | A. Baudry, Director. |
| Lorient, Naval Observatory | 29.98 | 761.5 | 30.08 | 764.0 | 56.8 | 13.8 | 60 | N | ..... | ..... | 2 | ..... | ..... | SW | N | 0.197 | 5.0 | ..... | Lt T. Carré, Director |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Galzin, Director. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff. |
| Mirecourt, Normal School | 28.67 | 728.2 | 29.69 | 754.2 | 55.9 | 13.3 | 55 | NW | ..... | ..... | 3 | ..... | 2 | ..... | SE | 0.535 | 13.6 | Slightly cl'dy | Barbier, Director. |
| Nismes, Normal School | 29.44 | 747.8 | 29.64 | 752.9 | 55.8 | 13.8 | 45 | N | ..... | ..... | 4 | ..... | 5 | ..... | N | 0 | 0 | Cloudy | Boyer, Director. |
| Privas, Normal School | 28.69 | 728.6 | 29.76 | 755.9 | 47.5 | 8.6 | 86 | N | ..... | ..... | 4 | ..... | 10 | N | N | ..... | ..... | Light rain | Cantier, Director. |
| Puy de Dome (Summit) Obs | 24.89 | 632.1 | ..... | ..... | 31.5 | — 0.3 | 100 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.390 | 9.9 | Snow-fog | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.89 | 759.2 | 29.92 | 760.0 | 61.9 | 16.6 | 70 | NW | ..... | ..... | 1 | ..... | 5 | NW | NW | 0.12 | 3. | ¾ covered | Lt. E. Decante, Director. |
| Rouen, Normal School | 29.85 | 758.3 | 29.94 | 760.5 | 46.9 | 8.3 | 81 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | N | 0.114 | 2.9 | Covered | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 29.98 | 761.6 | 30.02 | 762.4 | 48.4 | 9.1 | 81 | N | ..... | ..... | 2 | ..... | 8 | N | N | 0 | 0 | Very cloudy | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 29.71 | 754.5 | 29.87 | 758.7 | 49.3 | 9.6 | 82 | N | ..... | ..... | 2 | ..... | ..... | ..... | N | 0.043 | 1.1 | ..... | E. Renou, Director. |
| Tarbes, Normal School | 28.97 | 735.7 | 30.08 | 764.0 | 41.0 | 5 | 84 | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | T. Huguet, Director. |
| Toulouse, Observatory | 29.17 | 740.8 | 29.89 | 759.1 | 50.0 | 10.0 | 95 | WNW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0.417 | 10.6 | Rainy | Mercadier Julier. |
| Versailles Observatory | 29.39 | 746.4 | 29.88 | 758.9 | 47.1 | 8.4 | 83 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.200 | 5.08 | Raining | Dr. A. Berigny, Director |
| Villefranche-sur-Saone, N.S. | 28.97 | 735.9 | 29.68 | 753.9 | 54.1 | 12.3 | 90 | NNW | ..... | ..... | 3 | ..... | 5 | NW | N | 0.102 | 2.60 | Cloudy | Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.84 | 757.8 | 29.86 | 758.5 | 79.5 | 26.4 | .. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.16 | 4. | ..... | L'Abbé Marchésl. |
| Lyons Obs'y, (Park Station) | 29.07 | 738.6 | 29.68 | 753.9 | 57.4 | 14.1 | 56 | NNW | ..... | ..... | 2 | ..... | 7 | ..... | N | 0.197 | 5.0 | Very cloudy | Mr. Jays. |
| Mont-Louis | 24.55 | 623.5 | 29.86 | 758.5 | 41.0 | 5.0 | 50 | NW | 31.8 | 14.2 | ..... | ..... | 7 | ..... | WNW | 0 | 0 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.58 | 751.2 | 60.8 | 16.0 | 67 | ESE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Rainy | Dr. A. Nieper, Jr. |
| Paris, Montsouris Obs'y | 29.59 | 751.6 | ..... | ..... | 47.8 | 8.5 | 93 | NNW | ..... | ..... | 3 | ..... | 10 | ..... | N | 0.071 | 1.8 | Sprinkling | Marié Davy, Director. |
| Perpignan | 29.68 | 753.8 | 29.78 | 756.5 | 56.8 | 13.8 | 47 | NW | 37.4 | 16.7 | ..... | ..... | 5 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.30 | 566.3 | ..... | ..... | 32.5 | 0.3 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.170 | 4.31 | Snowy | Gen'l de Nansouty. |
| Tours | 29.69 | 754.1 | 29.89 | 759.1 | 56.5 | 13.6 | 61 | NNE | ..... | ..... | 3 | ..... | 7 | ..... | N | 0.024 | 0.6 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 29.95 | 760.8 | 29.98 | 761.4 | 54.0 | 12.2 | 98 | ESE | 11.2 | 5.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand, Nice and Greasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p. m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome—(Summit) 1.467 m.. or 4,813.1 ft.; Tarbes, 308 m., or 1.010.5 ft.; Mont-Louis, 1,686.40 m., or 5,204.5 ft.; Pic du Midi—(Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi. (Plantade) 2,369 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185.0 millimeters, or 5 315 inches has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.89 | 733.9 | 29.73 | 755.1 | 52.0 | 11.1 | 44 | NE | | | 8 | | 1 | N | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.69 | 754.1 | 29.87 | 758.6 | 42.8 | 6.0 | 74 | NE | | | 2 | | 10 | | | 0.031 | 0.8 | Raining | Prof. Arndt. |
| Breslau | 29.24 | 742.7 | 29.77 | 756.1 | 41.0 | 5.0 | 70 | NNW | | | 3 | | 10 | NW | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.26 | 743.2 | 29.68 | 753.9 | 57.6 | 14.2 | 55 | N | | | 2 | | 10 | N | | 0.122 | 3.1 | Thunder-storm. | Albert Senz. |
| Cassel | 29.20 | 741.7 | 29.80 | 757.0 | 55.0 | 12.8 | 42 | NNE | | | 3 | | 5 | NNE | | 0.089 | 2.26 | Raining | Dr. H. Möhl. |
| Crefeld | 29.62 | 752.3 | 29.78 | 756.4 | 58.3 | 14.6 | 43 | E | | | 3 | | 7k | | | 0.12 | 3. | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.38 | 746.2 | 29.74 | 755.5 | 57.2 | 14.0 | | NNE | | | 3 | | 3 | | | 0 | 0 | | Physical Society. |
| Freienwalde on the Oder | 29.79 | 756.6 | 29.83 | 757.6 | 37.9 | 3.3 | 95 | NNW | | | 4 | | 10ks | NNW | | 0.043 | 1.1 | Raining | Assmann., M. D. |
| Friedrichshafen | 28.24 | 717.4 | 29.68 | 753.9 | 47.8 | 8.8 | 84 | S | | | 5 | | 10 | ENE | | 0.472 | 12.0 | Raining | M. Wilhelm. |
| Hamburg | 29.82 | 757.5 | 29.89 | 759.3 | 48.2 | 9.0 | 39 | NNE | | | 3 | | 9cs | | | 0 | 0 | Fair | Captain F. Hegeman. |
| Kiel | 29.91 | 759.7 | 29.93 | 760.1 | 45.5 | 7.5 | 59 | NNE | | | 3 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.62 | 752.4 | 29.70 | 754.5 | 43.7 | 6.3 | 92 | N | | | 3 | | 8 | | | 0.035 | 0.9 | | Prof. E. Luther. |
| Köslin | | | 29.74 | 755.4 | 35.6 | 2.0 | | N | | | 4 | | 4 | | | 0.850 | 21.6 | | H. Müller. |
| Leipsic, Observatory | 29.41 | 747.0 | 29.84 | 757.8 | 46.8 | 8.2 | 60 | NNE | | | 2 | | 8 | N | | 0 | 0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.64 | 752.9 | 29.69 | 754.1 | 37.6 | 3.1 | 91 | NNE | | | 3 | | 10n | | | | | Heavy rain | Skalweit. |
| Neufahrwasser | 29.73 | 755.2 | 29.75 | 755.6 | 37.8 | 3.2 | 97 | NNE | | | 2 | | 10 | | | 0.098 | 2.5 | Fog & rain | A. Lothes. |
| Posen | 29.46 | 748.3 | 29.76 | 755.8 | 38.3 | 3.5 | 98 | NW | | | 5 | | 10 | | | 0.461 | 11.7 | Snowing | Dr. Magener. |
| Strassburg (in Alsace) | 29.16 | 740.6 | 29.70 | 754.3 | 58.6 | 14.8 | 57 | N | | | 3 | | 8 | N | | 0.024 | 0.61 | Thunder-storm | Imp. University Observatory. |
| Stuttgart | 28.72 | 729.6 | 29.65 | 753.2 | 55.0 | 12.8 | 68 | N | | | 1 | | 8 | N | | 0.075 | 1.9 | Rainy | Prof. Schoder. |
| Treves (Trier) | 29.17 | 741.0 | 29.69 | 754.1 | 60.1 | 15.6 | 51 | N | | | 4 | | 8 | | | 0.018 | 0.47 | | Prof. Flesch. |
| Weissenburg (Bavaria) | 28.15 | 714.9 | 29.63 | 752.5 | 55.9 | 13.3 | 45 | N | 11 | 5 | | | 8ck | | N | 0 | 0 | Hazy | Dr. Van Bebber. |
| Wustrow, Naval School | 29.88 | 758.9 | 29.90 | 759.5 | 42.8 | 6.0 | 66 | NE | | | 3 | | 10s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.62 | 752.3 | 30.00 | 762.0 | 69.1 | 20.6 | | S | | | 3.5 | | | | | | | ⅛ Clear | Dr. J. F. J. Schmidt. |

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the cooperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.69 | 754.2 | 29.74 | 755.4 | 85.7 | 29.8 | 63 | SSW | | | | 0 | | | | 0 | 0 | Blue sky | |
| Deesa | | | | | 100.3 | 37.9 | 11 | WSW | 6.9 | 3.1 | | 8 | SW | | | 0 | 0 | D. clouds | |
| Bombay | 29.71 | 754.6 | 29.74 | 755.5 | 83.5 | 28.6 | 81 | WNW | 18 | 8.0 | | 0 | | | | 0 | 0 | Blue sky | |
| Poona | 27.77 | 705.4 | 29.71 | 754.5 | 95.1 | 35.1 | 35 | WNW | | | | 4 | | | | 0 | 0 | D. clouds | |
| Lahore | 28.83 | 732.2 | 29.54 | 750.2 | 99.0 | 37.2 | 21 | E | 2.1 | 0.9 | | 5 | | | | 0 | 0 | Misty | |
| Belgaum | 27.26 | 692.5 | 29.75 | 755.7 | 84.9 | 29.4 | 76 | W | 14 | 6.3 | | 6 | E | E | | 0.15 | 3.8 | Thunder-storm. | |
| Roorkee | 28.68 | 728.4 | 29.54 | 750.3 | 95.4 | 35.2 | 17 | NW | 2.6 | 1.2 | | 0 | | | S | 0 | 0 | | |
| Agra | 29.04 | 737.6 | 29.57 | 751.1 | 104.6 | 40.3 | 12 | SW | | | | 2 | | | | 0 | 0 | | |
| Nagpur | 28.61 | 726.7 | 29.60 | 751.8 | 104.9 | 40.5 | 11 | Calm | 3.9 | 1.7 | | 3 | SE | | | 0 | 0 | D. clouds | |
| Lucknow | 29.20 | 741.6 | 29.56 | 750.8 | 100.0 | 37.8 | 17 | NW | 2.0 | 0.9 | | 0 | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.26 | 743.3 | 29.56 | 750.9 | 101.1 | 38.4 | 16 | Calm | 2.4 | 1.1 | | 0 | | | | 0 | 0 | Blue sky | |
| Patna | 29.35 | 745.5 | 29.52 | 749.8 | 102.1 | 38.9 | 9 | WNW | 1.5 | 0.7 | | 0 | | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.63 | 701.8 | 29.56 | 750.7 | 95.8 | 35.4 | 28 | W | 6.4 | 2.9 | | 0 | | | | 0 | 0 | Blue sky | |
| Cuttack | 29.56 | 750.9 | 29.65 | 753.0 | 87.8 | 31.0 | | SSW | 9 | 4.0 | | 2 | | | | 0 | 0 | | |
| Calcutta (Alipore) | 29.63 | 752.6 | 29.65 | 753.1 | 86.5 | 30.3 | 74 | S | 14.0 | 6.3 | | 7 | S | S | | 0 | 0 | D. clouds | |
| Goalpara | 29.29 | 744.0 | 29.69 | 754.1 | 65.8 | 18.8 | 97 | SW | 7.5 | 3.4 | | 10 | | | | 1.16 | 29.5 | Thunder-storm | |
| Chittagong | 29.61 | 752.1 | 29.70 | 754.4 | 85.6 | 29.8 | 76 | SW | 7.8 | 3.5 | | 3 | | | | 0 | 0 | Misty | |
| Sibsagar | 29.44 | 747.6 | 29.78 | 756.3 | 72.8 | 22.7 | 93 | SSE | 2.6 | 1.2 | | 10 | W | W | | 0.33 | 8.4 | D. clouds | |
| Jubbulpore | 28.29 | 718.6 | 29.59 | 751.6 | 102.7 | 39.3 | 13 | NW | 3.9 | 1.7 | | 6 | | E | | 0 | 0 | D. clouds | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since observation of the preceding day.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.15 | 740.3 | 29.56 | 750.7 | 51.1 | 10.6 | 84 | N | 2.5 | 1.1 | ..... | ..... | 10 | ..... | ..... | 1.154 | 29.3 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.04 | 737.5 | 29.55 | 750.5 | 55.2 | 12.9 | 68 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.472 | 12.0 | ..... | Prof. Schiaparelli. |
| Padua | 29.45 | 748.0 | 29.56 | 750.8 | 48.0 | 8.9 | 92 | WNW | 15.4 | 6.9 | ..... | ..... | 10 | NE | ..... | 1.260 | 32.0 | ..... | Prof. Dott. Lorenzoni. |
| Moncalieri | 28.62 | 726.8 | 29.51 | 749.6 | 57.4 | 14.1 | 68 | ESE | 3.1 | 1.4 | ..... | ..... | 10 | N | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.39 | 746.4 | 29.58 | 751.2 | 57.9 | 14.4 | 65 | SW | 4.9 | 2.2 | ..... | ..... | 10 | NW | ..... | 0.185 | 4.7 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.62 | 701.5 | 29.52 | 749.7 | 58.8 | 14.9 | 32 | NNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.52 | 749.9 | 29.57 | 751.1 | 58.6 | 14.8 | 59 | S | 15.9 | 6.7 | ..... | ..... | 10 | W | ..... | 0.118 | 3.0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.36 | 745.6 | 29.61 | 752.1 | 53.2 | 11.8 | 78 | SW | ..... | ..... | 2 | ..... | 10 | SW | ..... | 1.008 | 25.6 | ..... | Cav. F. Meucci |
| Leghorn | 29.50 | 749.2 | 29.58 | 751.3 | 57.9 | 14.4 | 73 | SW | ..... | ..... | 4 | ..... | 7 | W | ..... | 0.736 | 18.7 | ..... | Prof. P. Monte. |
| Rome | 29.53 | 750.0 | 29.70 | 754.4 | 61.7 | 16.5 | 51 | W | 23.0 | 10.3 | ..... | ..... | 5 | ..... | ..... | 0.445 | 11.3 | ..... | Prof. P. S. Ferrari |
| Lecce | 29.54 | 750.4 | 29.80 | 756.8 | 63.7 | 17.6 | 47 | WSW | 15.4 | 6.9 | ..... | ..... | 7 | SW | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.93 | 734.9 | 29.81 | 757.2 | 66.9 | 19.4 | 71 | NW | 1.8 | 0.8 | ..... | ..... | 9 | ..... | ..... | 0.118 | 3.0 | ..... | Prof. D. Conti. |
| Cagliari | 29.54 | 750.4 | 29.74 | 755.3 | 66.6 | 19.2 | 39 | W | ..... | ..... | 2 | ..... | 5 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.58 | 751.2 | 29.83 | 757.6 | 67.6 | 19.8 | 20 | W | 4.3 | 1.9 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.71 | 754.7 | 29.78 | 756.5 | 69.3 | 20.7 | 63 | SSW | 6.3 | 2.8 | ..... | ..... | 5 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.26 | 743.1 | 29.81 | 757.2 | 59.0 | 15.0 | 68 | SW | 15.0 | 6.7 | ..... | ..... | 8 | ..... | ..... | 0.094 | 2.4 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.01 | 762.2 | 30.03 | 762.7 | 57.8 | 14.3 | 94 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.250 | 6.35 | Raining | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.74 | 755.4 | 29.95 | 760.7 | 59.1 | 15.1 | 94 | E | 6.6 | 3.0 | ..... | ..... | 10n | ..... | ..... | 0.210 | 5.33 | Raining | S. Takehayashi. |
| Tokei, (Yeddo) Observatory | 30.05 | 763.3 | 30.11 | 764.8 | 58.9 | 14.9 | 81 | S | 6.3 | 2.8 | ..... | 5cs | 3s | ..... | ..... | 0 | 0 | Cloudy | The Staff. |

Note.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.10 | 637.6 | 30.19 | 766.8 | 51.8 | 11.0 | 45 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | Prof. L. Perez. |
| Leon | 24.46 | 621.3 | 30.07 | 763.8 | 65.3 | 18.5 | 67 | E | ..... | ..... | 2 | 1c | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.13 | 588.0 | 30.15 | 765.8 | 55.4 | 13.0 | 48 | W | 0.2 | 0.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 63.1 | 17.3 | 36 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. V. de Leon, M. E. |
| Tlacotalpam | 29.92 | 760.0 | 29.93 | 760.3 | 77.2 | 25.1 | 90 | SE | ..... | ..... | 1 | 0 | 8 | ..... | S | 0 | 0 | Foggy | M. M. Chàzaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | 22.58 | 573.6 | 30.18 | 766.6 | 60.5 | 15.6 | 38 | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | J. Castrillon. |
| Puebla, (Catholic Institute) | 23.44 | 595.4 | 30.21 | 767.2 | 50.7 | 10.4 | 65 | NNW | 6.3 | 2.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.36 | 720.3 | 30.03 | 762.8 | 70.7 | 21.5 | 38 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

Note.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,167.8m., or 7,112.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 507.3 m., or 1,664.4 ft. The data are published as given, except the conversions, which have been revised; the instrumental correction —0.88 mm., has been applied at this office to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.89 | 759.2 | 29.89 | 759.2 | 48.9 | 9.4 | ..... | N | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.188 | 3.5 | ..... | |
| Groningen | 29.88 | 759.0 | 29.94 | 760.4 | 48.4 | 9.1 | ..... | NNE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.93 | 760.1 | 29.93 | 760.1 | 46.4 | 8.0 | ..... | NNE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.87 | 758.6 | 29.87 | 758.6 | 51.8 | 11.0 | 69 | NE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.84 | 757.8 | 29.88 | 759.0 | 55.6 | 13.1 | 60 | NE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.004 | 0.1 | Very cloudy | H. v. d. Brink. |

Note.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'wr 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.98 | 761.6 | 30.04 | 763.0 | 45.7 | 7.6 | 55 | W | 10.3 | 4.6 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 30.05 | 763.3 | 30.09 | 764.3 | 39.2 | 4.0 | 39 | NNE | 18 | 8 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.85 | 758.2 | 30.00 | 761.9 | 51.4 | 10.8 | 32 | SW | 4 | 2 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.99 | 761.8 | 30.04 | 762.9 | 33.0 | 0.9 | 84 | N | 13 | 6 | ..... | ..... | 10 | ..... | ..... | 0.417 | 10.6 | Snowing... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p. m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra (Azores) | 30.04 | 763.1 | 30.23 | 767.9 | 65.5 | 18.6 | 86 | WSW | 3.1 | 1.4 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.15 | 740.3 | 30.17 | 766.3 | 61.3 | 16.3 | 53 | NW | 13.0 | 5.8 | ..... | ..... | 7 | NW | ..... | 0 | 0 | ..... | Dr. A.M. R. dos Santos. |
| Funchal (Madeira) | 30.17 | 766.2 | 30.25 | 768.4 | 66.6 | 19.2 | 70 | SW | 9.8 | 4.4 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.91 | 759.6 | 30.27 | 768.8 | 56.3 | 13.5 | 80 | NNW | 17.4 | 7.8 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada (Azores) | 30.22 | 767.5 | 30.29 | 769.3 | 68.1 | 20.0 | 67 | SSE | 11.2 | 5.0 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd.t. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| Duque da Terceira, San Jose de Bissao, Senegambia | ..... | ..... | 30.06 | 763.5 | 75.2 | 24 | ..... | W | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | ..... | Blue sky..... | C.C.da Fonseca Ferreira, Comd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, S. 6° 26′, E. 11° 29′ | ..... | ..... | 29.83 | 757.6 | 84.2 | 29.0 | ..... | ESE | ..... | ..... | 1 | ..... | 4 | ..... | SE | 1 | SW | D clouds..... | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa, Porto de Bulama, Senegambia | ..... | ..... | 29.87 | 758.7 | 83.8 | 28.8 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 1 | ..... | Blue sky..... | A. Ferreira, 2d Lt |
| Sá da Bandeira | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 29.92 | 760.6 | 77.0 | 25.0 | ..... | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 1 | SE | Blue sky..... | J. M. T. Guimaraes, Com'd't. |

Note.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.28 | 743.8 | 29.71 | 754.7 | 40.3 | 4.6 | 78 | SW | 9 | 4 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.24 | 742.7 | 29.66 | 753.3 | 48.0 | 8.9 | 72 | WNW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds... | Astronomical Obs. |
| Dorpat | 29.56 | 750.9 | 29.82 | 757.3 | 34.9 | 1.0 | 98 | NE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light snow.. | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.81 | 757.1 | 29.82 | 757.5 | 38.3 | 3.5 | 60 | ENE | 16 | 7 | ..... | ..... | 6s;ks | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.10 | 739.0 | 29.71 | 754.5 | 65.3 | 18.5 | 40 | S | 11 | 5 | ..... | ..... | 5k;ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.83 | 757.7 | 29.90 | 759.5 | 66.4 | 19.1 | 55 | SSW | 18 | 8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.02 | 762.6 | 30.04 | 763.1 | 64.4 | 18.0 | 72 | SSE | 9 | 4 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.19 | 741.5 | 29.72 | 755.0 | 61.7 | 16.5 | 48 | S | 9 | 4 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.61 | 752.1 | 29.81 | 757.1 | 68.9 | 20.5 | 38 | W | 13 | 6 | ..... | ..... | 6 | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 29.78 | 756.4 | 29.80 | 756.9 | 30.9 | — 0.6 | 68 | NW | 18 | 8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.58 | 725.9 | 29.03 | 760.2 | 77.9 | 25.5 | 31 | NW | 18 | 8 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.07 | 763.8 | 29.99 | 761.7 | 70.7 | 21.5 | 47 | WNW | 11 | 5 | ..... | ..... | 10ns | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.27 | 743.5 | 29.73 | 755.2 | 57.0 | 13.9 | 87 | NW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Cand. Fatjanow. |
| Kasan | 29.40 | 746.7 | 29.66 | 753.4 | 57.7 | 14.3 | 85 | SSW | 2 | 1 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light rain.. | Physical Cabinet. |
| Ekaterinburg | 28.74 | 730.0 | 29.65 | 753.1 | 74.8 | 23.8 | 24 | SW | 18 | 8 | ..... | ..... | 10c | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Nukuss | 29.74 | 755.5 | 29.96 | 761.1 | 87.6 | 30.9 | 41 | ENE | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 25.33 | 719.6 | 29.82 | 757.3 | 80.1 | 26.7 | 52 | Calm | 0 | 0 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.52 | 749.9 | 30.03 | 762.8 | 46.0 | 7.8 | 31 | E | 4 | 2 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeniseisk | 30.03 | 762.7 | 30.33 | 770.4 | 32.7 | 0.4 | 41 | S | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking (China) | 29.61 | 752.2 | 29.76 | 755.8 | 65.3 | 18.5 | 64 | SE | 16 | 7 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 30.05 | 763.2 | 30.15 | 765.7 | 41.4 | 5.2 | 92 | SE | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.69 | 754.0 | 29.79 | 756.7 | 61.7 | 16.5 | 51 | ENE | 3.9 | 1.83 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 30.03 | 762.8 | 30.09 | 764.3 | 54.3 | 12.4 | 82 | NW | 9.3 | 4.18 | ..... | 2 | 7 | N | ..... | 0.819 | 20.8 | Rain & hail.. | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.09 | 688.0 | ..... | ..... | 44.8 | 7.1 | 64 | N | 10.0 | 4.46 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy..... | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.79 | 705.8 | ..... | ..... | 59.5 | 15.3 | 45 | N | 24.6 | 11.0 | ..... | 0 | 8 | ..... | ..... | 0 | 0 | Almost cov'd | The Staff. |
| Murcia, Met. Obs'y | 29.78 | 756.3 | 29.93 | 760.1 | 70.7 | 21.5 | 37 | NW | 10.5 | 4.69 | ..... | 3 | 4 | SE | ..... | 0 | 0 | Cloudy..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.28 | 743.6 | 30.17 | 766.2 | 58.1 | 14.5 | 57 | N | 12.5 | 5.6 | ..... | ..... | 6 | ..... | ..... | 0.047 | 1.2 | Cloudy..... | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.94 | 760.5 | 30.01 | 762.2 | 74.7 | 23.7 | 88 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.965 | 24.6 | Clear..... | Benito Vines, S. J |
| Manilla, Philippine Islands | 29.76 | 755.8 | 29.81 | 757.2 | 82.4 | 28.0 | 77 | NE | 4.5 | 2.0 | ..... | 1 | 2 | S | E | 0 | 0 | Clear..... | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.08 | 764.1 | 30.18 | 766.6 | 61.5 | 16.4 | 66 | WNW | 17.1 | 7.6 | ..... | 0 | 4 | ..... | NE | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W. I | 29.96 | 760.9 | 30.05 | 763.2 | 77.7 | 25.4 | 83 | NE | 17.3 | 7.73 | ..... | 6ks | 4kn | NE | NE | 0.197 | 5.00 | Cloudy..... | Leonardo deTejeda, Ch'f Eng'r. |

Note.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

**Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.**

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L'w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.03 | 762.7 | 30.07 | 763.7 | 37.8 | 3.2 | ..... | N | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.06 | 763.6 | 30.11 | 764.9 | 41.0 | 5.0 | 54 | SE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.02 | 762.6 | 30.08 | 763.9 | 45.0 | 7.2 | 58 | E | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.79 | 756.6 | 29.96 | 761.1 | 41.0 | 5.0 | 28 | N | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.77 | 756.1 | 29.83 | 757.6 | 38.5 | 3.6 | 67 | NE | ..... | ..... | 7 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.92 | 759.9 | 29.99 | 761.8 | 42.4 | 5.8 | 23 | N | 20:1 | 9.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

**Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.**

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.26 | 717.7 | 29.68 | 753.8 | 55.2 | 12.9 | 48 | NNW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0.043 | 1.1 | Cloudy ..... | The Observatory. |
| Zurich | 28.06 | 712.8 | 29.72 | 755.0 | 46.8 | 8.2 | 89 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 1.299 | 33.0 | Raining..... | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —6.7 mm.; Thermometer,—0.9 Cent.; Relative Humidity, —9 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,338.6 feet, and that of Zurich 470 m., or 1,542.0 ft.

## TURKISH SERIES.

**Furnished by the co-operation of A. Counibary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.**

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.99 | 761.7 | 69.8 | 21.0 | 44 | SSW | 4 | 2.0 | ..... | ..... | 6 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.16 | 766.0 | 87.8 | 31.0 | ..... | SE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.89 | 759.2 | 59.2 | 15.1 | ..... | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut (Syria) Lee Obs'y | 29.96 | 761.0 | 30.08 | 764.0 | 71.4 | 21.9 | 74 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Prof. C.V.A.Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

**Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.**

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.02 | 762.5 | 30.09 | 764.3 | 43.8 | 6.6 | 93 | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Overcast..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.58 | 751.3 | 29.88 | 758.9 | 56 | 13.3 | ..... | SW | 1 | 0.4 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy..... | W. R. Bigg. |
| *Chatham, N. B | 30.06 | 763.3 | 30.12 | 765.0 | 45 | 7.2 | 72 | Calm | 0 | 0 | ..... | 6cs | 5ks | Calm | Calm | 0 | 0 | Cloudy..... | G. A. Blair. |
| Charlottetown, P. E. Island | 30.13 | 765.3 | 30.17 | 766.3 | 48 | 6.1 | 77 | S | 3 | 1.3 | ..... | ..... | 8ks | ..... | Calm | 0 | 0 | Cloudy..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.61 | 752.1 | 29.80 | 756.9 | 52.9 | 11.6 | 90 | E | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | Overcast..... | James Smith, M. A. |
| Dalhousie, N. B | 29.92 | 760.0 | 30.09 | 764.8 | 41 | 5.0 | ..... | E | ..... | ..... | 1 | 0 | 9ks | ..... | ..... | 0 | 0 | Cloudy..... | H. A. Johnson. |
| Esquimault, B. C | 29.92 | 760.0 | 29.97 | 761.2 | 43.3 | 6.8 | 83 | Calm | 0 | 0 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Overcast..... | W. H. Bevis. |
| *Father Point, Quebec | 29.94 | 760.5 | 29.96 | 761.0 | 39 | 3.9 | 95 | NE | 10 | 4.5 | ..... | 2k | 8n | W | W | 0.64 | 1.0 | Light rain... | J. McWilliams. |
| Fredericton, N. B | 30.10 | 764.6 | 30.16 | 766.1 | 47.6 | 8.3 | 64 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | ..... | Inap. | Inap. | Overcast..... | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.16 | 740.7 | 30.02 | 762.5 | 33 | 0.6 | 89 | SE | 12 | 5.4 | ..... | 2c | 2s | W | W | 0 | 0 | Fair..... | James Stewart. |
| Granton, Ontario | 28.84 | 732.5 | 29.96 | 761.0 | 40 | 4.4 | ..... | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.43 | 10.9 | Foggy ..... | James Grant. |
| *Halifax, N. S | 30.04 | 763.0 | 30.18 | 766.6 | 50 | 10.0 | 61 | Calm | 0 | 0 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Hazy ..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.54 | 750.3 | 29.91 | 759.7 | 52.5 | 11.4 | 83 | SW | ..... | ..... | 1 | 10cs | 0 | SW | ..... | 0.33 | 8.4 | Cloudy ..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | | | | | | | | | | | | | | | | | | | E. Weedon. |
| *Kingston, Ontario | 29.51 | 749.5 | 29.85 | 758.2 | 50 | 10.0 | 86 | SE | 18 | 5.8 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.17 | 766.3 | 30.21 | 767.3 | 41.2 | 5.1 | 87 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | C. H. Rigby. |
| Moose Factory, Ontario | 29.91 | 759.7 | 29.94 | 760.5 | 29.7 | —1.3 | 92 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.04 | 1.0 | Cloudy..... | J. R. Nason. |
| *Montreal, Quebec | 29.69 | 754.1 | 29.98 | 758.9 | 53 | 11.7 | 83 | S | 15 | 6.7 | ..... | ..... | 10s | ..... | ..... | Inap. | Inap. | Cloudy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.16 | 740.4 | 29.85 | 758.2 | 40 | 4.4 | 96 | W | 11 | 4.9 | ..... | ..... | 10n | ..... | W | 0.65 | 16.5 | Cloudy..... | Rev. R. Mosly. |
| Peterboro, Ontario | 29.07 | 738.4 | 29.82 | 757.4 | 50.2 | 10.1 | 89 | W | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0.62 | 13.2 | Overcast..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.22 | 742.2 | 29.90 | 759.4 | 51 | 10.6 | 93 | NW | 7 | 3.1 | ..... | 10ck | 0 | SW | ..... | 0.48 | 12.2 | Fair..... | H. Morgan. |
| Port Hastings, N. S | 30.13 | 765.3 | 30.18 | 766.6 | 41.6 | 5.3 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine..... | Peter Grant. |
| Port Stanley, Ontario | 29.29 | 744.0 | 29.94 | 760.5 | 46 | 7.8 | 95 | W | 12 | 5.4 | ..... | ..... | 10n | ..... | NW | 0.22 | 5.6 | Cloudy..... | M. Payne. |
| *Quebec, Quebec | 29.66 | 753.4 | 29.98 | 761.5 | 44 | 6.7 | 76 | E | ..... | ..... | 1 | 0 | 2ks | ..... | E | 0.04 | 1.0 | Fair..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.35 | 745.5 | 29.80 | 756.9 | 50 | 10.0 | 95 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | 0.18 | 4.6 | Light rain.. | W. H. McIntyre. |
| St. Andrews, N. B | 30.10 | 764.5 | 30.15 | 765.8 | 45 | 7.2 | 80 | SW | ..... | ..... | 1 | 0 | Haze | ..... | ..... | 0 | 0 | Hazy..... | Dr. Gove. |
| St. John, N. B | 30.04 | 763.0 | 30.20 | 767.1 | 41 | 5.0 | 91 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | ..... | 0.01 | 0.3 | Overcast.... | G. Murdock, C. E. |
| *Sangeen, Ontario | 29.19 | 741.4 | 29.92 | 760.0 | 40 | 4.4 | 91 | SW | 10 | 4.5 | ..... | 2k | 0 | SW | ..... | 0.51 | 13.0 | Clear..... | K. Stewart. |
| Stayner, Ontario | | | | | | | | | | | | | | | | | | | R. J. Cole. |
| Stratford, Ontario | 28.60 | 726.4 | 29.89 | 759.2 | 45.0 | 7.2 | 91 | NW | 13.0 | 5.8 | ..... | ..... | 10s;n | ..... | ..... | 0.32 | 8.1 | Overcast..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.17 | 766.3 | 30.21 | 767.3 | 47 | 8.3 | 62 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | T. C. Hill. |
| *Toronto, Ontario | 29.49 | 749.0 | 29.87 | 758.7 | 51 | 10.6 | 78 | NW | 12 | 5.4 | ..... | ..... | 10ks | ..... | W | 0.26 | 6.6 | Cloudy..... | Magnetic Observatory. |
| Windsor, N. S | 30.11 | 764.8 | 30.20 | 767.1 | 38.0 | 3.3 | 91 | W | 1 | 0.4 | ..... | 4cs | 0 | ..... | ..... | 0 | 0 | Fine..... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 35.0 | 1.7 | 100 | SE | ..... | ..... | ..... | 16 | 6 | ..... | ..... | 0.02 | 0.5 | Cloudy..... | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,152 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the co-operation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Lw'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.80 | 756.9 | 30.03 | 762.8 | 55 | 12.8 | 84 | S | 15 | 6.7 | ..... | ..... | 10s | ..... | S | Inap. | Inap. | Cloudy | |
| Alpena, Michigan | 29.27 | 743.4 | 29.92 | 760.0 | 41 | 5.0 | 65 | W | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0.55 | 14.0 | Clear | |
| Atlanta, Georgia | 28.84 | 732.5 | 29.96 | 761.0 | 62 | 16.7 | 88 | E | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.37 | 9.4 | Cloudy | |
| Atlantic City, New Jersey | 30.08 | 764.0 | 30.09 | 764.3 | 51 | 10.6 | 100 | S | 7 | 3.1 | ..... | ..... | 10s | ..... | SW | 0.03 | 0.8 | Cloudy | |
| Augusta, Georgia | 29.84 | 757.9 | 30.01 | 762.2 | 65 | 18.3 | 94 | SE | 1 | 0.4 | ..... | ..... | 10s | ..... | SE | 0.95 | 24.1 | Cloudy | |
| Baltimore, Maryland | 30.01 | 762.2 | 30.06 | 763.5 | 56 | 13.3 | 94 | E | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Barnegat, New Jersey | 30.06 | 763.5 | 30.08 | 764.0 | 49 | 9.4 | 93 | SE | 8 | 3.6 | ..... | ..... | 10s;fg | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Bismarck, Dakota | 28.07 | 713.0 | 29.93 | 760.2 | 48 | 8.9 | 56 | NW | 20 | 8.9 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Boerne, Texas | 28.64 | 727.4 | 29.96 | 761.0 | 55 | 12.8 | 87 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boise City, Idaho | 27.18 | 690.4 | 30.14 | 765.5 | 42 | 5.6 | 74 | N | 5 | 2.2 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.98 | 761.5 | 30.14 | 765.5 | 48 | 8.9 | 78 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Brackettville, Texas | 28.91 | 734.3 | 29.92 | 760.0 | 65 | 18.3 | 84 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.90 | 734.0 | 29.91 | 759.7 | 39 | 3.9 | 73 | SE | 11 | 4.9 | ..... | 2k | 0 | E | ..... | 0 | 0 | Clear | |
| Brownsville, Texas | 29.96 | 761.0 | 30.00 | 762.0 | 78 | 25.6 | 78 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.18 | 741.2 | 29.87 | 758.7 | 48 | 8.9 | 100 | SW | 13 | 5.8 | ..... | ..... | 10n;fog | ..... | SW;Calm | 0.08 | 2.0 | Light rain | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Burlington, Vermont | 29.66 | 753.4 | 29.94 | 760.5 | 56 | 13.3 | 75 | S | 22 | 9.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.80 | 756.9 | 30.19 | 766.8 | 54 | 12.2 | 61 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.20 | 5.1 | Clear | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.24 | 641.1 | 30.04 | 763.0 | 62 | 16.7 | 14 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 45 | N | ..... | ..... | 1 | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Campo, California | 27.43 | 696.7 | 30.00 | 762.0 | 37 | 2.8 | 71 | E | 4 | 1.8 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.09 | 764.3 | 30.10 | 764.5 | 65 | 18.3 | 84 | SE | 12 | 5.4 | ..... | 10c | Sm'e | W | ..... | 0 | 0 | Cloudy | |
| Cape Henry, Virginia | 30.05 | 763.3 | 30.06 | 763.5 | 61 | 16.1 | 88 | SE | 11 | 4.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Cape Lookout, N. Carolina | 30.06 | 763.5 | 30.08 | 764.0 | 66 | 18.9 | 84 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 30.01 | 762.2 | 30.03 | 762.8 | 53 | 11.7 | 93 | S | 22 | 9.8 | ..... | ..... | Fog | ..... | S | 0 | 0 | Foggy | |
| Castroville, Texas | 29.29 | 744.0 | 29.99 | 761.7 | 64 | 17.8 | 73 | E | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 29.95 | 760.7 | 30.01 | 762.2 | 68 | 20.0 | 90 | S | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.35 | 8.9 | Light rain | |
| Cheyenne, Wyoming | 24.07 | 611.4 | 30.01 | 762.2 | 38 | 3.3 | 63 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.39 | 746.5 | 30.09 | 764.3 | 46 | 7.8 | 69 | N | 2 | 0.9 | ..... | 0 | Fog | ..... | ..... | 0 | 0 | Clear | |
| Cincinnati, Ohio | 29.40 | 746.7 | 30.04 | 763.0 | 66 | 13.3 | 63 | N | 7 | 3.1 | ..... | 1c | 0 | NW | ..... | 0.08 | 2.0 | Clear | |
| Cleveland, Ohio | 29.25 | 742.9 | 29.97 | 761.2 | 51 | 10.6 | 79 | W | 9 | 4.0 | ..... | 5cs | 0 | W | ..... | 0.20 | 5.1 | Fair | |
| Coleman City, Texas | 28.31 | 719.1 | 29.98 | 761.5 | 64 | 12.2 | 93 | Calm | 0 | 0 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Columbus, Ohio | 29.15 | 740.4 | 29.97 | 761.2 | 60 | 15.6 | 65 | N | 8 | 3.6 | ..... | 5k | Haze | Calm | Calm | 0.02 | 0.5 | Fair | |
| Concho, Texas | 28.20 | 716.3 | 29.86 | 758.4 | 57 | 13.9 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.61 | 752.1 | 30.08 | 764.0 | 57 | 13.9 | 94 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Davenport, Iowa | 29.48 | 748.8 | 30.13 | 765.3 | 45 | 7.2 | 61 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.44 | 646.2 | ..... | ..... | 41 | 5.0 | 65 | Calm | 0 | 0 | ..... | 2k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Decatur, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Denison, Texas | 29.32 | 744.7 | 30.11 | 764.8 | 56 | 13.3 | 81 | N | 3 | 1.3 | ..... | ..... | 0 | ..... | ..... | 0.27 | 6.9 | Clear | |
| Denver, Colorado | 24.81 | 630.2 | 30.03 | 762.5 | 45 | 7.2 | 68 | S | 8 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | |
| Des Moines, Iowa | 29.22 | 742.2 | 30.12 | 765.0 | 44 | 6.7 | 68 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 29.29 | 744.0 | 29.95 | 760.7 | 49 | 9.4 | 85 | NW | 8 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dodge City, Kansas | 27.49 | 698.2 | 29.78 | 756.4 | 51 | 10.6 | 79 | S | 12 | 5.4 | ..... | ..... | 0 | ..... | ..... | 0.43 | 10.9 | Clear | |
| Dubuque, Iowa | 29.40 | 746.7 | 30.11 | 764.8 | 46 | 7.8 | 47 | W | 1 | 0.4 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Duluth, Minnesota | 29.39 | 746.5 | 30.08 | 764.0 | 39 | 3.9 | 73 | NW | 2 | 0.9 | ..... | 5k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Eagle Pass, Texa | 29.39 | 746.5 | 30.08 | 764.0 | 39 | 3.9 | 73 | NW | 2 | 0.9 | ..... | 2k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Eastport, Maine | 29.30 | 744.2 | 30.02 | 762.5 | 69 | 20.6 | 75 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Edinburg, Texas | 30.09 | 764.3 | 30.16 | 766.1 | 47 | 8.3 | 70 | S | 6 | 2.7 | ..... | 5ck;hz | 2s;hz | W | Calm | 0 | 0 | Hazy | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 71 | 21.7 | 90 | S | ..... | ..... | 1 | ..... | 5s | ..... | Calm | 0 | 0 | Fair | |
| Erie, Pennsylvania | 26.30 | 668.0 | ..... | ..... | 50 | 10.0 | 50 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Escanaba, Michigan | 29.23 | 742.4 | 29.93 | 760.2 | 52 | 11.1 | 93 | SW | 3 | 1.3 | ..... | ..... | 10s | ..... | SW | 0.46 | 11.7 | Cloudy | |
| Florence, Arizona | 29.33 | 745.0 | 29.99 | 761.7 | 41 | 5.0 | 57 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 28.46 | 722.9 | 30.06 | 763.5 | 60 | 15.6 | 34 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 28.01 | 711.4 | ..... | ..... | 38 | 3.3 | 71 | NW | 15 | 6.7 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Fort Davis, Texas | 25.55 | 649.0 | 29.61 | 752.1 | 47 | 8.3 | 34 | Calm | 0 | 0 | ..... | c | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 25.31 | 642.9 | 30.27 | 768.8 | 55 | 12.8 | 50 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 29.59 | 751.6 | 30.13 | 765.3 | 56 | 13.3 | 69 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 28.83 | 732.3 | 30.11 | 764.8 | 54 | 12.2 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort McKavett, Texas | 27.54 | 699.5 | ..... | ..... | 39 | 3.9 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 27.84 | 707.1 | 29.75 | 755.6 | 57 | 13.9 | 87 | NE | 3 | 1.3 | ..... | 0 | 8s | ..... | NE | 0 | 0 | Fair | |
| Fort Sill, Indian Territory | 30.22 | 767.6 | 30.26 | 768.6 | 3 | —16.1 | 100 | SW | 2 | 0.9 | ..... | 0 | 5cs | ..... | Calm | 0 | 0 | Fair | |
| Fort Stevenson, Dakota | 28.91 | 734.3 | 30.02 | 762.5 | 53 | 11.7 | 93 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fredericksburg, Texas | ..... | ..... | ..... | ..... | 43 | 6.1 | 75 | W | 24 | 10.7 | ..... | 1k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Galveston, Texas | 28.30 | 718.8 | 29.82 | 757.4 | 70 | 21.1 | 75 | S | 4 | 1.8 | ..... | 5k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Graham, Texas | 30.00 | 762.0 | 30.04 | 763.0 | 70 | 21.1 | 95 | NW | 8 | 3.6 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 29.05 | 737.9 | 30.11 | 764.8 | 56 | 13.3 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.38 | 746.2 | 30.04 | 763.0 | 46 | 7.8 | 54 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Indianola, Texas | 29.28 | 743.7 | 30.06 | 763.5 | 49 | 9.4 | 57 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.23 | 5.8 | Clear | |
| Jacksboro, Texas | 30.05 | 763.3 | 30.08 | 764.0 | 67 | 19.4 | 89 | NE | 14 | 6.3 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Jacksonville, Florida | 28.97 | 735.8 | 30.11 | 764.8 | 57 | 13.9 | 69 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 30.00 | 762.0 | 30.02 | 762.5 | 68 | 20.0 | 84 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | S | 1.03 | 26.2 | Cloudy | |
| Key West, Florida | 29.50 | 749.3 | 30.12 | 765.0 | 52 | 11.1 | 54 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Kittyhawk, North Carolina | 29.98 | 761.5 | 30.01 | 762.2 | 79 | 29.1 | 82 | SE | 8 | 3.6 | ..... | 5cs;k | 0 | Calm;SE | ..... | 0 | 0 | Fair | |
| Knoxville, Tennessee | 30.05 | 763.3 | 30.07 | 763.8 | 65 | 18.3 | 73 | SE | 12 | 5.4 | ..... | 5cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| La Crosse, Wisconsin | 29.04 | 737.6 | 30.04 | 763.0 | 56 | 13.3 | 90 | NE | 1 | 0.4 | ..... | ..... | 10ks | ..... | ..... | 0.07 | 1.8 | Threatening | |
| La Mesilla, New Mexico | 29.33 | 745.0 | 30.07 | 763.8 | 46 | 7.8 | 62 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 26.13 | 663.7 | 30.28 | 769.1 | 46 | 7.8 | 54 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.61 | 752.1 | 29.94 | 760.5 | 77 | 25.0 | 73 | E | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Los Angeles, California | 29.23 | 744.0 | 30.14 | 765.5 | 48 | 8.9 | 70 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Louisville, Kentuckey | 29.64 | 752.8 | 29.98 | 761.5 | 50.0 | 10.0 | 93 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Lynchburg, Virginia | 29.50 | 749.3 | 30.06 | 763.5 | 54 | 12.2 | 49 | N | 8 | 3.6 | ..... | 8c | 0 | Calm | ..... | 0.51 | 12.9 | Fair | |
| Madison, Wisconsin | 29.34 | 745.2 | 30.01 | 762.2 | 63 | 17.2 | 88 | S | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | 0.28 | 7.1 | Light rain | |
| Marquette, Michigan | 29.07 | 738.4 | 30.06 | 763.5 | 48 | 8.9 | 49 | W | 5 | 2.2 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Mason, Texas | 29.25 | 742.9 | 29.96 | 761.0 | 39 | 3.9 | 73 | NW | 12 | 5.4 | ..... | ..... | 10ks | ..... | NW | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 28.48 | 723.4 | 30.24 | 768.1 | 58 | 14.4 | 82 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.81 | 757.2 | 30.14 | 765.5 | 57 | 13.9 | 62 | NE | 8 | 3.6 | ..... | 5cs | 0 | N | ..... | 0.32 | 8.1 | Fair | |
| Mobile, Alabama | 29.33 | 745.0 | 30.07 | 763.8 | 45 | 7.2 | 68 | W | 10 | 4.5 | ..... | 0 | Sm'e | ..... | ..... | 0.04 | 1.0 | Clear | |
| Montgomery, Alabama | 29.98 | 761.5 | 30.03 | 762.8 | 70 | 21.1 | 82 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Morgantown, West Virginia | 29.50 | 756.9 | 30.03 | 762.8 | 66 | 18.9 | 90 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Mt. Washington, N. H. | 28.89 | 733.8 | 29.90 | 759.4 | 68 | 20.0 | 60 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| Nashville, Tennessee | 23.86 | 606.0 | 30.22 | 767.6 | 38 | 3.3 | 90 | W | 54 | 24.1 | ..... | Haze | 2s | Calm | Calm | 0 | 0 | Fair | |
| New Haven, Connecticut | 29.52 | 749.8 | 30.05 | 763.3 | 60 | 15.6 | 60 | NW | 5 | 2.2 | ..... | ..... | 10ks | ..... | NW | 0.21 | 5.3 | Cloudy | |
| New London, Connecticut | 29.98 | 761.5 | 30.10 | 764.5 | 51 | 10.6 | 96 | E | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| New Orleans, Louisiana | 30.09 | 764.3 | 30.14 | 765.5 | 50 | 10.0 | 100 | SE | 8 | 3.6 | ..... | ..... | Fog | ..... | SE | 0.01 | 0.3 | Dense fog | |
| Newport, Rhode Island | 29.97 | 761.2 | 30.02 | 762.8 | 70 | 21.1 | 75 | NW | 12 | 5.4 | ..... | ..... | 10n | ..... | NW | 0.02 | 0.5 | Light rain | |
| New York, New York | 30.09 | 764.3 | 30.14 | 765.5 | 49 | 9.4 | 93 | SE | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Norfolk, Virginia | 29.92 | 760.0 | 30.10 | 764.5 | 49 | 9.4 | 100 | E | 6 | 2.7 | ..... | ..... | Fog | ..... | Calm | 0.06 | 1.5 | Dense fog | |
| | 30.02 | 762.5 | 30.07 | 763.8 | 68 | 20.0 | 74 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.05 | 687.1 | 29.59 | 751.6 | 49 | 9.4 | 78 | SE | 12 | 5.4 | ..... | 2c | 0 | SW | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.99 | 761.7 | 30.03 | 762.8 | 38.2 | 3.4 | 81 | SE | 2 | 0.9 | ..... | 0 | 4s | ..... | Calm | 0.03 | 0.8 | Fair | |
| Omaha, Nebraska | 28.93 | 734.8 | 30.02 | 762.5 | 53 | 11.7 | 42 | S | 14 | 6.3 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Oswego, New York | 29.69 | 761.6 | 29.90 | 759.4 | 59 | 15.0 | 76 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Pembina, Dakota | 28.12 | 739.6 | 29.97 | 761.2 | 32 | 0.0 | 89 | E | 10 | 4.5 | ..... | 0 | 5s | ..... | W | 0 | 0 | Fair | |
| Philadelphia, Pa | 30.02 | 762.5 | 30.07 | 763.8 | 51 | 10.6 | 93 | E | 6 | 2.7 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Dense fog | |
| Phœnix, Arizona | 28.77 | 730.7 | 30.56 | 776.2 | 59 | 15.0 | 33 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.89 | 454.4 | 30.07 | 763.8 | 22 | — 5.6 | 18 | NW | 34 | 15.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Ploche, Nevada | 24.10 | 612.1 | 29.86 | 758.4 | 51 | 10.6 | 22 | Calm | 0 | 0 | ..... | 2c | 0 | SW | ..... | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 29.14 | 740.1 | 29.92 | 760.0 | 63 | 17.2 | 78 | W | 3 | 1.3 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Port Huron, Michigan | 29.29 | 744.0 | 29.96 | 761.0 | 41 | 5.0 | 91 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.39 | 9.9 | Cloudy | |
| Portland, Maine | 30.09 | 764.3 | 30.14 | 765.5 | 48 | 8.9 | 70 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Portland, Oregon | 29.99 | 761.7 | 30.09 | 764.3 | 45.6 | 7.2 | 84 | Calm | 0 | 0 | ..... | 0 | 9s | ..... | ..... | 0 | 0 | Cloudy | |
| Prescott, Arizona | 24.80 | 629.9 | 30.16 | 766.1 | 45 | 7.2 | 39 | SW | 3 | 1.3 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Pilot Point, Texas | 29.04 | 737.6 | 29.85 | 758.2 | 59 | 15.0 | 76 | N | 12 | 5.4 | ..... | Haze | Haze | ..... | ..... | 3.00 | 76.2 | Hazy | |
| Punta Rassa, Florida | 30.02 | 762.5 | 30.04 | 763.0 | 75 | 23.9 | 86 | S | 9 | 4.0 | ..... | 5s | 5s | SW | SW | 0 | 0 | Cloudy | |
| Red Bluff, California | 29.62 | 752.3 | 29.97 | 761.2 | 59.5 | 15.6 | 78 | NW | 4 | 1.8 | ..... | 2k | 0 | W | ..... | 0 | 0 | Fair | |
| Rio Grande City, Texas | 29.84 | 757.9 | 30.05 | 763.3 | 75 | 23.9 | 81 | SE | ..... | ..... | 1 | ..... | 10s | ..... | SE | Inap. | Inap. | Cloudy | |
| Rochester, New York | 29.25 | 742.9 | 29.84 | 757.9 | 60 | 15.6 | 77 | SW | 7 | 3.1 | ..... | ..... | 10s | ..... | SW | 0.05 | 1.3 | Cloudy | |
| Roseburg, Oregon | 29.48 | 748.8 | 30.06 | 763.5 | 47.5 | 8.6 | 92 | Calm | 0 | 0 | ..... | 10k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Sacramento, California | 29.88 | 758.9 | 29.96 | 761.0 | 57 | 13.9 | 75 | S | 3 | 1.3 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| St. Louis, Missouri | 29.58 | 751.3 | 30.16 | 766.1 | 52 | 11.1 | 41 | NW | 8 | 3.6 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| St. Marks, Florida | 30.00 | 762.0 | 30.02 | 762.5 | 64 | 17.8 | 100 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 1.01 | 25.7 | Cloudy | |
| St. Paul, Minnesota | 29.15 | 740.4 | 29.99 | 761.7 | 42 | 5.6 | 74 | E | 4 | 1.8 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.70 | 652.8 | 30.03 | 762.8 | 52 | 11.1 | 35 | NE | 4 | 1.8 | ..... | 7c | 0 | W | ..... | 0 | 0 | Fair | |
| San Antonio, Texas | 29.38 | 746.2 | 29.96 | 761.0 | 62 | 16.7 | 77 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.93 | 760.2 | 30.01 | 762.2 | 55 | 12.8 | 93 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.30 | 744.2 | 29.96 | 761.0 | 54 | 12.2 | 74 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.14 | 3.6 | Clear | |
| Sandy Hook, New Jersey | 30.06 | 763.5 | 30.09 | 764.3 | 47 | 8.3 | 100 | SE | 5 | 2.2 | ..... | ..... | Fog | ..... | Calm | 0.02 | 0.5 | Dense fog | |
| San Francisco, California | 29.94 | 760.5 | 30.01 | 762.2 | 51.5 | 10.8 | 86 | SW | 3 | 1.3 | ..... | 2ck | 2s | W | Calm | 0 | 0 | Fair | |
| Santa Fé, New Mexico | 23.36 | 593.3 | 29.90 | 759.4 | 46 | 7.8 | 26 | E | 2 | 0.9 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.92 | 760.0 | 30.01 | 762.2 | 69 | 20.6 | 85 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | SW | 0.60 | 15.2 | Cloudy | |
| Shreveport, Louisiana | 29.86 | 758.4 | 30.07 | 763.8 | 64 | 17.8 | 100 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.51 | 13.0 | Cloudy | |
| Silver City, New Mexico | 24.36 | 618.7 | 30.56 | 776.2 | 46 | 7.8 | 54 | NW | 1 | 0.4 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Smithville, North Carolina | 30.02 | 762.5 | 30.06 | 763.5 | 68 | 20.0 | 90 | SE | 18 | 8.0 | ..... | ..... | 10n | ..... | SE | Inap. | Inap. | Light rain | |
| Springfield, Massachusetts | 29.98 | 761.5 | 30.11 | 764.8 | 50 | 10.0 | 86 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | S | 0 | 0 | Threatening | |
| Stockton, Texas | 27.06 | 687.3 | 30.06 | 763.5 | 59 | 15.0 | 66 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.09 | 764.3 | 30.15 | 765.8 | 48 | 8.9 | 93 | S | 5 | 2.2 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Toledo, Ohio | 29.29 | 744.0 | 29.96 | 761.0 | 55 | 12.8 | 56 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.26 | 6.6 | Clear | |
| Tucson, Arizona | 27.53 | 699.2 | 30.08 | 764.0 | 57 | 13.9 | 30 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.66 | 753.4 | 30.15 | 765.8 | 48.0 | 8.9 | 78 | E | 4 | 1.8 | ..... | 0 | 5ks | ..... | W | 0 | 0 | Fair | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | 33 | 0.6 | 79 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 0.08 | 2.0 | Cloudy | |
| Uvalde, Texas | 29.16 | 740.7 | 29.97 | 761.2 | 65 | 18.3 | 73 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.83 | 757.7 | 30.09 | 764.3 | 63 | 17.2 | 94 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.40 | 10.2 | Cloudy | |
| Virginia City, Montana | 24.28 | 616.7 | 29.76 | 755.9 | 36 | 2.2 | 61 | Calm | 0 | 0 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Visalia, California | 29.57 | 751.1 | 29.93 | 760.2 | 58.5 | 14.7 | 60 | Calm | 0 | 0 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 29.92 | 760.0 | 30.04 | 763.0 | 57 | 13.9 | 51 | NE | 2 | 0.9 | ..... | 5ck | 2s;sm | SW | ..... | Inap. | Inap. | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 60 | 15.6 | 49 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 29.94 | 760.5 | 30.02 | 762.5 | 68 | 20.0 | 84 | SE | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.08 | 2.0 | Light rain | |
| Winnemucca, Nevada | 25.69 | 652.5 | 30.05 | 763.3 | 40 | 4.4 | 48 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass | 30.10 | 764.5 | 30.13 | 765.3 | 53 | 11.7 | 86 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Yankton, Dakota | 28.72 | 729.5 | 29.99 | 761.7 | 53 | 11.7 | 42 | S | 25 | 11.2 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.70 | 754.4 | 29.86 | 758.4 | 64 | 17.8 | 63 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.57 | 725.7 | 29.98 | 761.5 | 54 | 12.2 | 43 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 29.95 | 760.7 | 30.00 | 762.0 | 78 | 25.6 | 78 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.46 | 11.7 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 26.27 | 641.8 | ..... | ..... | 64.0 | 17.8 | 89 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | 0.95 | 24.1 | ..... | Thomas Herran. |
| Navassa, W. I | 29.90 | 759.4 | 29.98 | 761.5 | 79 | 26.1 | ..... | NE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.54 | 13.7 | Cloudy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.00 | 762.0 | 30.00 | 762.0 | 81 | 27.1 | 83 | E | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 1.100 | 27.94 | Raining | C. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | 30.04 | 763.0 | 30.10 | 764.5 | 29.5 | — 1.4 | 95 | S | 7 | 3.1 | ..... | 2c | 0 | S | ..... | 0 | 0 | Fair | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,208 (?) ft., or 1,586.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,037.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761 4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,395.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.69 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | | | | | | | | | | | | | | | | | | | | | |
| Navy Yard, Pensacola, Fla. | 30.12 | 765.0 | 69 | 20.6 | 69 | 20.6 | 95 | W | 5 | 2.2 | | | 2 | | W | 0 | 0 | | | Fair | |
| Navy Yard, Portsmouth, N.H | 30.17 | 766.3 | 66 | 18.3 | 47 | 8.3 | 85 | SSW | 2 | 0.9 | | | 10 | | | 0 | 0 | | | Overcast | |
| Naval Hospital, Yokohama, Japan | *30.14‡ | 765.5‡ | | | 59.9 | 15.5 | 79 | SW | | | 2 | | 10s | | SW | 0 | 0 | | | Overcast | |
| Adams, Panama | *29.94 | 760.5 | 82 | 27.8 | 81 | 27.2 | 91 | S | | | 3 | | 10 | | | | | | | Cloudy | |
| Alaska, N. 53° 59′, W. 130° 10′ | 29.76‡ | 755.9‡ | | | 41 | 5.0 | 91 | SE | | | 4 | | 10 | | | 0 | 0 | Smooth | | Misty | |
| Alliance, Palermo, Sicily | 29.83‡ | 757.7‡ | | | 67 | 19.4 | 29 | N | | | 2 | | 8 | | N | | | | | Pleasant | |
| Ashuelot, Hong-Kong, China | *29.91‡ | 759.7‡ | | | 75 | 23.9 | 86 | Calm | | | 0 | | 0 | | | | | Smooth | | Clear | |
| Canonicus, New Orleans, La. | *30.04 | 763.0 | 60 | 10.0 | 66 | 18.9 | 94 | NW | | | 3 | | 10 | | NW | | | | | Raining | |
| Colorado, New York, N. Y. | 30.11 | 764.8 | 52 | 11.1 | 49 | 9.4 | 100 | ENE | 1 | 0.4 | | | 10 | | | 0.01 | 0.3 | | | Foggy | |
| Constitution N. 23° 59′, W. 37° 52′ | 30.10‡ | 764.5‡ | | | 74 | 23.3 | 86 | SE | | | 2 | | 7 | | Calm | | | Long | NNW | Fair | |
| Despatch, Genoa, Italy | 29.60‡ | 751.5‡ | | | 63 | 17.2 | 72 | SE | | | 1 | | 5 | | N | | | Smooth | | Fair | |
| Franklin, Norfolk, Va. | *30.20 | 767.1 | 70 | 21.1 | 68 | 20.0 | 84 | SSE | 4.8 | 2.1 | | | 10 | | SSE | 0 | 0 | | | Cloudy | |
| Gettysburg, Genoa, Italy | *29.62‡ | 752.3‡ | | | 59 | 15.0 | 94 | Calm | | | 0 | | 10 | | | 0.7 | 18. | Smooth | | Overcast | |
| Hartford, Buenos Ayres, S. A. | *29.95 | 760.7 | 65 | 18.3 | 72 | 22.2 | 60 | S | | | 4 | | Fog | | | 0 | 0 | Smooth | | Cloudy | |
| Michigan, Erie, Pa. | †29.94 | 760.5 | | | 49.5 | 9.7 | 96 | W | | | 2 | | 10 | | | | | | | Overcast | |
| Monocacy, Shanghai, China | *29.98‡ | 761.5‡ | | | 56 | 13.3 | 94 | ESE | | | 2 | | 0 | | | | | | | Clear | |
| Monongahela Yokohama, Japan | *30.09‡ | 764.3‡ | | | 63 | 17.2 | 78 | SSW | | | 1 | | ck | | | 0 | 0 | | | Overcast | |
| New Hampshire, Port Royal, S. C. | *30.11 | 764.8 | 70 | 21.1 | 69 | 20.6 | 95 | WNW | 18 | 8.0 | | | 10 | | WNW | 0.61 | 15.5 | | | Cloudy | |
| Onward, Callao, Peru | †*30.08 | 764.0 | | | 65 | 18.3 | 89 | Var. | | | 1 | | 5 | | | | | Smooth | W | Fair | |
| Palos, Shanghai, China | *30.03 | 762.8 | 60 | 15.6 | 53 | 11.7 | 93 | SSE | | | 2 | | 0 | | | | | | | Clear | |
| Passaic, Washington, D. C. | | | | | 58 | 14.4 | 88 | NE | | | 2 | | 2 | | S | | | | | Clear | |
| Pensacola. Callao, Peru | 29.98‡ | 761.5‡ | | | 65 | 18.3 | 89 | Calm | 0 | 0 | | | 2 | | | 0 | 0 | Smooth | | Hazy | |
| Plymouth. Portsmouth, N. H. | 30.13‡ | 765.3‡ | | | 47 | 8.3 | 85 | SSW | | | 2 | | 10 | | | | | | | Cloudy | |
| Portsmouth, Hampton Roads, Va. | 30.07‡ | 763.8‡ | | | 62 | 16.7 | 88 | SSE | | | 3 | | 8 | | | 0 | 0 | Slight | S;E | Cloudy | |
| Powhatan, Norfolk, Va. | 30.01‡ | 762.2‡ | | | 67 | 19.4 | 84 | S | | | 1 | | 0 | | | | | | | Clear. | |
| Quinnebaug, Tunis, Africa | 29.86‡ | 758.2‡ | | | 65 | 18.3 | 84 | ENE | | | 2 | | 8 | | W | | | | | Fair | |
| Ranger. Amoy, China | *29.86‡ | 758.9‡ | | | 74 | 23.3 | 86 | SE | | | 1 | | 0 | | | | | Smooth | | Clear | |
| Richmond. N. lat. 17′. E. 102° 48′ | 29.78‡ | 756.4‡ | | | 84 | 26.9 | 79 | NNW | | | 1 | | 2 | | NNW | 0.2 | 5. | Smooth | NNW | Fair | |
| Rio Bravo, Brownsville, Texas | 30.00 | 762.0 | 76 | 24.4 | 76 | 24.4 | 91 | S | | | 1 | | 10 | | S | | | | | Cloudy | |
| Santee, Annapolis, Md. | 30.03‡ | 762.8‡ | | | 56 | 13.3 | 94 | N | | | 0–1 | | 10 | | SW | 0 | 0 | | | Misty | |
| Saratoga, Horta Bay, Fayal, Azores | 30.20‡ | 767.1‡ | | | 68 | 20.0 | 84 | S | | | 2 | | 0 | | | 0 | 0 | Mod'ate | | D. clouds | |
| St. Louis, League Island, Pa. | 30.00 | 762.0 | 61 | 16.1 | 52 | 11.1 | 100 | E | 5 | 2.2 | | | 10 | | | 0 | 0 | | | Foggy | |
| Trenton Villafranca, France | *29.55‡ | 750.6‡ | | | 63 | 17.2 | 89 | SE | | | 3 | | 0 | | | 0 | 0 | Mod'ate | S | Clear | |
| Tuscarora. Chipequa Bay, Mexico. | *29.89‡ | 759.2‡ | | | 80 | 26.7 | 70 | N | | | 2 | | 0 | | | 0 | 0 | Smooth | | Hazy | |
| Vandalia, N. 17° 57′, W. 75° 30′ | 29.98‡ | 761.5‡ | | | 78 | 25.6 | 91 | ESE | | | 3 | | 10 | | ESE | Blank | Blank | Smooth | | Cloudy | |
| Wabash, Boston, Mass. | 30.21‡ | 767.3‡ | | | 49 | 9.4 | 93 | SE | 2 | 0.9 | | | 10 | | | 0 | 0 | | SW | Hazy | |
| Wyoming, Athens, Greece | *30.01‡ | 762.2‡ | | | 69 | 20.6 | 100 | SSW | | | 1–2 | | 2 | | SW | | | Smooth | | Cloudy | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From — | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **CUNARD LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of Ch. G. Francklyn, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Samaria, Capt. T. Roberts, N. 49° 58′, W. 23° 10′....† | ..... | 30.12‡ | 765.0‡ | 56 | 13.3 | ..... | SE | ..... | ..... | 4 | ..... | 1 | ..... | SE | Long | ..... | SE | Cloudy..... | M. C. Miles. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—†Aneroid.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. China..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| S. S. City of New York..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Cobb. |
| S. S. City of Panama..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Seabury. |
| S. S. City of Peking..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Berry. |
| S. S. City of Sydney..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Dearborn |
| §S. S. City of Tokio Capt. Maury N. 33° 53′, E. 137° 13′.... | ..... | 30.12‡ | 765.0‡ | 64 | 17.8 | ..... | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | Smooth | ..... | Blue sky..... | L. B. Walls. |
| S. S. Colima..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. R. Searle. |
| S. S. Costa Rica..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Whitebury |
| S. S. Dakota, Capt. H. G. Morse, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | W. Luscombe. |
| S. S. Georgia..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Connoliv |
| S. S. Granada, Capt. Austin. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F.W.Hart, 1st Officer. |
| S. S. Wilmington..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Fuller. |
| S. S. Zealandia, Sydney, N. S. W..... | ..... | 30.08‡ | 764.0‡ | ..... | ..... | ..... | NNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Fine..... | R. C. Ghest, 1st Officer. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office. §The date of the S. S. City of Tokio is uncertain, and may be in error one day.

## WHITE STAR LINE MARINE SERIES.

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| S. S. Adriatic..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. W. Jenning. |
| S. S. Baltic..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Perry. |
| S. S. Britannic..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Gleadell. |
| S. S. Celtic..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Kennedy. |
| S. S. Germanic..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Capt. L. Meyer. N. 33° 28′, W. 168° 41′..... | ..... | 30.36‡ | 771.1‡ | 59 | 15.0 | 76 | NE | ..... | ..... | 6 | ..... | n | ..... | ..... | 0 | Mod'ate | NNE | D. clouds..... | D. A. Joyce. |
| S. S. Gaelic,. ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. H. Kidley. |
| S. S. Oceanic, Capt. J. Metcalf. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. G. Cameron. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to distin 12; no otion between upper and lower clouds. The position given for the S. S. Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Andressen. |
| S. S. Berlin..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. T. H. Lamke. |
| S. S. Braunschweig, Off Beachy Head, Eng. | ..... | 30.01‡ | 762.2‡ | 50.0 | 10.0 | 79 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | Mod'ate | N | Hazy ..... | Capt. C. Undütsch. |
| S. S. Leipzig,..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. F. Pfeiffer. |
| S. S. Nürnberg..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Jaeger. |
| S. S. Ohio, N. 48° 27′, W. 19° 27′..... | ..... | 30.27‡ | 768.8‡ | ..... | ..... | ..... | SSE | ..... | ..... | 4 | ..... | 2 | ..... | NW | ..... | Smooth | NW | Fair ..... | Capt. G. Meyer. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Corrections for temperature instrumental error and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

| NAMES OF VESSELS. | True course toward. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the last 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | L'w'r | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Liverpool, Eng. | | 30.15‡ | 765.8‡ | 49 | 9.4 | | ENE | | | 6 | | 9 | | ENE | Heavy. | | | Cloudy | Captain Sargent. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | | | | | | | | | | | | | | | | | | | G. H. Dodge. |
| | | | | | | | | | | | | | | | | | | | |
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Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for the Pennsylvania, the cloud-direction as toward instead of from; sea-swell in general terms, as published; rain-fall for the Indiana and Ohio in general terms. ‡Corrections for temperature, instrumental error and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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**ALLAN LINE MARINE SERIES.**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | J. Powell, 4th Officer. |
| S. S. Peruvian | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office.

**MARINE SERIES. (Miscellaneous.)**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, N. 40° 31,' W. 71° 39' | | 30.12‡ | 765.0‡ | 50 | 10.0 | 93 | SE | 7 | 3.1 | | | Fog | | | 0 | Short | | Dense fog | Capt. James Jorgensen. |
| Brigantine "George of Halifax" | | | | | | | | | | | | | | | | | | | Willard N. Pratt. |
| Schooner Harry and Fred, N. 28° 05',? W. 69° 05'? | | 29.98‡ | 761.5‡ | | | | E | 6 | 2.7 | | | 8 | | E | | Smooth | | Cloudy | Capt. George Gardner. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Corrections for temperature, instrumental error and elevation applied at this office.

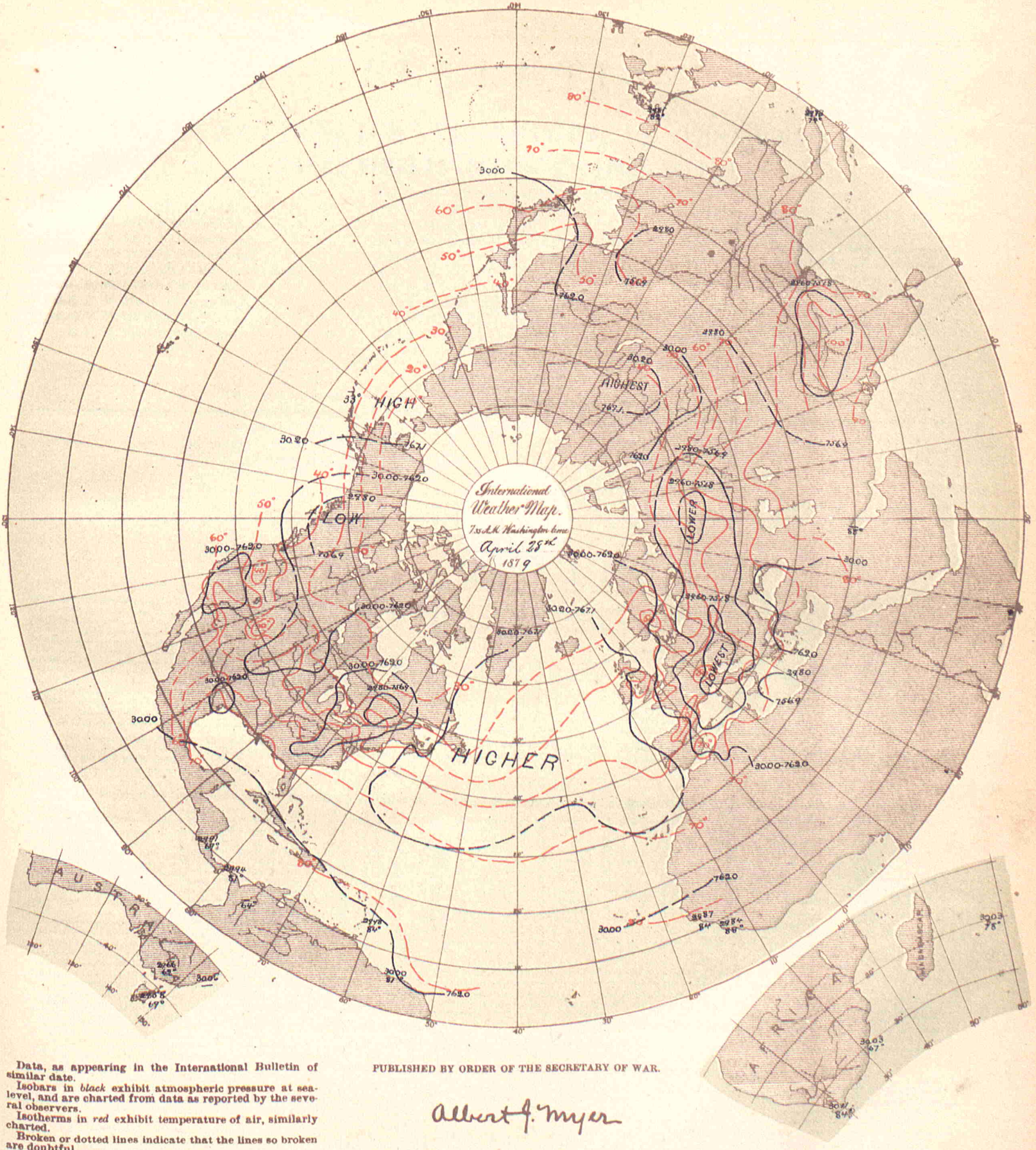
Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively by the letters c, k, s, n, d, f, p, hz., fg. and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 29, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 30.15 | 765.9 | 71.2 | 21.8 | 67 | WNW | | | 1 | | 0 | | | 0 | 0 | Clear | Kesxuche. |
| Algiers | | | 30.01 | 762.3 | 68.0 | 17.2 | 63 | W | | | 3 | | 0 | | | Inap. | Inap. | Clear | Tourlliere. |
| La Calle | | | 29.93 | 760.1 | 63.3 | 17.4 | 76 | NW | | | 6 | | 5 | | | 0.087 | 2.2 | Cloudy | Foufrede. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 30.01 | 762.2 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 30.10 | 764.4 | 60.8 | 16.0 | 82 | N | | | 5 | | 8 | | | 0 | 0 | Very cloudy | Herbin. |
| Tebessa | | | 30.09 | 761.9 | 62.7 | 11.5 | 50 | NNW | | | 7 | | 10 | | | 0.257 | 7.3 | Raining | Watrin. |
| Geriville | | | 30.03 | 762.8 | 57.2 | 14.0 | 33 | NW | | | 5 | | 5 | | | 0 | 0 | Cloudy | Brugniaux. |
| Laghouat | | | 30.06 | 763.6 | 65.5 | 18.6 | 42 | NW | | | 5 | | 0 | | | 0 | 0 | Clear | Bertrand. |
| Biskra | | | 30.00 | 762.0 | 76.3 | 24.6 | 27 | NW | | | 1 | | 2 | | | 0 | 0 | Fair | Chanvaux. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.22 | 742.1 | 29.77 | 756.1 | 49.8 | 9.9 | 70 | E | | | 1 | | 10 | | | 0.024 | 0.6 | Raining | Prof. Ivan Stosir. |
| Cracow, I. R. Observatory | 29.08 | 738.6 | 29.86 | 758.5 | 42.8 | 6.0 | 82 | W | | | 2 | | 10 | | | 0.071 | 1.8 | | Dr. Wierzbiski. |
| Eperies | 28.85 | 732.9 | 29.74 | 755.3 | 48.6 | 9.2 | 91 | N | | | 2 | | 10k | | N | 0.484 | 12.30 | | Julius Mikolik. |
| Gratz | 28.58 | 725.9 | 29.84 | 757.6 | 48.7 | 9.3 | 79 | SSE | | | 3 | | 10 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.31 | 719.1 | 29.70 | 754.3 | 64.8 | 18.2 | 56 | SSE | | | 4 | | 5 | | | 0.167 | 4.25 | | Prof. A. Gottschling. |
| Kremsmünster | 28.59 | 726.1 | 29.97 | 761.1 | 40.1 | 4.5 | 86 | W | | | 3 | | 10 | | | 0.217 | 5.5 | | Prof. C. Wagner. |
| Lemberg | 28.78 | 730.9 | 29.77 | 756.2 | 45.5 | 7.5 | 90 | NE | | | 1 | | 10 | | | 0.394 | 10.0 | | Dr. T. Stanecki. |
| Pola | 29.50 | 761.5 | 29.70 | 754.3 | 59.4 | 15.2 | 64 | WNW | | | 1 | | 6 | | | 0.201 | 5.1 | | I.R.Hydrographic Office |
| Szathmar | 29.30 | 744.3 | 29.76 | 755.9 | 61.2 | 16.2 | 59 | E | | | 3 | | 6 | | | 0.205 | 5.2 | Thunder | Julius Csics, S. J. |
| Szegedin | 29.42 | 747.2 | 29.69 | 754.1 | 61.3 | 16.8 | 85 | W | | | 2 | | 8 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 29.64 | 752.8 | 29.74 | 755.4 | 57.9 | 14.4 | 55 | ENE | | | 2 | | 7 | | | 0 | 0 | | P. Busin. |
| Vienna | 29.16 | 740.5 | 29.88 | 758.9 | 46.0 | 7.8 | 61 | NW | | | 3 | | 10 | | | 0.161 | 4.1 | | I. R. Central Met. Obs'y |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 30.00 | 762.0 | 30.21 | 767.2 | 47.7 | 8.7 | 59 | N | | | 4 | | 10 | | N | 0.002 | 0.05 | | Royal Observatory. |
| Furnes | 30.29 | 769.3 | 30.31 | 769.9 | 46.9 | 8.3 | 66 | NE | | | 4 | | 4 | | | 0.043 | 1.1 | | M. E. de Cae. |
| Maeseyck | 30.07 | 763.7 | 30.19 | 766.9 | 48.4 | 9.1 | 71 | N | | | 4 | | 10 | | | 0 | 0 | | M. Pierrot. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

**Entered at the Post Office at Washington, D. C., as Second-Class Matter.**

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upper 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.23 | 767.8 | 30.33 | 770.4 | 43.0 | 6.1 | ..... | NNE | 9 | 4.0 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | D. clouds..... | W. Boswell. |
| Ardrossan | 30.28 | 769.1 | 30.30 | 769.6 | 49 | 9.4 | ..... | WNW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.39 | 771.9 | 50.0 | 10.0 | ..... | N | 4 | 1.8 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 30.32 | 770.1 | 52.3 | 11.3 | ..... | W | 10 | 4.5 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 30.32 | 770.1 | 50.7 | 10.4 | ..... | WSW | 12 | 5.4 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Thomas Mackereth. |
| Bradford, Yorkshire | 29.90 | 759.4 | 30.30 | 769.6 | 50.1 | 10.1 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.95 | 760.7 | 29.98 | 761.5 | 84 | 28.9 | ..... | NE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 30.31 | 769.9 | 53.0 | 11.7 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. Todd. [C. |
| Cardington | ..... | ..... | 30.32 | 770.1 | 52.0 | 11.1 | ..... | NE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | John McLaren. |
| Chatham, School M. E. | 30.20 | 767.1 | 30.33 | 770.4 | 48.1 | 8.9 | ..... | Calm | ..... | ..... | 0 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.79 | 731.3 | 30.29 | 769.4 | 48.0 | 8.9 | ..... | NE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 30.31 | 769.9 | 30.36 | 771.1 | 49 | 9.4 | ..... | N | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 30.28 | 769.1 | 30.30 | 769.6 | 48 | 8.9 | ..... | NE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | ¾ clouded... | J. Costello. |
| Falmouth, Observatory | 30.16 | 766.1 | 30.40 | 772.1 | 50.3 | 10.2 | ..... | SE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| Fort Napier, (Natal) | 27.69 | 703.3 | 30.00 | 762.0 | 70.0 | 21.1 | ..... | N | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.64 | 752.8 | 29.87 | 758.7 | 84 | 28.9 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's college | ..... | ..... | ..... | ..... | 54 | 12.2 | ..... | SSW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy ..... | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 30.06 | 763.5 | 30.11 | 764.8 | 68.6 | 20.3 | ..... | W | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 30.09 | 764.3 | 30.30 | 769.6 | 50.1 | 10.1 | ..... | N | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. [C. |
| Great Yarmouth | 30.30 | 769.6 | 30.30 | 769.6 | 46 | 7.8 | ..... | NNE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.15 | 765.8 | 30.33 | 770.4 | 49.9 | 9.9 | ..... | NNE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | The staff, for G.B. Airy. |
| Guernsey | 30.11 | 764.8 | 30.33 | 770.4 | 50.6 | 10.3 | ..... | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Dr. S.E.Hoskins, F.R.S. |
| Helston | 30.41 | 772.4 | 30.53 | 775.4 | 67 | 13.9 | ..... | SW | ..... | ..... | 1 | ..... | 4k | ..... | ..... | 0 | 0 | Very fine..... | M. P. Moyle. |
| Holyhead | 30.31 | 769.9 | 30.36 | 771.1 | 48 | 8.9 | ..... | NW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | John Tilston. |
| Jersey | 30.05 | 763.3 | 30.35 | 770.9 | 52.7 | 11.5 | ..... | NE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds..... | J. Fisher. |
| Kew, Observatory | 30.30 | 769.6 | 30.33 | 770.4 | 48.9 | 9.4 | ..... | N | 3 | 1.3 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Threatening | The Meteorological Of. |
| Leicester, Museum | 30.07 | 763.8 | 30.33 | 770.4 | 50.2 | 10.1 | ..... | NW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.66 | 753.4 | 29.74 | 755.4 | 64 | 17.8 | ..... | NW | ..... | ..... | 2 | ..... | 3k | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 30.20 | 767.1 | 30.29 | 769.4 | 47 | 8.3 | ..... | E | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 29.98 | 761.5 | 79.8 | 26.3 | ..... | S | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 30.14 | 765.5 | 30.33 | 770.4 | 52.7 | 11.5 | ..... | S | ..... | ..... | 2 | ..... | 10k | ..... | WNW | 0 | 0 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.80 | 756.9 | 30.34 | 770.6 | 48.7 | 9.3 | ..... | NW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Misty..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.34 | 770.6 | 50 | 10.0 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | H. E. Bellamy. |
| Plymouth | 30.27 | 768.8 | 30.35 | 770.9 | 55.6 | 13.1 | ..... | S | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | John Merrifield. |
| Roche's Point | 30.31 | 769.9 | 30.39 | 771.9 | 54 | 12.2 | ..... | SW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | Wm. Kennedy. |
| Saint Ann's Head | 30.21 | 767.3 | 30.38 | 771.6 | 50 | 10.0 | ..... | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 43.4 | 6.3 | ..... | NW | 12 | 5.4 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Hailing..... | Rev C.Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.81 | 757.2 | 29.87 | 758.7 | 74.0 | 23.3 | ..... | S | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds... | W. H.Lyne. |
| Sheffield | 30.04 | 763.0 | 30.22 | 767.6 | 54.4 | 12.4 | ..... | SE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | Inap | Inap. | D. clouds..... | W. F. Cooper. |
| Silloth Rectory | 30.28 | 769.1 | 30.31 | 769.9 | 53.2 | 11.8 | 55 | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.015 | 0.38 | D. clouds..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.91 | 759.7 | 30.32 | 770.1 | 52.1 | 11.2 | ..... | WSW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Misty..... | Rev. S. J. Perry. |
| Stratfield, Turgiss | 30.11 | 764.8 | 30.33 | 770.4 | 54.7 | 12.6 | ..... | N | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | C. H. Griffith, F. M. S. |
| Truro, Royal Institution | 30.37 | 771.4 | 30.40 | 772.1 | 60 | 15.6 | ..... | S | ..... | ..... | 6 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | 30.35 | 770.9 | 30.38 | 771.6 | 54.7 | 12.6 | ..... | SW | 9 | 4.0 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | The Meteorological Of. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 29.94 | 760.5 | 29.98 | 761.5 | 73.7 | 23.2 | 58 | S | 25 | 11.2 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Fine..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.54 | 760.3 | 53 | 11.6 | 82 | SE | ..... | ..... | 3 | ..... | 10kn | ..... | ..... | 0.40 | 10.2 | Raining ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 30.34 | 770.6 | 48.7 | 9.3 | ..... | E | ..... | ..... | 1 | 9ck | ..... | W | ..... | 0 | 0 | Fine..... | Andrew Gibb. |
| Mauritius, Observatory | 29.84 | 757.9 | 30.03 | 762.8 | 75.0 | 23.9 | 82 | ESE | 12.0 | 5.4 | ..... | ..... | 10 | ..... | E | ..... | ..... | Showery..... | C. Meldrum. |
| Melbourne, Observatory | 29.94 | 760.5 | 30.03 | 762.8 | 51.1 | 10.6 | 92 | N | 11 | 4.9 | ..... | ..... | 7 | WNW | ..... | 0.14 | 3.6 | Fine ..... | R. L. J. Ellery. |
| Monach Lt-house, (Hebrides) | ..... | ..... | 30.35 | 770.9 | 47 | 8.3 | ..... | SW | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.24 | 768.1 | 40 | 4.4 | ..... | NE | ..... | ..... | 4 | 2 | 4 | Calm | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m

| British Marine Series. Vessels | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upper 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 42', E. 29° 36' | ..... | ..... | 29.92‡ | 760.0‡ | 68 | 20.0 | ..... | Calm | ..... | ..... | 0 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Capt. W. J. L. Wharton. |
| Brig Alliance | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Scott. |
| S. S. Amanda. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. B. Boyes. |
| Barque Belle-Isle | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. J. Brown. |
| Ship British Commodore, N. 38° 00', W. 65° 05' | ..... | ..... | 30.16 | 766.1 | 67 | 19.4 | ..... | S | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 3 | S;E | D. clouds..... | Capt. J. W. Thorne. |
| —— City of Agra, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Thos. Young. |
| Barque Commewyne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. Buchan. |
| Barque Fedalina | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. L. Fox. |
| Barque Mertole. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. W. Turner. |
| S. S. Nizam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Barlow. |
| S. S. Strathleven, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. W. Pearson. |
| S. S. Wyberton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W.R. McMontry |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have generally been carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upper. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.22 | 666.0 | 29.94 | 760.5 | 69.8 | 21.0 | 93 | Calm | ..... | ..... | 0 | ..... | 10s | ..... | ..... | 0.93 | 23.6 | ..... | Federico Maison |

NOTE.—For St. Jose the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches for an altitude of 1,145 meters, or 3,756.6 feet; the distinction between the upper and lower clouds is not always made; the rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.98 | 761.4 | 30.02 | 762.6 | 45.0 | 7.2 | 42 | SE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 30.07 | 763.7 | 30.09 | 764.2 | 43.2 | 6.2 | 75 | NNW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.72 | 754.8 | 29.76 | 755.9 | 34.3 | 1.3 | 94 | S | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Rain & Snow |
| Stykkisholm, (Iceland) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 30.32 | 770.0 | 30.35 | 770.9 | 43.9 | 6.4 | 47 | N | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.88 | 758.9 | 30.05 | 763.2 | 46.0 | 7.8 | 64 | WNW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.72 | 754.9 | 30.27 | 768.9 | 50.7 | 10.4 | 60 | NE | ..... | ..... | 2 | ..... | 2 | ..... | NE | 0 | 0 | Slightly cl'dy | Collignon, Director. |
| Amiens, Normal School | 30.10 | 764.5 | 30.21 | 767.3 | 58.3 | 14.6 | 72 | NW | ..... | ..... | 1 | ..... | 2 | ..... | ENE | 0 | 0 | Slightly cl'dy | Bonvallet, Director |
| Avignon, Normal School | 29.73 | 755.2 | 29.81 | 757.2 | 59.0 | 15 | 58 | N | ..... | ..... | 4 | ..... | 10 | ..... | N | 0 | 0 | Covered | Giraud, Director |
| Bar-sur-Seine | 29.54 | 750.3 | 30.10 | 764.5 | 54.0 | 12.2 | 68 | NE | ..... | ..... | 1 | ..... | 6kn | ..... | NE | 0.398 | 10.1 | Cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.97 | 761.3 | 30.24 | 768.1 | 52.0 | 11.1 | 47 | N | ..... | ..... | ..... | ..... | 8 | ..... | NNE | 0 | 0 | Very cloudy | Frere Eugene Marie, Dr |
| Besançon, Normal School | 29.12 | 739.7 | 30.02 | 762.4 | 53.2 | 11.8 | 56 | NE | ..... | ..... | 4 | ..... | 8 | ..... | NE | 0.08 | 2. | Very cloudy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.12 | 739.6 | 30.03 | 762.8 | 55.2 | 12.9 | 66 | NE | ..... | ..... | 3 | ..... | cn | NE | N | 0.12 | 3. | ..... | Marlot, Director. |
| Bourges, Normal School | 29.52 | 749.7 | 30.07 | 763.8 | 52.5 | 11.4 | 63 | N | ..... | ..... | 4 | ..... | ckn | N | N | 0.43 | 11. | ..... | A. Waquet, Director |
| Brest, Naval Observatory | 30.04 | 763.1 | 30.29 | 769.3 | 53.2 | 11.8 | 45 | NE | ..... | ..... | 3 | ..... | 1 | ..... | NE | 0 | 0 | ..... | De Rermaree, Director |
| Carcassonne, Normal School | 29.74 | 755.5 | 30.17 | 766.2 | 50.9 | 10.5 | 77 | WNW | ..... | ..... | 2 | ..... | 8 | W | WNW | 0.31 | 8. | Covered | September, Director. |
| Caen, Normal School | 30.21 | 767.2 | 30.24 | 768.1 | 50.0 | 10 | 60 | NNE | ..... | ..... | 8 | ..... | 1 | ..... | NNE | 0.016 | 0.4 | Slightly cl'dy | Lair, Director. |
| Chartres, Normal School | 29.72 | 754.8 | 30.29 | 769.4 | 57.2 | 14 | 91 | N | ..... | ..... | 3 | ..... | 5 | ..... | SW | 0 | 0 | Cloudy | Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.87 | 758.6 | 30.18 | 766.6 | 53.2 | 11.8 | 50 | N | ..... | ..... | 4 | ..... | 5 | N | N | 0 | 0 | Cloudy | Jadot, Director. |
| Clermont-Fd., Puy de D. Obs | 28.70 | 728.9 | 30.08 | 763.9 | 50.7 | 10.4 | 62 | NW | ..... | ..... | 2 | ..... | 10 | ..... | N | 0.028 | 0.7 | ..... | Alluard, Director. |
| Commercy, Normal School | 29.24 | 742.7 | 30.11 | 764.9 | 50.2 | 10.1 | 31 | NW | ..... | ..... | 3 | ..... | 5ck | ..... | NW | 0 | 0 | Cloudy | Dr. Coulet, Director. |
| Commune de Grèasque* | 28.65 | 727.7 | 29.79 | 756.7 | 50.2 | 10.1 | 50 | NW | ..... | ..... | 2 | ..... | 8 | ..... | NW | 0 | 0 | ¾ covered | L. Kina, Director. |
| Grenoble, Normal School | 29.13 | 739.8 | 29.89 | 759.1 | 56.8 | 13.8 | 57 | NW | ..... | ..... | 3 | ..... | 8kn | ..... | NE | 0.232 | 5.90 | Very cloudy | Ablard, Director |
| La Roche-sur-Yon, N. School | 30.04 | 763.0 | 30.25 | 768.4 | 58.6 | 14.8 | 73 | N | ..... | ..... | 3 | ..... | 5 | ..... | N | 0 | 0 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.94 | 760.5 | 30.25 | 768.4 | 51.1 | 10.6 | 57 | NE | ..... | ..... | 4 | ..... | 5 | NE | NE | 0 | 0 | Cloudy | Poirrier, Director |
| Lons-Le-Saulnier, N. School | 29.04 | 737.6 | 29.98 | 761.5 | 52.0 | 11.1 | 56 | NE | ..... | ..... | 6 | ..... | 2ck | ..... | NE | 0.142 | 3.60 | Slightly cl'dy | A. Baudry, Director. |
| Lorient, Naval Observatory | 30.20 | 767.1 | 30.30 | 769.6 | 55.0 | 12.8 | 42 | NNE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0.004 | 0.1 | ..... | Lt T. Carré, Director. |
| Mâcon, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Galzin, Director. |
| Marseilles, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff |
| Mirecourt, Normal School | 28.99 | 736.4 | 30.06 | 763.4 | 50.5 | 10.3 | 72 | N | ..... | ..... | 3 | ..... | 2 | ..... | NE | 0 | 0 | Slightly cl'dy | Barbier, Director. |
| Nismes, Normal School | 29.61 | 752.0 | 29.80 | 756.9 | 62.6 | 17 | 33 | N | ..... | ..... | 6 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 28.84 | 732.4 | 29.90 | 759.5 | 58.6 | 12 | 65 | N | ..... | ..... | 4 | ..... | ..... | N | N | 0 | 0 | ..... | Cantier, Director. |
| Puy de Dome (Summit) Obs | 25.09 | 637.4 | ..... | ..... | 31.1 | — 0.5 | 100 | N | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 1.130 | 28.7 | Foggy | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.34 | 770.5 | 30.37 | 771.3 | 60.8 | 16.0 | 59 | N | ..... | ..... | 1 | ..... | 5 | NE | NE | 0 | 0 | ⅛ covered | Lt. E. Decante, Director. |
| Rouen, Normal School | 30.19 | 766.8 | 30.28 | 769.0 | 52.0 | 11.1 | 61 | NE | ..... | ..... | 2 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 30.27 | 768.9 | 30.30 | 769.7 | 54.5 | 12.5 | 62 | N | ..... | ..... | 3 | ..... | 1 | ..... | N | 0 | 0 | Clear | Lt. Hercouet, Director. |
| Saint Maur, (near Paris) | 30.04 | 763.0 | 30.21 | 767.2 | 54.1 | 12.3 | 42 | N | ..... | ..... | 3 | ..... | 8 | ..... | NNE | 0 | 0 | Very cloudy | E. Renou, Director. |
| Tarbes, Normal School | 29.16 | 740.6 | 30.27 | 768.9 | 44.6 | 7 | 71 | WSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.16 | 4. | Raining | T. Huguet, Director. |
| Toulouse, Observatory | 29.44 | 747.8 | 30.17 | 766.2 | 51.4 | 10.8 | 77 | NW | ..... | ..... | 6 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Mercadier Julier. |
| Versailles Observatory | 29.72 | 754.9 | 30.21 | 767.4 | 54.0 | 12.2 | 43 | NE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0.012 | 0.29 | ..... | Dr. A. Berigny, Director |
| Villefranche-sur-Saone, N.S. | 29.29 | 743.4 | 30.02 | 762.4 | 58.5 | 14.7 | 81 | N | ..... | ..... | 3 | ..... | 8 | ..... | N | 0.232 | 5.90 | Very cloudy | Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.80 | 757.0 | 29.83 | 757.7 | 79.2 | 26.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.20 | 5. | ..... | L'Abbé Marel 6si. |
| Lyons Obs'y, (Park Station) | 29.33 | 745.0 | 29.94 | 760.5 | 56.5 | 13.6 | 48 | NNW | ..... | ..... | 4 | ..... | 9 | ..... | NNW | 0.197 | 5.0 | Cloudy | Mr. Jays. |
| Mont-Louis | 24.78 | 629.5 | 30.10 | 764.4 | 34.2 | 1.2 | 67 | NW | 31.8 | 14.2 | ..... | ..... | 9 | ..... | ..... | 0.201 | 5.1 | ..... | M. Cave. |
| Nice | ..... | ..... | 29.73 | 755.2 | 62.2 | 16.8 | 73 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Dr. A. Nieper, Jr. |
| Paris, Montsouris Obs'y | 29.93 | 760.1 | ..... | ..... | 51.8 | 11.0 | 47 | N | ..... | ..... | 6 | ..... | 4 | ..... | NNE | 0.039 | 1.0 | ..... | Marié Davy, Director. |
| Perpignan | 29.88 | 759.0 | 29.99 | 761.7 | 56.5 | 13.6 | 41 | NW | 35.3 | 15.8 | ..... | ..... | 1 | ..... | N | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.46 | 570.5 | ..... | ..... | 29.3 | — 1.5 | ..... | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.304 | 7.72 | Snowy | Gen'l de Nansouty. |
| Tours | 30.00 | 761.9 | 30.19 | 766.9 | 56.8 | 13.8 | 40 | NE | ..... | ..... | 3 | ..... | 5 | ..... | NNE | 0.051 | 1.3 | ..... | Cousin-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 29.93 | 760.1 | 29.95 | 760.7 | 56.5 | 13.6 | 94 | ESE | 8.9 | 4.0 | ..... | 10 | ..... | ..... | ..... | 0 | 0 | Covered | Marc Dechevrens. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand, Nice and Grenasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a.m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p.m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet; Commune de Grèasque, 322 m, or 1,056.4 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit) 2,877 m., or 9,436.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185.0 millimeters, or 5 315 inches has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. | | Barometer. Reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. Direction. | Wind. Velocity. | | Wind. Force. | Clouds. Amount. | | Clouds. Direction. | | Rain-fall or melted snow in the past 24 hours. | | Weather. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0–10 | Up'er 0–10 | Low'r 0–10 | Upper. From— | Lower. From— | Inches. | Millimeters. | | |
| Bamberg | 29.11 | 739.5 | 29.96 | 760.9 | 48.9 | 9.4 | 37 | NE | | | 6 | | 5 | NE | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.85 | 758.2 | 30.03 | 762.7 | 48.9 | 8.9 | 47 | NE | | | 1 | | 8 | | | 0.020 | 0.5 | | Prof. Arndt. |
| Breslau | 29.41 | 747.0 | 29.94 | 760.4 | 40.8 | 4.9 | 84 | NNW | | | 4 | | 10 | NNW | | 0.011 | 0.27 | | Royal University Obs'y |
| Carlsruhe | 29.62 | 752.4 | 30.05 | 763.3 | 51.4 | 10.8 | 49 | NE | | | 2 | | 5 | N | | 0 | 0 | | Albert Senz. |
| Cassel | 29.52 | 749.8 | 30.13 | 765.3 | 46.0 | 7.8 | 73 | NNW | | | 5 | | 8 | W | | 0.017 | 0.42 | Rain & hail. | Dr. H. Möhl. |
| Crefeld | 29.97 | 761.3 | 30.13 | 765.4 | 49.1 | 9.5 | 46 | N | | | 5 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.73 | 755.1 | 30.10 | 764.5 | 51.4 | 10.8 | | NNE | | | 3 | | 10 | | | 0 | 0 | | Physical Society. |
| Freienwalde on the Oder | 29.98 | 761.4 | 30.02 | 762.4 | 42.1 | 5.6 | 82 | NNW | | | 3 | | 10ks | SE | N | 0.159 | 3.9 | | Assmann., M. D. |
| Friedrichshafen | 28.57 | 725.6 | 30.02 | 762.6 | 47.1 | 8.4 | 53 | NE | | | 6 | | 10 | NNE | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 30.00 | 761.9 | 30.07 | 763.7 | 49.6 | 9.8 | 37 | NNW | | | 3 | | 9k | | | 0 | 0 | Fair | Captain F. Hegeman. |
| Kiel | 30.04 | 763.0 | 30.06 | 763.4 | 48.9 | 9.4 | 36 | NNW | | | 2 | | 2 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.78 | 756.5 | 29.87 | 758.6 | 44.2 | 6.8 | 89 | N | | | 2 | | 8 | | | 0.079 | 2.0 | | Prof. E. Luther. |
| Köslin | | | 29.93 | 760.1 | 33.8 | 1.0 | | N | | | 4 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.61 | 752.0 | 30.03 | 762.8 | 47.1 | 8.4 | 45 | NNW | | | 2 | | 10 | N | | 0 | 0 | | Prof. Bruhns, Privy Councelor. |
| Memel, Naval School | 29.82 | 757.4 | 29.87 | 758.6 | 43.0 | 6.1 | 75 | NE | | | 2 | | 10 | | | | | | Skalweit. |
| Neufahrwasser | 29.91 | 759.8 | 29.93 | 760.2 | 37.4 | 3.0 | 93 | N | | | 2 | | 10 | | | 0.004 | 0.1 | Hazy | A. Lothes. |
| Posen | 29.65 | 753.2 | 29.95 | 760.7 | 39.4 | 4.1 | 83 | NW | | | 6 | | 10 | | | 0.004 | 0.1 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.53 | 750.0 | 30.09 | 764.2 | 48.6 | 9.2 | 62 | NE | | | 3 | | 10 | NE | | 0.047 | 1.21 | | Imp. University Observatory. |
| Stuttgart | 29.06 | 738.2 | 30.02 | 762.5 | 47.1 | 8.4 | 59 | W | | | 1 | | 10 | | | 0 | 0 | | Prof. Schoder. |
| Treves (Trier) | 29.55 | 750.6 | 30.08 | 763.9 | 52.0 | 11.1 | 36 | NW | | | 4 | | 5 | | | 0.006 | 0.14 | | Prof. Flesch. |
| Weissenburg (Bavaria) | 28.48 | 723.5 | 30.02 | 762.6 | 42.6 | 5.9 | 60 | NE | 2 | 1 | | | 8k | | NE | 0 | 0 | Hazy | Dr. Van Bebber |
| Wustrow, Naval School | 30.01 | 762.3 | 30.04 | 762.9 | 45.3 | 6.3 | 56 | N | | | 3 | | 8s | | | 0 | 0 | | E. Schütz, Dir. |
| GERMAN NAVAL SERIES. | | | | | | | | | | | | | | | | | | | |

NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.53 | 750.0 | 29.91 | 759.7 | 69.6 | 20.9 | | SW | | | 4.0 | | | | | | | Clear. | Dr. J. F. J. Schmidt. |

NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.67 | 753.5 | 29.72 | 754.8 | 84.3 | 29.1 | 72 | SW | | | | 4 | NW | | | 0 | 0 | D. clouds | |
| Beesa | | | | | 100.3 | 37.9 | 24 | WNW | 8.7 | 3.9 | | 3 | W | | | 0 | 0 | D clouds | |
| Bombay | 29.75 | 755.6 | 29.79 | 756.6 | 83.9 | 28.8 | 80 | WNW | 13 | 5.8 | | 0 | | | | 0 | 0 | Blue sky | |
| Poona | 27.78 | 705.6 | 29.72 | 754.9 | 93.2 | 34.0 | 31 | NW | | | | 2 | | | | 0 | 0 | D. clouds | |
| Lanore | 28.82 | 731.9 | 29.52 | 749.8 | 100.8 | 38.2 | 13 | W | 2.2 | 1.0 | | 3 | | | | 0 | 0 | Misty | |
| Belgaum | 27.31 | 693.6 | 29.80 | 757.0 | 84.6 | 29.2 | 64 | S | 19 | 8.5 | | 6 | E | E | | 0 | 0 | Threatening | |
| Roorkee | 28.68 | 728.6 | 29.54 | 750.3 | 100.9 | 38.3 | 13 | NW | 1.5 | 0.7 | | 5 | | | | 0 | 0 | D. clouds | |
| Agra | 29.05 | 737.9 | 29.58 | 751.4 | 105.1 | 40.6 | 12 | W | | | | 2 | | W | | 0 | 0 | | |
| Nagpur | 28.62 | 726.9 | 29.61 | 752.0 | 104.7 | 40.4 | 13 | Calm | 3.2 | 1.4 | | 3 | NE | | | 0 | 0 | D. clouds | |
| Lucknow | 29.20 | 741.6 | 29.56 | 750.7 | 102.5 | 39.2 | 23 | NNW | 2.8 | 1.2 | | 10 | | | | 0 | 0 | Overcast | |
| Allahabad | 29.30 | 744.1 | 29.59 | 751.7 | 103.6 | 39.8 | 14 | Calm | 2.9 | 1.3 | | 0 | | | | 0 | 0 | Blue sky | |
| Patna | 29.42 | 747.4 | 29.60 | 751.8 | 98.0 | 36.7 | 21 | Calm | 1.2 | 0.5 | | 0 | | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.66 | 702.5 | 29.59 | 751.6 | 96.3 | 35.7 | 8 | NNW | 6.2 | 2.8 | | 0 | | | | 0 | 0 | Blue sky | |
| Cuttack | 29.56 | 750.9 | 29.64 | 753.0 | 89.3 | 31.8 | | S | 9 | 4.0 | | 0 | | | | 0 | 0 | | |
| Calcutta (Alipore) | 29.62 | 752.4 | 29.64 | 753.0 | 87.0 | 30.6 | 74 | SSW | 8.0 | 3.6 | | 0 | | | | 0 | 0 | Blue sky | |
| Goalpara | 29.36 | 745.8 | 29.76 | 755.9 | 73.5 | 23.1 | 77 | E | 10.5 | 4.7 | | 0 | | | | 1.13 | 28.7 | Blue sky | |
| Chittagong | 29.68 | 753.8 | 29.77 | 756.1 | 85.9 | 29.9 | 75 | SSE | 9.7 | 4.3 | | 4 | | | | 0 | 0 | Squally | |
| Sibsagar | 29.46 | 748.2 | 29.80 | 756.8 | 72.5 | 22.5 | 88 | NE | 3.1 | 1.4 | | 10 | E | E | | 0.66 | 16.8 | D. clouds | |
| Jubbulpore | 28.30 | 718.7 | 29.60 | 751.8 | 102.7 | 39.3 | 12 | NW | 4.5 | 2.0 | | 7 | | E | | 0 | 0 | Overcast | |

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since observation of the preceding day.

## ITALIAN SERIES.

Furnished by the cooperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.39 | 746.6 | 29.80 | 757.0 | 54.0 | 12.2 | 67 | E | 4.3 | 1.9 | ..... | ..... | 10 | ..... | ..... | 0.917 | 23.3 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.21 | 742.0 | 29.73 | 755.1 | 61.2 | 16.2 | 53 | SSW | ..... | ..... | 2 | ..... | 8 | SSE | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Padua | 29.64 | 752.9 | 29.75 | 755.7 | 52.7 | 11.5 | 85 | N | 11.2 | 5.0 | ..... | ..... | 10 | N | ..... | 0.220 | 5.6 | ..... | Prof. Dott. Lorenzoni. |
| Moncalieri | 28.89 | 733.7 | 29.79 | 756.6 | 58.3 | 14.6 | 64 | WSW | 1.8 | 0.8 | ..... | ..... | 10 | NNE | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.51 | 749.6 | 29.70 | 754.5 | 61.2 | 16.2 | 50 | N | 7.4 | 3.3 | ..... | ..... | 8 | N | ..... | 0.035 | 0.9 | ..... | Prof. G. M. Garibaldi |
| Mondovi | 27.86 | 707.6 | 29.76 | 755.9 | 52.7 | 11.5 | 59 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.280 | 7.1 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.64 | 752.8 | 29.69 | 754.0 | 56.7 | 13.7 | 73 | NE | 12.5 | 5.6 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.41 | 747.0 | 29.67 | 753.5 | 59.0 | 15.0 | 72 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.138 | 3.5 | ..... | Cav. F. Meucci |
| Leghorn | 29.56 | 750.7 | 29.64 | 752.9 | 51.1 | 10.6 | 52 | NE | ..... | ..... | 6 | ..... | 4 | E | ..... | 0.295 | 7.5 | ..... | Prof. P. Monte. |
| Rome | 29.51 | 749.6 | 29.69 | 754.0 | 52.3 | 11.3 | 84 | N | 15.0 | 6.7 | ..... | ..... | 10 | ..... | ..... | 2.598 | 66.0 | ..... | Prof. P. S. Ferrari. |
| Lecce | 29.45 | 748.1 | 29.70 | 754.5 | 63.7 | 17.6 | 80 | N | 15.0 | 6.7 | ..... | ..... | 10 | N | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.85 | 732.9 | 29.73 | 755.2 | 55.8 | 13.2 | 75 | NW | 1.3 | 0.6 | ..... | ..... | 10 | ..... | ..... | 0.201 | 5.1 | ..... | Prof. D. Conti. |
| Cagliari | 29.50 | 749.4 | 29.70 | 754.3 | 57.7 | 14.3 | 63 | NW | ..... | ..... | 4 | ..... | 10 | W | ..... | 0.055 | 1.4 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.52 | 749.7 | 29.77 | 756.1 | 61.9 | 16.6 | 58 | WSW | 4.9 | 2.2 | ..... | ..... | 6 | ..... | ..... | 0.016 | 0.4 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.64 | 752.9 | 29.71 | 754.7 | 66.2 | 19.0 | 41 | SE | 3.8 | 1.7 | ..... | ..... | 7 | W | ..... | 0.008 | 0.2 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.17 | 740.8 | 29.72 | 754.9 | 60.4 | 15.8 | 65 | WSW | 5.6 | 2.5 | ..... | ..... | 8 | ..... | ..... | 1.457 | 37.0 | ..... | Prof. Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amounts of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.04 | 763.0 | 30.06 | 763.5 | 59.5 | 15.3 | 94 | Calm | 0 | 0 | ..... | ..... | 9ck | ..... | ..... | 0.005 | 0.13 | Cloudy | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.83 | 757.7 | 30.03 | 762.7 | 60.7 | 15.9 | 94 | E | 0.6 | 0.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | S. Takehayashi. |
| Tokei, (Yeddo) Observatory | 29.98 | 761.5 | 30.05 | 763.3 | 59.9 | 15.5 | 84 | SSW | 7.7 | 3.4 | ..... | 1ck | 0 | NW | ..... | 0 | 0 | Clear | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the cooperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.11 | 637.9 | 30.16 | 766.0 | 55.8 | 13.2 | 37 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | Prof. L. Perez. |
| Leon | 24.48 | 622.0 | 30.14 | 765.6 | 62.4 | 16.9 | 63 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.18 | 588.7 | 30.28 | 769.0 | 49.8 | 9.9 | 44 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 37.6 | 14.2 | 44 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. V. de Leon, M. E. |
| Tlacotalpam | 30.01 | 762.2 | 30.02 | 762.5 | 77.2 | 25.1 | 90 | NNW | ..... | ..... | 1 | 1 | 3 | N | NE | 0 | 0 | ½ clouded | M. M. Chazaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | 22.62 | 574.5 | 30.24 | 768.2 | 58.5 | 14.7 | 29 | ENE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | J. Castrillon. |
| Puebla, (Catholic Institute) | 23.45 | 595.7 | 30.22 | 767.5 | 39.7 | 4.3 | 67 | N | 0.4 | 0.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.37 | 720.5 | 30.02 | 762.5 | 74.1 | 23.4 | 52 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 30. | ..... | ..... | ..... | Antonio Guerra y Guerra. |

NOTE.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,167.8m., or 7,112.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 507.3 m., or 1,664.4 ft. The data are published as given, except the conversions, which have been revised; the instrumental correction —0.88 mm., has been applied at this office to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.27 | 768.9 | 30.27 | 768.9 | 47.5 | 8.6 | ..... | N | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.079 | 2.0 | ..... | |
| Groningen | 30.12 | 765.1 | 30.18 | 766.5 | 44.8 | 7.1 | ..... | N | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 30.21 | 767.3 | 30.21 | 767.3 | 42.4 | 5.8 | ..... | NNW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.024 | 0.6 | ..... | |
| Hellevoetsluis | 30.24 | 768.0 | 30.24 | 768.0 | 49.1 | 9.5 | 57 | N | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.17 | 766.3 | 30.22 | 767.5 | 47.1 | 8.4 | 55 | NE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | H. v. d. Brink. |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.01 | 762.3 | 30.07 | 763.7 | 46.4 | 8.0 | 46 | NW | 5.4 | 2.4 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 30.09 | 764.2 | 30.13 | 765.2 | 38.5 | 3.6 | 60 | W | 9 | 4 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.92 | 759.9 | 30.07 | 763.7 | 49.1 | 9.5 | 38 | WSW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.99 | 761.8 | 30.04 | 762.9 | 29.8 | — 1.2 | 74 | SW | 9 | 4 | ..... | ..... | 10 | ..... | ..... | 0.354 | 9.0 | Hailing | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra (Azores) | 30.06 | 763.4 | 30.24 | 768.2 | 63.5 | 17.5 | 84 | S | 1.8 | 0.8 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.22 | 742.3 | 30.25 | 768.3 | 62.6 | 17.0 | 34 | NW | 15.4 | 6.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. A.M. R. dos Santos. |
| Funchal (Madeira) | 30.17 | 766.2 | 30.25 | 768.4 | 67.3 | 19.6 | 68 | SW | 4.3 | 1.9 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.94 | 760.5 | 30.30 | 769.5 | 64.0 | 17.8 | 47 | NNW | 11.2 | 5.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada (Azores) | 30.21 | 767.3 | 30.28 | 769.1 | 65.8 | 18.8 | 75 | SSE | 13.0 | 5.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bártholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd.t. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| Duque da Terceira, San Jose de Bissao, Senegambia | ..... | ..... | 30.06 | 763.5 | 75.2 | 24 | ..... | W | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 1 | ..... | Blue sky | C.C.da Fonseca Ferreira, Comd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, S. 6° 48′, E. 11° 46′ | ..... | ..... | 29.81 | 757.1 | 83.3 | 28.5 | ..... | SSE | ..... | ..... | 3 | ..... | 4 | ..... | SE | 1 | SW | D. clouds | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa, Porto de Bulama, Senegambia | ..... | ..... | 29.87 | 758.6 | 84.2 | 29.0 | ..... | SW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 1 | ..... | D. clouds | A. Ferreira, 2d Lt |
| Sá da Bandeira | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 29.92 | 760.1 | 79.5 | 26.4 | ..... | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 1 | SE | Blue sky | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.42 | 747.3 | 29.85 | 758.2 | 46.1 | 7.3 | 74 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.38 | 746.3 | 29.80 | 757.0 | 49.8 | 9.9 | 68 | NNW | 11 | 5 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | Heavy clouds | Astronomical Obs. |
| Dorpat | 29.66 | 753.4 | 29.91 | 759.7 | 41.6 | 5.3 | 65 | NE | 11 | 5 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.91 | 759.6 | 29.92 | 760.0 | 38.3 | 3.5 | 57 | NE | 13 | 8 | ..... | ..... | 9kn | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.00 | 736.6 | 29.63 | 752.6 | 52.9 | 11.6 | 94 | Calm | 0 | 0 | ..... | ..... | 10ksn | ..... | ..... | ..... | ..... | Raining | Physical Cabinet. |
| Nikolaiev | 29.79 | 756.8 | 29.87 | 758.6 | 67.8 | 19.9 | 55 | S | 22 | 10 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.02 | 762.6 | 30.04 | 763.1 | 62.2 | 16.8 | 88 | SSE | 9 | 4 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.26 | 743.1 | 29.79 | 756.6 | 63.9 | 17.7 | 41 | S | 9 | 4 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.73 | 755.1 | 29.93 | 760.2 | 72.1 | 22.3 | 33 | S | 22 | 10 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.01 | 762.2 | 30.03 | 762.7 | 37.2 | 2.9 | 61 | WNW | 2 | 1 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.70 | 729.0 | 30.05 | 763.3 | 81.1 | 27.3 | 39 | SE | 9 | 4 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.21 | 767.2 | 30.12 | 765.1 | 78.3 | 25.7 | 25 | WSW | 4 | 2 | ..... | ..... | 1c | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.51 | 749.6 | 29.98 | 761.4 | 61.8 | 16.3 | 60 | SW | 11 | 5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light rain | Cand. Fatjanow. |
| Kasan | 29.63 | 752.5 | 29.89 | 759.1 | 66.8 | 18.8 | 43 | W | 2 | 1 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.84 | 732 4 | 29.77 | 756.2 | 63.3 | 17.4 | 47 | W | 11 | 5 | ..... | ..... | 7k | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.71 | 754.4 | 29.92 | 760.0 | 88.3 | 31.3 | 45 | NNE | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.28 | 718.2 | 29.78 | 756.3 | 75.7 | 24.3 | 59 | Calm | 0 | 0 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.24 | 742.8 | 29.71 | 754.7 | 75.4 | 24.1 | 43 | SW | 0 | 0 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeniseisk | 29.69 | 754.1 | 29.99 | 761.7 | 37.9 | 3.3 | 55 | E | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking (China) | 29.67 | 753.5 | 29.81 | 757.1 | 65.5 | 18.6 | 66 | SE | 4 | 2 | ..... | ..... | 6k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.97 | 761.3 | 30.07 | 763.8 | 37.9 | 3.3 | 90 | S | 2 | 1 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.82 | 757.4 | 29.93 | 760.1 | 62.1 | 16.7 | 48 | SE | 4.5 | 2.00 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 30.26 | 768.7 | 30.32 | 770.2 | 48.9 | 9.4 | 95 | NW | 6.6 | 2.93 | ..... | ..... | 10 | ..... | ..... | 0.496 | 12.6 | Raining | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.28 | 692.8 | ..... | ..... | 45.5 | 7.5 | 61 | N | 12.0 | 5.36 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.95 | 709.9 | ..... | ..... | 59.4 | 15.2 | 45 | N | 16.5 | 7.33 | ..... | 0 | 3 | ..... | ..... | 0 | 0 | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 29.92 | 759.9 | 30.07 | 763.7 | 70.7 | 21.5 | 29 | NNW | 10.3 | 4.61 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.41 | 747.1 | 30.30 | 769.7 | 57.7 | 14.3 | 53 | NE | 10.5 | 4.7 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.91 | 759.8 | 29.98 | 761.5 | 74.0 | 23.3 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.122 | 3.1 | Clear | Benito Vines, S. J |
| Manilla, Philippine Islands | 29.75 | 755.7 | 29.80 | 757.0 | 85.3 | 29.6 | 73 | E | 4.5 | 2.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.11 | 764.9 | 30.21 | 767.4 | 65.3 | 18.5 | 60 | WNW | 11.9 | 5.3 | ..... | 0 | 1 | ..... | N | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W.I | 29.91 | 759.6 | 30.00 | 761.9 | 79.5 | 26.4 | 82 | E | 12.7 | 5.67 | ..... | 6k | 3kn | E | E | 0.423 | 10.75 | Cloudy | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.01 | 762.3 | 30.05 | 763.3 | 37.2 | 2.9 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.11 | 764.9 | 30.17 | 766.2 | 39.2 | 4.0 | 64 | SW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.04 | 763.0 | 30.09 | 764.3 | 42.4 | 5.8 | 55 | S | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.87 | 758.8 | 30.01 | 762.3 | 42.3 | 5.7 | 39 | NNE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.89 | 759.3 | 29.95 | 760.8 | 38.5 | 3.6 | 77 | NNE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.99 | 761.8 | 30.07 | 763.7 | 42.3 | 5.7 | 29 | NE | 15.2 | 6.8 | ..... | ..... | 2 | W | ..... | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.50 | 723.9 | 29.04 | 760.4 | 50.9 | 10.5 | .42 | N | ..... | ..... | 7 | 4 | ..... | ..... | ..... | 0.098 | 2.5 | Cloudy..... | The Observatory. |
| Zurich | 28.37 | 720.7 | 30.03 | 762.8 | 48.4 | 9.1 | 55 | SE | ..... | ..... | 2 | 8 | ..... | ..... | ..... | 0.063 | 1.6 | Cloudy..... | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —0.6 mm.; Thermometer,—3.5 Cent.; Relative Humidity, —15 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,338.6 feet, and that of Zurich 470 m., or 1,542.0 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.92 | 760.0 | 74.3 | 23.5 | 42 | SSW | 4 | 2.0 | ..... | ..... | 4 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.16 | 766.0 | 87.8 | 31.0 | ..... | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.72 | 754.8 | 63.1 | 17.3 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.55 | 14. | Covered..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut (Syria) Lee Obs'y | 29.79 | 756.7 | 29.91 | 759.7 | 72.0 | 22.2 | 82 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky.... | Prof. C. V. A. Van Dyck. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.88 | 758.9 | 29.95 | 760.7 | 37.8 | 3.2 | 93 | S | 6 | 2.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.82 | 757.4 | 30.12 | 765.0 | 54 | 12.2 | ..... | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | W. R. Bigg. |
| *Chatham, N. B | 29.92 | 760.0 | 29.99 | 761.7 | 49 | 9.4 | 89 | SW | 9 | 4.0 | ..... | 2k | 8ks | SW | SW | 0 | 0 | Cloudy ..... | G. A. Blair. |
| Charlottetown, P. E. Island | 29.99 | 761.7 | 30.03 | 762.8 | 47 | 8.3 | 74 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy..... | H J. Cundall, C. E. |
| Cornwall, Ontario | 29.86 | 758.4 | 30.05 | 763.3 | 46.4 | 8.0 | 70 | W | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear..... | James Smith, M. A. |
| Dalhousie, N. B | 29.76 | 755.9 | 29.93 | 760.2 | 44 | 6.7 | ..... | Calm | ..... | ..... | 1 | ..... | 10n | ..... | ..... | Inap. | Inap. | Raining..... | H. A. Johnson. |
| Esquimault, B. C | 29.97 | 761.2 | 30.01 | 762.2 | 44.9 | 6.8 | 92 | Calm | 0 | 0 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Overcast..... | W. H. Bevis. |
| *Father Point, Quebec | 29.90 | 759.4 | 29.92 | 760.0 | 41 | 5.0 | 96 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | W | 0.06 | 1.5 | Threatening | J. McWilliams. |
| Fredericton, N. B | 29.96 | 761.0 | 30.02 | 762.5 | 48.7 | 9.3 | 85 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Overcast..... | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.33 | 745.0 | 30.10 | 766.8 | 32 | 0.0 | 100 | NW | 4 | 1.8 | ..... | Haze | Fog | NW | NW | 0.400 | 10.16 | Fair..... | James Stewart. |
| Granton, Ontario | 28.95 | 735.3 | 30.05 | 763.3 | 48 | 8.9 | ..... | S | ..... | ..... | 1 | 1c | 0 | ..... | ..... | 0 | 0 | Fine..... | James Grant. |
| *Halifax, N. S | 29.94 | 760.5 | 30.07 | 763.8 | 45 | 7.2 | 96 | SW | 11 | 4.9 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.74 | 755.4 | 30.12 | 765.0 | 42.7 | 5.9 | 86 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.77 | 756.1 | 30.11 | 764.8 | 43 | 6.1 | 77 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.07 | 1.8 | Clear..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.03 | 762.8 | 30.07 | 763.8 | 40.6 | 9.8 | 92 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast..... | C. H. Rigby. |
| Moose Factory, Ontario | 30.03 | 762.8 | 30.07 | 763.8 | 25.0 | — 3.9 | 91 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.30 | 7.6 | Cloudy..... | J. R. Nason. |
| *Montreal, Quebec | 29.84 | 757.9 | 30.04 | 763.0 | 47 | 8.3 | 66 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.87 | 746.0 | 30.08 | 764.0 | 39 | 3.9 | 91 | E | 3 | 1.3 | ..... | 2ck | 5ks | E | E | 0 | 0 | Fair..... | Rev. R. Mosly. |
| Peterboro, Ontario | 29.35 | 745.5 | 30.11 | 764.8 | 45.7 | 7.6 | 92 | W | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.39 | 746.5 | 30.09 | 764.3 | 42 | 5.6 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy ..... | H. Morgan. |
| Port Hastings, N. S | 30.04 | 763.0 | 30.09 | 764.3 | 44.5 | 6.9 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine ..... | Peter Grant. |
| Port Stanley, Ontario | 29.42 | 747.2 | 30.08 | 764.0 | 45 | 7.2 | 96 | E | 6 | 2.7 | ..... | 2ck | Haze | W | ..... | 0 | 0 | Clear ..... | M. Payne. |
| *Quebec, Quebec | 29.66 | 753.4 | 29.99 | 761.7 | 47 | 8.3 | 86 | NW | ..... | ..... | 3 | 0 | 2ks | ..... | NW | 0.02 | 0.5 | Fair ..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.64 | 752.8 | 30.11 | 764.8 | 40 | 4.4 | 82 | Calm | 0 | 0 | ..... | ..... | 8s | ..... | W | 0 | 0 | Cloudy..... | W. H. McIntyre. |
| St. Andrews, N. B | 29.96 | 761.0 | 30.01 | 762.2 | 44 | 6.7 | 98 | S | ..... | ..... | 1 | ..... | Fog | ..... | ..... | 0 | 0 | Foggy ..... | Dr. Gove. |
| St. John, N. B | 29.89 | 759.2 | 30.06 | 763.5 | 42 | 5.6 | 100 | S | 7 | 3.1 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Dense fog.... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.30 | 744.2 | 30.03 | 762.8 | 43 | 6.1 | 74 | SE | 13 | 5.8 | ..... | ..... | 8ks | ..... | ..... | 0 | 0 | Cloudy..... | K. Stewart. |
| Stayner, Ontario | 29.24 | 742.7 | 30.02 | 762.5 | 45 | 7.2 | 61 | SE | 10 | 4.5 | ..... | 2ck | 0 | SW | ..... | 0 | 0 | Cloudy..... | R. J. Cole. |
| Stratford, Ontario | 28.76 | 730.5 | 30.06 | 763.5 | 43.3 | 6.3 | 77 | SE | 6.0 | 2.7 | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Fine ..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.05 | 763.3 | 30.09 | 764.3 | 51 | 10.6 | 68 | W | 4 | 1.8 | ..... | 10ck | Sm'e | NW | W | 0 | 0 | Cloudy ..... | T. C. Hill. |
| *Toronto, Ontario | 29.72 | 754.9 | 30.11 | 764.8 | 46 | 7.8 | 62 | E | 4 | 1.8 | ..... | 5cs | Haze | W | Calm | 0 | 0 | Fair ..... | Magnetic Observatory. |
| Windsor, N. S | 29.97 | 761.2 | 30.07 | 763.8 | 52.0 | 11.1 | 86 | SW | 7 | 3.1 | ..... | 10k | 0 | ..... | ..... | 0.05 | 1.3 | Overcast..... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 47.0 | 8.3 | 85 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair ..... | John Delany. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.86 | 758.4 | 30.09 | 764.3 | 51 | 10.6 | 59 | N | 6 | 2.7 | | 0 | 0 | | | 0.45 | 11.4 | Clear | |
| Alpena, Michigan | 29.29 | 744.0 | 29.94 | 760.5 | 42 | 5.6 | 83 | SE | 5 | 2.2 | | | 10n | | Calm | Inap. | Inap. | Light rain | |
| Atlanta, Georgia | 28.86 | 733.0 | 29.98 | 761.5 | 61 | 16.1 | 66 | NW | 6 | 2.7 | | 0 | Haze | | Calm | 0.01 | 0.3 | Clear | |
| Atlantic City, New Jersey | 30.00 | 762.0 | 30.01 | 762.2 | 55 | 12.8 | 87 | NE | 19 | 8.5 | | | 10s | | NE | 0.52 | 13.2 | Cloudy | |
| Augusta, Georgia | 29.80 | 756.9 | 29.97 | 761.2 | 60 | 18.9 | 84 | W | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Baltimore, Maryland | 30.01 | 762.2 | 30.06 | 763.5 | 59 | 15.0 | 70 | NE | 7 | 3.1 | | 2c | 5s | NW | N | 0.91 | 23.1 | Fair | |
| Barnegat, New Jersey | 29.96 | 761.0 | 29.99 | 761.7 | 52 | 11.1 | 93 | N | 24 | 10.7 | | | 10s | | Calm | 0.79 | 20.1 | Cloudy | |
| Bismarck, Dakota | 28.27 | 718.0 | 30.12 | 765.0 | 41 | 5.0 | 73 | N | 3 | 1.3 | | 1c | 0 | NW | | 0 | 0 | Clear | |
| Boerne, Texas | 28.59 | 726.2 | 29.88 | 758.9 | 65 | 18.3 | 94 | SE | 6 | 2.7 | | | 10s | | SE | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.06 | 687.3 | 30.02 | 762.5 | 51 | 10.6 | 59 | SE | 2 | 0.9 | | 5k | 0 | Calm | | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.58 | 758.9 | 30.04 | 763.0 | 55 | 12.8 | 100 | SW | 8 | 3.6 | | | 10n | | SW | 0.47 | 11.9 | Light rain | |
| Brackettville, Texas | 28.88 | 733.5 | 29.88 | 758.9 | 72 | 22.2 | 76 | E | 3 | 1.3 | | 10ck | 0 | S | | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 29.10 | 739.1 | 30.13 | 765.3 | 34 | 1.1 | 90 | N | 14 | 6.3 | | | 10ks | | Calm | 0.08 | 2.0 | Cloudy | |
| Brownsville, Texas | 29.99 | 761.7 | 30.04 | 763.0 | 76 | 24.4 | 82 | SE | 4 | 1.8 | | 0 | 8ks | | SE | 0 | 0 | Fair | |
| Buffalo, New York | 29.37 | 746.0 | 30.08 | 764.0 | 47 | 8.3 | 73 | S | 1 | 0.4 | | 0 | Haze | | Calm | 0.02 | 0.5 | Clear | |
| Burkes, Arizona | | | | | | | | | | | | | | | | | | | |
| Burlington, Vermont | 29.79 | 756.7 | 30.08 | 764.0 | 48 | 8.9 | 49 | N | 6 | 2.7 | | 0 | 0 | | | 0.27 | 6.9 | Clear | |
| Cairo, Illinois | 29.78 | 756.4 | 30.17 | 766.3 | 58 | 14.4 | 76 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Camp Apache, Arizona | | | | | | | | | | | | | | | | | | | |
| Camp Grant, Arizona | 25.22 | 640.6 | 30.02 | 762.5 | 63 | 17.2 | 19 | E | 2 | 0.9 | | 2cs | 0 | NW | | 0 | 0 | Clear | |
| Camp Verde, Arizona | | | | | 55 | 12.8 | 62 | NW | | | 1 | 10k | 0 | Calm | | 0 | 0 | Cloudy | |
| Campo, California | 27.42 | 696.5 | 29.99 | 761.7 | 40 | 4.4 | 73 | E | 4 | 1.8 | | 2c | 0 | Calm | | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 29.91 | 759.7 | 29.92 | 760.0 | 66 | 18.3 | 94 | W | 1 | 0.4 | | 8cs | Fog | SW | W | 0.65 | 16.5 | Fair | |
| Cape Henry, Virginia | 29.92 | 760.0 | 29.94 | 760.5 | 62 | 16.7 | 94 | S | 2 | 0.9 | | | 10n | | S | 0.62 | 15.7 | Light rain | |
| Cape Lookout, N. Carolina | 29.92 | 760.0 | 29.93 | 760.2 | 64 | 17.8 | 94 | NW | 6 | 2.7 | | | 10ks | | N | 0.12 | 3.0 | Cloudy | |
| Cape May, New Jersey | 29.94 | 760.5 | 29.97 | 761.2 | 57 | 13.9 | 94 | N | 12 | 5.4 | | | 10ks | | N | 0.81 | 20.6 | Cloudy | |
| Castroville, Texas | 29.26 | 743.2 | 29.95 | 760.7 | 66 | 18.9 | 95 | S | 4 | 1.8 | | | Fog | | | 0 | 0 | Foggy | |
| Charleston, South Carolina | 29.90 | 759.4 | 29.95 | 760.7 | 71 | 21.7 | 80 | SW | 3 | 1.3 | | 7cs | 0 | SW | | 0.12 | 3.0 | Fair | |
| Cheyenne, Wyoming | 24.11 | 612.4 | 30.05 | 763.3 | 41 | 5.0 | 65 | W | 4 | 1.8 | | 2cs | 0 | SW | | Inap. | Inap. | Clear | |
| Chicago, Illinois | 29.32 | 744.7 | 30.01 | 762.2 | 55 | 12.8 | 56 | SW | 8 | 3.6 | | | 5ks | | W | Inap. | Inap. | Fair | |
| Cincinnati, Ohio | 29.46 | 748.3 | 30.11 | 764.8 | 54 | 12.2 | 61 | NW | 3 | 1.3 | | 0 | Sm'e | | Calm | 0 | 0 | Clear | |
| Cleveland, Ohio | 29.35 | 745.5 | 30.08 | 764.0 | 48 | 8.9 | 70 | SE | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Coleman City, Texas | 28.21 | 716.5 | 29.85 | 758.2 | 60 | 15.6 | 82 | S | 6 | 2.7 | | 2c | 0 | Calm | | 0 | 0 | Fair | |
| Columbus, Ohio | 29.24 | 742.7 | 30.08 | 764.0 | 52 | 11.1 | 66 | N | 1 | 0.4 | | 0 | Fog | | Calm | 0 | 0 | Clear | |
| Concho, Texas | 28.10 | 713.7 | 29.72 | 754.9 | 68 | 20.0 | 79 | SE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Corsicana, Texas | 29.62 | 752.3 | 30.08 | 764.0 | 63 | 17.2 | 94 | SE | 1 | 0.4 | | 2ck | 0 | SW | | 0 | 0 | Fair | |
| Davenport, Iowa | 29.41 | 747.0 | 30.05 | 763.3 | 55 | 12.8 | 62 | NW | 5 | 2.2 | | 2ck | 0 | W | | 0 | 0 | Fair | |
| Deadwood, Dakota | 25.45 | 646.4 | | | 42 | 5.6 | 50 | SE | 4 | 1.8 | | 10k | 0 | SE | | 0 | 0 | Cloudy | |
| Decatur, Texas | 28.91 | 734.3 | 30.04 | 763.0 | 70 | 21.1 | 66 | S | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Denison, Texas | 29.30 | 744.2 | 30.08 | 764.0 | 66 | 18.9 | 84 | SE | 2 | 0.9 | | 5cs | 0 | SW | | 0 | 0 | Fair | |
| Denver, Colorado | 24.86 | 631.4 | 30.08 | 764.0 | 47 | 8.3 | 62 | NW | 8 | 3.6 | | 8c | 0 | NW | | 0 | 0 | Fair | |
| Des Moines, Iowa | 29.22 | 742.2 | 30.11 | 764.8 | 48 | 8.9 | 70 | Calm | 0 | 0 | | 2c | 0 | NW | | 0 | 0 | Clear | |
| Detroit, Michigan | 29.36 | 745.7 | 30.03 | 762.8 | 49 | 9.4 | 64 | W | 3 | 1.3 | | 5c | Sm'e | NW | Calm | 0 | 0 | Fair | |
| Dodge City, Kansas | 27.46 | 697.5 | 29.72 | 754.9 | 56 | 13.3 | 75 | E | 4 | 1.8 | | 0 | 2ks | | W | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.35 | 745.5 | 30.05 | 763.3 | 52 | 11.1 | 35 | NW | 8 | 3.6 | | 6 | Haze | | Calm | 0.02 | 0.5 | Clear | |
| Duluth, Minnesota | 29.54 | 745.2 | 30.03 | 762.8 | 37 | 2.8 | 90 | Calm | 0 | 0 | | | 10s | | NE | 0.55 | 14.0 | Cloudy | |
| Eagle Pass, Texa | 29.21 | 741.9 | 29.91 | 759.7 | 68 | 20.0 | 84 | SE | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Eastport, Maine | 29.97 | 761.2 | 30.04 | 763.0 | 41 | 5.0 | 95 | S | 8 | 3.6 | | | Fog | | S | 0 | 0 | Foggy | |
| Edinburg, Texas | | | | | 75 | 23.9 | 95 | S | | | 4 | | 8s | | S | 0 | 0 | Cloudy | |
| El Paso, Texas | 28.21 | 665.7 | | | 66 | 18.9 | 6 | NW | 9 | 4.0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.36 | 745.7 | 30.07 | 763.8 | 51 | 10.6 | 72 | S | 6 | 2.7 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Escanaba, Michigan | 29.25 | 742.9 | 29.92 | 760.0 | 38 | 3.3 | 81 | NE | 8 | 3.6 | | | 10s | | N | 0.10 | 2.5 | Cloudy | |
| Florence, Arizona | 28.41 | 721.6 | 30.01 | 762.2 | 68 | 20.0 | 38 | N | 2 | 0.9 | | 8cs | 0 | | | 0 | 0 | Fair | |
| Fort Buford, Dakota | 28.04 | 712.2 | | | 38 | 3.3 | 71 | SE | 4 | 1.8 | | 5ck | 0 | NW | | 0 | 0 | Fair | |
| Fort Craig, New Mexico | 25.54 | 648.7 | 29.60 | 751.8 | 49 | 9.4 | 38 | Calm | 0 | 0 | | 0 | 0 | | | 0 | | Clear | |
| Fort Davis, Texas | 25.24 | 641.1 | 30.20 | 767.1 | 67 | 19.4 | 36 | S | 4 | 1.8 | | 5cs | 0 | Calm | | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.55 | 750.6 | 30.07 | 763.8 | 64 | 17.8 | 68 | E | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.75 | 730 2 | 30.00 | 762.0 | 62 | 16.7 | 83 | SE | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.45 | 697.2 | | | 44 | 6.7 | 67 | SE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort McKavett, Texas | 27.76 | 705.1 | 29.63 | 752.6 | 63 | 17.2 | 78 | SE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.79 | 756.7 | 29.82 | 757.4 | 21 | — 6.1 | 100 | S | 16 | 7.2 | | | 10s | | Calm | 0.03 | 0.8 | Cloudy | |
| Fort Sill, Indian Territory | 29.84 | 757.9 | 29.92 | 760.0 | 63 | 17.2 | 89 | SE | 9 | 4.0 | | 5ck | 0 | Calm | | 0 | 0 | Fair | |
| Fort Stevenson, Dakota | | | | | 36 | 2.2 | 72 | NE | 2 | 0.9 | | 1c | 0 | NE | | 0 | 0 | Fair | |
| Fredericksburg, Texas | 28.38 | 720.8 | 29.89 | 759.2 | 75 | 23.9 | 44 | E | 4 | 1.8 | | 5cs | 0 | Calm | | 0 | 0 | Fair | |
| Galveston, Texas | 30.03 | 762.8 | 30.08 | 764.0 | 72 | 22.2 | 90 | NE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Graham, Texas | 28.96 | 735.6 | 29.99 | 761.7 | 66 | 18.9 | 89 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.32 | 744.7 | 29.96 | 761.0 | 48 | 8.9 | 70 | SW | 19 | 8.5 | | 0 | 8s | | W | 0 | 0 | Fair | |
| Indianapolis, Indiana | 29.30 | 744.2 | 30.08 | 764.0 | 50 | 10.0 | 58 | Calm | 0 | 0 | | 0 | Sm'e | | Calm | 0 | 0 | Clear | |
| Indianola, Texas | 30.06 | 763.5 | 30.09 | 764.3 | 72 | 22.2 | 78 | SE | 8 | 3.6 | | 0 | 2s | | SE | 0 | 0 | Fair | |
| Jacksboro, Texas | 28.89 | 733.8 | 29.98 | 761.5 | 68 | 20.0 | 70 | SE | 10 | 4.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.94 | 760.5 | 29.97 | 761.2 | 70 | 21.1 | 85 | Calm | 0 | 0 | | 2cs | 0 | Calm | | 0.17 | 4.3 | Clear | |
| Keokuk, Iowa | 29.42 | 747.2 | 30.03 | 762.8 | 57 | 13.9 | 52 | W | 7 | 3.1 | | 2c | Haze | Calm | Calm | 0 | 0 | Clear | |
| Key West, Florida | 29.95 | 760.7 | 29.98 | 761.5 | 77 | 25.0 | 82 | Calm | 0 | 0 | | 1k | 0 | Calm | | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 29.88 | 758.9 | 29.91 | 759.7 | 59 | 15.0 | 100 | SE | 4 | 1.8 | | | 10s | | Calm | 0.13 | 3.3 | Cloudy | |
| Knoxville, Tennessee | 29.07 | 738.4 | 30.06 | 763.5 | 60 | 15.6 | 57 | N | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 29.26 | 743.7 | 30.01 | 762.2 | 51 | 10.6 | 55 | W | 1 | 0.4 | | 0 | 0 | | | 0.02 | 0.5 | Clear | |
| La Mesilla, New Mexico | 26.07 | 662.2 | 30.22 | 767.6 | 47 | 8.3 | 55 | Calm | 0 | 0 | | 2cs | 0 | Calm | | 0 | 0 | Clear | |
| Laredo, Texas | 29.60 | 751.8 | 29.93 | 760.2 | 76 | 24.4 | 77 | SE | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.20 | 741.7 | 30.02 | 762.5 | 61 | 16.1 | 77 | N | 1 | 0.4 | | | 7ks | | NW | 0.05 | 1.3 | Fair | |
| Los Angeles, California | 29.64 | 752.8 | 29.98 | 761.5 | 50.0 | 10.0 | 93 | N | 3 | 1.3 | | | Fog | | Calm | 0 | 0 | Foggy | |
| Louisville, Kentuckey | 29.54 | 750.3 | 30.10 | 764.5 | 56 | 13.3 | 51 | N | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.37 | 746.0 | 30.03 | 762.8 | 67 | 19.4 | 54 | NE | 4 | 1.8 | | | 0 | | | 0.16 | 4.1 | Clear | |
| Madison, Wisconsin | 28.99 | 736.3 | 29.96 | 761.0 | 52 | 11.1 | 73 | NW | 16 | 7.2 | | | 8ks | | NW | 0 | 0 | Cloudy | |
| Marquette, Michigan | 29.22 | 742 2 | 29.94 | 760.5 | 35 | 1.7 | 90 | NE | 4 | 1.8 | | | 10n | | Calm | 0.08 | 2.0 | Light rain | |
| Mason, Texas | 28.40 | 721.3 | 30.12 | 765.0 | 65 | 18.3 | 84 | SE | 5 | 2.2 | | | 10s | | S | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.82 | 757.4 | 30.14 | 765.5 | 60 | 15.6 | 53 | NE | 3 | 1.3 | | 0 | Sm'e | | Calm | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.21 | 741.9 | 29.93 | 760.2 | 56 | 13.3 | 57 | SW | 12 | 5.4 | | 2k | 8s | SW | SW | 0 | 0 | Cloudy | |
| Mobile, Alabama | 30.02 | 762.5 | 30.06 | 763.5 | 64 | 17.8 | 78 | N | 8 | 3.6 | | 0 | 0 | | | 0.52 | 13.2 | Clear | |
| Montgomery, Alabama | 29.82 | 757.4 | 30.06 | 763.5 | 65 | 18.3 | 63 | N | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Morgantown, West Virginia | 29.00 | 736.6 | 30.07 | 763.8 | 46 | 7.8 | 84 | Calm | 0 | 0 | | | Fog | | Calm | 0.05 | 1.3 | Dense fog | |
| Mt. Washington, N. H. | 23.78 | 604.0 | 30.14 | 765.5 | 37 | 2.8 | 90 | W | 18 | 8.0 | | | Fog | | W | 0.41 | 10.4 | Clearing | |
| Nashville, Tennessee | 29.58 | 751.3 | 30.12 | 765.0 | 56 | 13.3 | 63 | NW | 1 | 0.4 | | 5ck | 0 | NW | | 0 | 0 | Fair | |
| New Haven, Connecticut | 29.92 | 760.0 | 30.04 | 763.0 | 52 | 11.1 | 93 | NE | 10 | 4.5 | | | 10n | | Calm | 1.00 | 25.4 | Light rain | |
| New London, Connecticut | 30.00 | 762.0 | 30.05 | 763.3 | 54 | 12.2 | 93 | Calm | 0 | 0 | | | 10s; fg | | Calm | 0.80 | 20.3 | Cloudy | |
| New Orleans, Louisiana | 30.02 | 762.5 | 30.08 | 764.0 | 70 | 21.1 | 75 | NE | 4 | 1.8 | | 0 | 0 | | | 0.07 | 1.8 | Clear | |
| Newport, Rhode Island | 30.00 | 762.0 | 30.05 | 763.3 | 52 | 11.1 | 93 | SW | 5 | 2.2 | | | Fog | | | 0.07 | 1.8 | Misty | |
| New York, New York | 29.86 | 758.4 | 30.04 | 763.0 | 56 | 13.3 | 57 | N | 11 | 4.9 | | 8ck | 2s | Calm | Calm | 0.97 | 24.6 | Clearing | |
| Norfolk, Virginia | 29.89 | 759.2 | 29.94 | 760.5 | 62 | 16.7 | 100 | N | 8 | 3.6 | | | 10n | | Calm | 0.04 | 1.0 | Light rain | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.20 | 690.9 | 29.79 | 756.7 | 47 | 8.3 | 66 | E | 6 | 2.7 | | 5k | 0 | SW | | 0 | 0 | Fair | |
| Olympia, Washington Ter. | 30.02 | 762.5 | 30.06 | 763.5 | 40.4 | 4.7 | 82 | N | 2 | 0.9 | | | 9s | | Calm | Inap. | Inap. | Cloudy | |
| Omaha, Nebraska | 28.99 | 736.3 | 30.10 | 764.5 | 50 | 10.0 | 65 | N | 4 | 1.8 | | 2cs | 0 | Calm | | 0.42 | 10.7 | Clear | |
| Oswego, New York | 29.80 | 756.9 | 30.13 | 765.3 | 47 | 8.3 | 70 | NW | 3 | 1.3 | | 0 | 0 | | | 0.18 | 4.6 | Clear | |
| Pembina, Dakota | 29.28 | 743.7 | 30.14 | 765.5 | 33 | 0.6 | 100 | NW | 6 | 2.7 | | | Fog | | | 0 | 0 | Foggy | |
| Philadelphia, Pa | 29.98 | 761.5 | 30.04 | 763.0 | 56 | 13.3 | 63 | NE | 14 | 6.3 | | | 10s | | Calm | 1.64 | 41.7 | Cloudy | |
| Phœnix, Arizona | 28.73 | 729.7 | 30.48 | 774.2 | 70 | 21.1 | 28 | E | 2 | 0.9 | | 8c | 0 | W | | 0 | 0 | Cloudy | |
| Pike's Peak, Colorado | 17.90 | 454.6 | 30.11 | 764.8 | 23 | — 5.0 | 34 | NW | 39 | 17.4 | | 5cs | 0 | W | | Inap. | Inap. | Fair | |
| Ploche, Nevada | 24.01 | 609.8 | 29.78 | 756.4 | 58 | 14.4 | 7 | S | 8 | 3.6 | | 0 | 2s | | Calm | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 29.29 | 744.0 | 30.11 | 764.8 | 42 | 5.6 | 83 | NW | 1 | 0.4 | | | Fog | | Calm | 0.02 | 0.5 | Foggy | |
| Port Huron, Michigan | 29.35 | 745.5 | 30.01 | 762.2 | 49 | 9.4 | 71 | SW | 8 | 3.6 | | 10ck | Sm'e | W | | 0 | 0 | Cloudy | |
| Portland, Maine | 29.96 | 761.0 | 30.01 | 762.2 | 50 | 10.0 | 86 | Calm | 0 | 0 | | | 10n | | Calm | 0.18 | 4.6 | Light rain | |
| Portland, Oregon | 30.03 | 762.8 | 30.13 | 765.3 | 45.0 | 7.2 | 80 | SE | 2 | 0.9 | | 0 | 8s | | | 0 | 0 | Fair | |
| Prescott, Arizona | 24.75 | 628.6 | 30.11 | 764.8 | 55 | 12.8 | 28 | SW | 1 | 0.4 | | 9ck | 0 | W | | 0 | 0 | Cloudy | |
| Pilot Point, Texas | 29.06 | 738.1 | 29.87 | 758.7 | 58 | 14.4 | 81 | S | 13 | 5.8 | | Haze | Haze | | | 0 | 0 | Hazy | |
| Punta Rassa, Florida | 29.99 | 761.7 | 30.01 | 762.2 | 72 | 22.2 | 85 | NW | 10 | 4.5 | | 5k | 0 | NW | | 0 | 0 | Fair | |
| Red Bluff, California | 29.67 | 753.6 | 30.03 | 762.8 | 54 | 12.2 | 77 | S | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Rio Grande City, Texas | 29.83 | 757.7 | 30.05 | 763.3 | 71 | 21.7 | 90 | SE | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Rochester, New York | 29.48 | 748.8 | 30.11 | 764.8 | 46 | 7.8 | 69 | W | 2 | 0.9 | | 0 | 1s | | Calm | 0.04 | 1.0 | Clear | |
| Roseburg, Oregon | 29.66 | 753.8 | 30.14 | 765.5 | 46.0 | 7.8 | 77 | NE | 4 | 1.8 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Sacramento, California | 29.94 | 760.5 | 30.03 | 762.8 | 49 | 9.4 | 85 | SE | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.53 | 750.0 | 30.10 | 764.5 | 58 | 14.4 | 48 | S | 6 | 2.7 | | 0 | Sm'e | | | Inap. | Inap. | Clear | |
| St. Marks, Florida | 29.97 | 761.2 | 29.99 | 761.7 | 67 | 19.4 | 89 | NW | 5 | 2.2 | | 0 | 0 | | | 0.23 | 5.8 | Clear | |
| St. Paul, Minnesota | 29.15 | 740.4 | 29.98 | 761.5 | 46 | 7.8 | 84 | W | 8 | 3.6 | | 0 | 0 | | | 0.12 | 3.0 | Clear | |
| Salt Lake City, Utah | 25.56 | 649.2 | 29.88 | 758.9 | 62 | 16.7 | 36 | SE | 5 | 2.2 | | | 10ks | | W | 0 | 0 | Cloudy | |
| San Antonio, Texas | 29.36 | 745.7 | 29.93 | 760.2 | 68 | 20.0 | 90 | SE | 4 | 1.8 | | | 10s | | SE | 0 | 0 | Cloudy | |
| San Diego, California | 29.92 | 760.0 | 29.99 | 761.7 | 54 | 12.2 | 100 | Calm | 0 | 0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.42 | 747.2 | 30.08 | 764.0 | 53 | 11.7 | 64 | W | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Sandy Hook, New Jersey | 29.90 | 761.7 | 30.02 | 762.5 | 53 | 11.7 | 73 | NE | 21 | 9.4 | | 2cs | 8s | NW | NW | 0.86 | 21.8 | Cloudy | |
| San Francisco, California | 30.03 | 762.8 | 30.10 | 764.5 | 49.8 | 9.9 | 79 | NW | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 23.35 | 593.1 | 29.89 | 759.2 | 49 | 9.4 | 24 | NE | 1 | 0.4 | | 1cs | 0 | Calm | | 0 | 0 | Clear | |
| Savannah, Georgia | 29.89 | 759.2 | 29.98 | 761.5 | 74 | 23.3 | 72 | W | 5 | 2.2 | | 1c | Sm'e | Calm | Calm | 0 | 0 | Clear | |
| Shreveport, Louisiana | 29.90 | 759.4 | 30.11 | 764.8 | 65 | 18.3 | 84 | SW | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Silver City, New Mexico | 24.34 | 618.2 | 30.42 | 772.6 | 55 | 12.8 | 27 | NW | 2 | 0.9 | | 2c | 0 | Calm | | 0 | 0 | Fair | |
| Smithville, North Carolina | 29.94 | 760.5 | 29.98 | 761.5 | 65 | 18.3 | 100 | N | 4 | 1.8 | | | 10s | | N | 0.94 | 23.9 | Cloudy | |
| Springfield, Massachusetts | 29.91 | 759.7 | 30.04 | 763.0 | 59 | 15.0 | 65 | NW | 6 | 2.7 | | 0 | 5ks | | W | 0.42 | 10.7 | Fair | |
| Stockton, Texas | 26.94 | 684.3 | 29.94 | 760.5 | 65 | 18.3 | 73 | SE | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.99 | 761.7 | 30.04 | 763.0 | 52 | 11.1 | 100 | SW | 4 | 1.8 | | | Fog | | | 0.06 | 1.5 | Foggy | |
| Toledo, Ohio | 29.37 | 746.0 | 30.05 | 763.3 | 57 | 13.9 | 52 | W | 7 | 3.1 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Tucson, Arizona | 27.49 | 698.2 | 30.04 | 763.0 | 60 | 15.6 | 34 | S | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.65 | 753.1 | 30.15 | 765.8 | 48.0 | 8.9 | 70 | SE | 6 | 2.7 | | 0 | 8ks | | W | 0 | 0 | Fair | |
| Unalashka, Aleutian Islands | | | | | | | | | | | | | | | | | | | |
| Uvalde, Texas | 29.12 | 739.6 | 29.92 | 760.0 | 68 | 20.0 | 79 | E | 1 | 0.4 | | 1ck | 0 | S | | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.90 | 759.4 | 30.16 | 766.1 | 62 | 16.7 | 77 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Virginia City, Montana | 24.24 | 616.7 | 29.72 | 754.9 | 47 | 8.3 | 48 | SE | 4 | 1.8 | | 0 | 5s | | Calm | 0 | 0 | Fair | |
| Visalia, California | 29.64 | 752.8 | 30.01 | 762.2 | 55.5 | 13.1 | 47 | NW | 2 | 0.9 | | 2c | 0 | Calm | | 0 | 0 | Fair | |
| Washington, D. C. | 29.93 | 760.2 | 30.04 | 763.0 | 58 | 14.4 | 70 | N | 12 | 5.4 | | 5c | 1s | NW | | 0.11 | 2.8 | Fair | |
| Wickenburg, Arizona | | | | | 62 | 16.7 | 46 | Calm | | | 0 | 8cs | 0 | W | | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 29.86 | 758.4 | 29.94 | 760.5 | 64 | 17.8 | 94 | N | 4 | 1.8 | | | 10s | | Calm | 0.96 | 24.4 | Cloudy | |
| Winnemucca, Nevada | 25.65 | 651.5 | 30.01 | 762.2 | 47 | 8.3 | 34 | S | 4 | 1.8 | | 0 | 8s | | SW | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 30.01 | 762.2 | 30.04 | 763.0 | 52 | 11.1 | 93 | SW | 6 | 2.7 | | | Fog | | Calm | 0 | 0 | Dense fog | |
| Yankton, Dakota | 28.88 | 733.5 | 30.20 | 767.1 | 42 | 5.6 | 66 | SW | 1 | 0.4 | | 10c | 0 | NW | | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.67 | 753.6 | 29.83 | 757.7 | 68 | 20.0 | 51 | Calm | 0 | 0 | | 2cs | 5s | Calm | W | 0 | 0 | Fair | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.52 | 724.4 | 29.91 | 759.7 | 59 | 15.0 | 64 | | | | | | | | | | | | J. B. Gordon. |
| Havana, Cuba. W. I | 29.93 | 760.2 | 29.98 | 761.5 | 77 | 25.0 | 80 | Calm | 0 | 0 | | 0 | 0 | | | 0.60 | 15.2 | Clear | Chas. Hasselbrink |
| Kingston, Jamaica, W. I | | | | | | | | | | | | | | | | | | | James Gall. |
| Medellin, Colombia, S. A | 25.22 | 640.6 | | | 67.5 | 19.7 | 83 | Calm | | | 0 | 4cs;k | 3ks | | | 0.03 | 0.8 | | Thomas Herran. |
| Navassa, W. I | 29.84 | 757.9 | 29.92 | 760.0 | 79 | 26.1 | | E | | | | | | | | 0.15 | 3.8 | Cloudy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 30.02 | 762.5 | 30.02 | 762.5 | 80 | 26.7 | 87 | E | | | 2 | 3c | 5k | | E | 0 | 0 | Fair | O. J. Hering. |
| Santiago de Cuba, W. I | | | | | | | | | | | | | | | | | | | Robert Mason. |
| St. Thomas, W. I. | | | | | | | | | | | | | | | | | | | G. O. Gellich. |
| York Factory, B. A | 30.13 | 765.3 | 30.18 | 766.6 | 30.0 | — 1.1 | 95 | E | 8 | 3.6 | | 2c | 0 | E | | 0 | 0 | Fair | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,289 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9(?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.: Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150. 7 ft.,or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761 4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,336.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.856 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.03′ | 762.8 | 52 | 11.1 | 49 | 9.4 | 85 | W | 16 | 7.2 | ..... | ..... | 2 | ..... | W | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 30.15 | 765.8 | 66 | 18.9 | 66 | 18.9 | 89 | W | 3 | 1.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 30.10 | 764.5 | 56 | 13.3 | 53 | 11.7 | 93 | SE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.3 | 8. | ..... | ..... | Rainy..... | |
| Naval Hospital, Yokohama, Japan.....* | 30.05‡ | 763.3‡ | ..... | ..... | 60 | 15.6 | 85 | SSW | ..... | ..... | 1 | ..... | 2ck;c | ..... | W | Slight | Slight | ..... | ..... | Fair..... | |
| Adams, Panama .....* | 29.93 | 760.2 | 82 | 27.8 | 81 | 27.2 | 93 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Alaska, N. 55° 26′, W. 131° 38′..... | 29.72‡ | 754.9‡ | ..... | ..... | 41 | 5.0 | 91 | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 1.525 | 38.74 | Smooth | ..... | Raining..... | |
| Alliance, Palermo, Sicily..... | 29.74‡ | 755.4‡ | ..... | ..... | 65 | 18.3 | 44 | WNW | ..... | ..... | 2 | ..... | 9 | ..... | N;W | ..... | ..... | ..... | ..... | Pleasant..... | |
| Ashuelot, Hong-Kong, China. ...* | 29.88‡ | 758.9‡ | ..... | ..... | 74 | 23.3 | 86 | ESE | ..... | ..... | 3 | ..... | 10 | ..... | NW | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Canonicus, New Orleans, La.....* | 30.08 | 764.0 | 49 | 9.4 | 66 | 18.9 | 94 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Colorado. New York, N. Y..... | 30.07 | 763.5 | 54 | 12.2 | 54 | 12.2 | 93 | NNE | 6 | 2.7 | ..... | ..... | 10 | ..... | N | 0.815 | 20.70 | ..... | ..... | Cloudy..... | |
| Constitution N. 23° 49′, W. 38° 53′..... | 30.09‡ | 764.3‡ | ..... | ..... | 74 | 23.3 | 95 | S | ..... | ..... | 2 | ..... | 7 | ..... | SW | ..... | ..... | Smooth | NNW | Fair..... | |
| Despatch, Genoa, Italy..... | 29.69‡ | 754.1‡ | ..... | ..... | 63 | 17.2 | 89 | NNE | ..... | ..... | 2 | ..... | 5 | ..... | N | ..... | ..... | Smooth | ..... | Fair..... | |
| Franklin, Norfolk, Va.....* | 30.06 | 763.5 | 71 | 21.7 | 64 | 17.8 | 94 | NNW | 9.6 | 4.3 | ..... | ..... | 10 | ..... | Calm | 0.08 | 2.0 | ..... | ..... | Misty..... | |
| Gettysburg, Genoa, Italy .....* | 29.67‡ | 753.6‡ | ..... | ..... | 63 | 17.2 | 57 | NNE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.7 | 18. | Smooth | ..... | Cloudy..... | |
| Hartford, Colonia, Urugay.....* | 30.03 | 762.8 | 65 | 18.3 | 63 | 17.2 | 72 | SSW | ..... | ..... | 2 | ..... | 5 | ..... | SSW | 0 | 0 | Smooth | ..... | Fair..... | |
| Michigan, Erie, Pa.....† | 30.00‡ | 762.0‡ | ..... | ..... | 50 | 10.0 | 79 | SSE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monocacy, Shanghai, China.....* | 29.97‡ | 761.2‡ | ..... | ..... | 58 | 14.4 | 82 | ESE | ..... | ..... | 2 | ..... | 10 | ..... | ESE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongahela Yokohama, Japan.....* | 30.01‡ | 762.2‡ | ..... | ..... | 62 | 16.7 | 83 | S | ..... | ..... | 1 | ..... | ck;s | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C.....* | 30.05 | 763.3 | 72 | 22.2 | *70 | 21.1 | 90 | N;W | 2 | 0.9 | ..... | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Clear..... | |
| Onward, Callao, Peru.....†* | 30.08 | 764.0 | ..... | ..... | 62 | 16.7 | 94 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Foggy ..... | |
| Palos, Shanghai, China.....* | 30.03 | 762.8 | 65 | 18.3 | 57 | 13.9 | 94 | ESE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Passaic, Washington, D. C..... | ..... | ..... | ..... | ..... | 62 | 16.7 | 77 | N | ..... | ..... | 2 | ..... | 2 | ..... | S | ..... | ..... | ..... | ..... | Clear. ..... | |
| Pensacola. Callao, Peru..... | 29.96‡ | 761.0‡ | ..... | ..... | 62 | 16.7 | 94 | SSE | 5 | 2.2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | ..... | Foggy ..... | |
| Plymouth. Portsmouth, N. H..... | 30.01‡ | 762.2‡ | ..... | ..... | 50 | 10.0 | 79 | SSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Foggy ..... | |
| Portsmouth, Hampton Roads, Va..... | 29.95‡ | 760.7‡ | ..... | ..... | 62 | 16.7 | 94 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Slight | N;E | Drizzling .... | |
| Powhatan, Norfolk, Va..... | 29.94‡ | 760.5‡ | ..... | ..... | 63 | 17.2 | 100 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Quinnebaug, N. 37° 05′, E. 10° 54′..... | 29.85‡ | 758.2‡ | ..... | ..... | 61 | 16.1 | 77 | NW | ..... | ..... | 5 | ..... | 2 | ..... | NW | ..... | ..... | Smooth | ..... | Fair..... | |
| Ranger, Amoy, China.....* | 29.90‡ | 759.4‡ | ..... | ..... | 71 | 21.7 | 85 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Richmond. Singapore, China..... | 29.78‡ | 756.4‡ | ..... | ..... | 79 | 26.1 | 95 | NNW | ..... | ..... | 1-2 | ..... | 5 | ..... | NNW | 0.9 | 23. | Smooth | NNW | Fair..... | |
| Rio Bravo, Brownsville, Texas..... | 30.02 | 762.5 | 72 | 22.2 | 77 | 25.0 | 82 | SE | ..... | ..... | 1 | ..... | 5 | ..... | S | ..... | ..... | ..... | ..... | Fair..... | |
| Santee, Annapolis, Md... ..... | 30.01‡ | 762.2‡ | ..... | ..... | 58 | 14.4 | 58 | N | ..... | ..... | 2 | ..... | 10 | ..... | NW | 0.1 | 3. | ..... | ..... | Overcast..... | |
| Saratoga, Horta Bay, Fayal, Azores. | 30.21‡ | 767.3‡ | ..... | ..... | 64 | 17.8 | 100 | SSE | ..... | ..... | 5 | ..... | 10 | ..... | N | 0 | 0 | Mod'ate | ..... | Cloudy..... | |
| St. Louis, League Island, Pa..... | 30.00 | 762.0 | 66 | 18.9 | 57 | 13.9 | 69 | N | 10 | 4.5 | ..... | ..... | 10 | ..... | N | 1.625 | 41.28 | ..... | ..... | Cloudy..... | |
| Trenton Villafranca, France...*. | 29.70‡ | 754.4‡ | ..... | ..... | 66 | 18.9 | 79 | S | ..... | ..... | 1 | ..... | 5 | ..... | ESE | 0.01 | 0.3 | Mod'ate | S | Fair..... | |
| Tuscarora. Morro Ayuca, Mexico..*. | 29.89‡ | 759.2‡ | ..... | ..... | 85 | 29.4 | 54 | N | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Hazy..... | |
| Vandalia, Kingston, Jamaca..... | 29.96‡ | 761.0‡ | ..... | ..... | 76 | 24.4 | 91 | NE | ..... | ..... | 3 | ..... | 10 | ..... | NE | Blank | Blank | Mod'ate | NE | Cloudy ..... | |
| Wabash, Boston, Mass..... | 30.37‡ | 771.4‡ | ..... | ..... | 63 | 17.2 | 94 | SW | 5 | 2.2 | ..... | ..... | 10 | ..... | ..... | 0.22 | 5.6 | ..... | ..... | Foggy ..... | |
| Wyoming, Athens, Greece.....*. | 29.91‡ | 759.7‡ | ..... | ..... | 67 | 19.4 | 95 | SSE | ..... | ..... | 3 | ..... | 5 | ..... | SE | ..... | ..... | Smooth | SE | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **CUNARD LINE MARINE SERIES.** Furnished by the co-operation of Ch. G. Francklyn, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Samaria, Capt. T. Roberts, N. 51° 04′, W. 16° 30′....† | | | 30.26 | 768.6 | 55 | 12.8 | | ESE | | 3 | | | | | | Slight | SE | Fine.... | M. C. Miles. |
| PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | |
| §S. S. City of Tokio Capt. Maury N. 31° 56′, E. 132° 27′ | | 30.14‡ | 765.5‡ | 64 | 17.8 | | NE | | | 2 | | 0 | | | 0 | Smooth | | Blue sky | L. B. Walls. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. R. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Dakota, Capt. H. G. Morse, | | | | | | | | | | | | | | | | | | | W. Luscombe. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly |
| S. S. Granada, Capt. Austin. | | | | | | | | | | | | | | | | | | | F. W. Hart, 1st Officer. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Zealandia, Sydney, N. S. W. | | 29.92‡ | 760.0‡ | | | | NW | | | 2 | | 0 | | | | | | Fine | R. C. Ghost, 1st Officer. |
| WHITE STAR LINE MARINE SERIES. Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |
| OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES. Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, Capt. L. Meyer, N. 38° 30′, W. 174° 29′ | | 30.36‡ | 771.1‡ | 60 | 15.6 | 71 | ENE | | | 5 | 0 | | | | 0 | Smooth | | D. clouds | D. A. Joyce. |
| S. S. Gaelic, | | | | | | | | | | | | | | | | | | | Capt. W. H. Kidley. |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office. §The date of the S. S. City of Tokio is uncertain, and may be in error one day.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to distin 12; no ction between upper and lower clouds. The position given for the S. S. Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Correctior s for temperature, instrumental error and elevation applied at this office.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the co-operation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, Off Bishop Rock, Eng. | | 30.42‡ | 772.6‡ | 55.0 | 12.8 | 74 | N | | | 3 | | 0 | | | 0 | Mod'ate | N | Hazy | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 49° 31′, W. 13° 10′ | | 30.43‡ | 772.9‡ | | | | Calm | | | 0 | | 2 | | NW | | Smooth | N | Fair | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Corrections for temperature instrumental error and elevation applied at this office.

## UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

| NAMES OF VESSELS. | True course toward. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Mersey River, Eng | ..... | 30.37‡ | 771.4‡ | 54 | 12.2 | ..... | SW | ..... | ..... | 4 | ..... | 8 | ..... | NE | 0 | ..... | ..... | Fair..... | Captain Sargent. |
| S. S. Ohio | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Wm. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. H. Dodge. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for the Pennsylvania, the cloud-direction as toward instead of from; sea-swell in general terms, as published; rain-fall for the Indiana and Ohio in general terms. ‡Corrections for temperature, instrumental error and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Randle. |
| S. S. Switzerland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jackson. |
| S. S. Vaderland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Nichols. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Richardson. |
| S. S. Hibernian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Powell, 4th Officer. |
| S. S. Peruvian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Aneroid. *The error of the barometer is not known ‡Corrections for temperature, instrumental error and elevation applied at this office.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the co-operation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, N. 39 50,′ W. 73 18′ | ..... | 30.00‡ | 762.0‡ | 48 | 8.9 | 100 | SSE | 6 | 2.7 | .. .... | ..... | 10n | ..... | S | 1.08 in. or 27.4mm. | Smooth | ..... | Raining..... | Capt. James Jorgensen. |
| Brigantine "George of Halifax" | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Willard N. Pratt. |
| Schooner Harry and Fred, N. 26° 45′, W. 68° 50′ | ..... | 29.98‡ | 761.5‡ | ..... | ..... | ..... | ESE | 15 | 6.7 | ..... | ..... | 8 | ..... | E | ..... | Mod'ate | E | Threatening | Capt. George Gardner. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Aneroid. ‡Corrections for temperature, instrumental error and elevation applied at this office.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively by the letters c, k, s, n, d, f, p, hz., fg. and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.*

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 330 DEVONSHIRE ST. BOSTON

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 30, 1879.

**7:35 A. M., WASHINGTON Mean Time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer, corrected for instrum'tal error and temperature. Inches. | Barometer, corrected for instrum'tal error and temperature. Millimeters. | Barometer, reduced to sea-level. Inches. | Barometer, reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador, Marocco | | | | | | | | | | | | | | | | | | | |
| Nemours | | | 30.17 | 766.3 | 67.6 | 19.9 | 41 | E | | | 3 | | 0 | | | 0 | 0 | Clear | Kesxuche. |
| Algiers | | | 30.09 | 764.2 | 63.7 | 17.6 | 63 | WNW | | | 3 | | 0 | | | 0 | 0 | Clear | Tourillere. |
| La Calle | | | 30.05 | 763.2 | 61.5 | 16.4 | 67 | WNW | | | 7 | | 8 | | | 0.110 | 2.8 | Very cloudy | Foufredo. |
| Tunis | | | | | | | | | | | | | | | | | | | Jacques. |
| Sfax | | | 30.14 | 765.5 | | | | | | | | | | | | | | | Gau. |
| Saida | | | 30.14 | 765.5 | 69.8 | 16.0 | 35 | N | | | 5 | | 2 | | | 0 | 0 | Fair | Herbin. |
| Tebessa | | | 30.10 | 764.6 | 50.0 | 10.0 | 40 | NW | | | 5 | | 10 | | | 0.193 | 4.9 | Covered | Watrin. |
| Geriville | | | 30.10 | 764.6 | 56.3 | 13.5 | 26 | NNW | | | 2 | | 2 | | | 0 | 0 | Fair | Brugnlaux. |
| Laghouat | | | 30.11 | 764.8 | 65.8 | 18.8 | 42 | WNW | | | 4 | | 2 | | | 0 | 0 | Fair | Bertrand. |
| Biskra | | | 30.11 | 764.8 | 73.4 | 23.0 | 20 | NW | | | 3 | | 2 | | | 0 | 0 | Fair | Chanvaux. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—In the originals the amount of cloudiness is given by the scale 0–4; distinction between upper and lower clouds is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920.0? feet; Tebessa, 1,088? m., or 3,569.6? feet; Geriville, 1,360? m., or 4,462.0? feet.

### AUSTRIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.34 | 745.1 | 29.88 | 759.0 | 54.3 | 12.4 | 61 | SE | | | 2 | | 9 | | | 0.028 | 0.7 | | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 29 13 | 739.8 | 29.91 | 760.8 | 39.9 | 4.4 | 90 | WNW | | | 3 | | 10 | | | 0.598 | 23.8 | | Dr. Wierzbiski. |
| Eperies | 28.82 | 732.1 | 29.72 | 754.8 | 41.0 | 5.0 | 94 | N | | | 2 | | 10 | | | 0.744 | 18.90 | | Julius Mikolik. |
| Gratz | 28.63 | 727.2 | 29.88 | 758.9 | 52.2 | 11.2 | 40 | NW | | | 5 | | 1 | | | 0.008 | 0.2 | | Andreas Rospini. |
| Hermannstadt | 28.22 | 716.8 | 29.59 | 751.5 | 68.2 | 20.1 | 43 | SSW | | | 3 | | 4 | | | 0.016 | 0.40 | | Prof. A. Gottschling. |
| Kremsmünster | 28.65 | 727.6 | 30.01 | 762.2 | 46.0 | 7.2 | 66 | WSW | | | 2 | | 8 | | | 0.146 | 3.7 | | Prof. C. Wagner. |
| Lemberg | 28.60 | 726.3 | 29.58 | 751.2 | 47.6 | 8.6 | 98 | E | | | 1 | | 10 | | | 0.828 | 20.9 | | Dr. T. Stanecki. |
| Pola | 29.77 | 756.1 | 29.88 | 758.9 | 54.7 | 12.6 | 57 | ESE | | | 1 | | 10 | | | 0.205 | 5.2 | | I.R.Hydrographic Office |
| Szathmar | 29.21 | 741.9 | 29.67 | 753.6 | 52.5 | 11.4 | 71 | SW | | | 3 | | 10 | | | 0.693 | 17.6 | Raining | Julius Csics, S. J. |
| Szegedin | 29.38 | 746.2 | 29.66 | 753.4 | 43.3 | 6.3 | 94 | NW | | | 5 | | 10 | | | 1.008 | 25.60 | | Karl Stancel. |
| Trieste | 29.80 | 757.0 | 29.91 | 759.6 | 55.9 | 13.3 | 67 | N | | | 1 | | 10 | | | 0 | 0 | | P. Busin. |
| Vienna | 29.21 | 742.0 | 29.93 | 760.3 | 48.6 | 9.2 | 40 | NNW | | | 5 | | 5 | | | 0.134 | 3.4 | | I. R. Central Met. Obs'y |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171.3 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet.; Kremsmünster, 383.6 meters, or 1,258.5 feet. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0 instead of 1:45 p. m., local time.

### BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | | | | | | | | | | | | Prof. M. Passau. |
| Brussels | 30.00 | 762.0 | 30.21 | 767.3 | 41.2 | 5.1 | 84 | W | | | 2 | | 10 | | W | 0.104 | 2.65 | Light rain | Royal Observatory. |
| Furnes | 30.22 | 767.5 | 30.24 | 768.1 | 44.8 | 7.1 | 79 | NE | | | 2 | | 6 | | | 0.091 | 2.3 | | M. E. de Cae. |
| Maeseyck | 30.06 | 763.5 | 30.19 | 766.7 | 45.5 | 7.5 | 76 | WSW | | | 2 | | 5 | | | 0.039 | 1.0 | | M. Pierrot. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 0:1, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

**Entered at the Post Office at Washington, D. C., as Second-Class Matter.**

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.18 | 766.6 | 30.28 | 769.1 | 40.7 | 4.8 | ..... | ESE | 7 | 3.1 | ..... | ..... | 6 | ..... | ..... | 0.005 | 0.15 | D. clouds.... | W. Boswell. |
| Ardrossan | 30.21 | 767.3 | 30.23 | 767.8 | 50 | 10.0 | ..... | NNW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.25 | 768.3 | 51.0 | 10.6 | ..... | N | 4 | 1.8 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | S. Call. |
| Bidston, (Liverpool Obs) | ..... | ..... | 30.22 | 767.6 | 47.0 | 8.3 | ..... | W | 7 | 3.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Bolton, (Sharples) | ..... | ..... | 30.22 | 767.6 | 44.6 | 6.7 | ..... | SE | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Thomas Mackereth. |
| Bradford, Yorkshire | 29.79 | 756.7 | 30.18 | 766.6 | 45.7 | 7.6 | ..... | E | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0.01 | 0.3 | D. clouds..... | J. McLandsborough. |
| Bridgetown, (Barbadoes) | 29.93 | 760.2 | 29.96 | 761.0 | 84.5 | 29.2 | ..... | SE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Surgener, A. H. |
| Cambridge, Observatory | ..... | ..... | 30.21 | 767.3 | 54.0 | 12.2 | ..... | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. Todd. [C. |
| Cardington | ..... | ..... | 30.19 | 766.8 | 50.0 | 10.0 | ..... | N | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | John McLaren. |
| Chatham, School M. E | 30.10 | 764.5 | 30.24 | 768.1 | 51.9 | 11.1 | ..... | Calm | ..... | ..... | 0 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | J. Carmell, Sapper, R. E. |
| Dartmoor | 28.67 | 728.2 | 30.17 | 766.3 | 46.0 | 7.8 | ..... | W | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 30.21 | 767.3 | 30.25 | 768.3 | 51 | 10.6 | ..... | NNE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | J. Mac Gowan. |
| Dover | 30.18 | 766.1 | 30.21 | 767.3 | 47 | 8.3 | ..... | ENE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded... | J. Costello. |
| Falmouth, Observatory | 30.01 | 762.2 | 30.24 | 768.1 | 51.3 | 10.7 | ..... | W | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.58 | 700.6 | 29.88 | 758.9 | 82.0 | 27.8 | ..... | NE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.64 | 752.8 | 29.87 | 758.7 | 84 | 28.9 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's college | ..... | ..... | ..... | ..... | 58 | 14.4 | ..... | SE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy..... | Prof. A. Curtis. |
| Gibraltar, (Mediterranean.) | 30.07 | 763.8 | 30.12 | 765.0 | 67.5 | 19.7 | ..... | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. Wm. Allen, A. H. |
| Glasgow, Observatory | 30.02 | 762.5 | 30.23 | 767.8 | 44.9 | 7.2 | ..... | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | D. G. Maclean. [C. |
| Great Yarmouth | 30.23 | 767.8 | 30.24 | 768.1 | 46 | 7.8 | ..... | NE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.04 | 763.0 | 30.22 | 767.6 | 51.9 | 11.1 | ..... | NE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | The staff, for G.B. Airy. |
| Guernsey | 30.04 | 763.0 | 30.27 | 768.8 | 51 | 10.6 | ..... | WSW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S.E.Hoskins, F.R.S. |
| Helston | 30.362 | 771.1 ? | 30.429 | 774.4? | 53 | 11.7 | ..... | SW | ..... | ..... | 2 | ..... | 2c | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 30.20 | 767.1 | 30.22 | 767.6 | 48 | 8.9 | ..... | NNW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 30.00 | 762.0 | 30.30 | 769.6 | 50.0 | 10.0 | ..... | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | J. Fisher. |
| Kew, Observatory | 30.18 | 766.6 | 30.22 | 767.6 | 50.0 | 10.0 | ..... | NNW | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | The Meteorological Of. |
| Leicester, Museum | 29.96 | 761.0 | 30.22 | 767.6 | 50.0 | 10.0 | ..... | NE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Wm. J. Harrison, F.G.S. |
| Malta, Mediterranean | 29.81 | 757.2 | 29.89 | 759.2 | 64 | 17.8 | ..... | W | ..... | ..... | 3 | ..... | 2k | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. H. J. Beckett, A. H. C. |
| Nairn | 30.18 | 766.6 | 30.27 | 768.8 | 50 | 10.0 | ..... | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Clear..... | W. D. Penny. |
| Nassau, (Bahamas) | ..... | ..... | 29.96 | 761.0 | 77.2 | 25.1 | ..... | NE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 30.03 | 762.8 | 30.23 | 767.8 | 48.9 | 9.4 | ..... | N | ..... | ..... | 3 | ..... | 5c;n;k; | ck] ..... | N | 0 | 0 | D. clouds..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.69 | 754.1 | 30.23 | 767.8 | 41.7 | 5.4 | ..... | ENE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Rev. Stephen J. Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.22 | 767.6 | 45 | 7.2 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling..... | H. E. Bellamy. |
| Plymouth | 30.17 | 766.3 | 30.24 | 768.1 | 45.8 | 7.7 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | John Merrifield. |
| Roche's Point | 30.18 | 766.6 | 30.26 | 768.6 | 54 | 12.2 | ..... | SW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded.... | Wm. Kennedy, |
| Saint Ann's Head | 30.06 | 763.5 | 30.20 | 767.1 | 45 | 7.2 | ..... | ESE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | ..... | ..... | 43.5 | 6.4 | ..... | NW | 12 | 5.4 | ..... | ..... | 6 | ..... | ..... | Blank | Blank | D. clouds..... | Rev C.Clouston, L.L.D. |
| Scutari, Cemetery (Turkey) | 29.71 | 754.6 | 29.77 | 756.1 | 77.4 | 25.2 | ..... | SW | ..... | ..... | 1 | ..... | 7c;ks | ..... | ..... | ..... | ..... | D. clouds..... | W. H.Lyne. |
| Sheffield | 29.96 | 761.0 | 30.25 | 768.3 | 44.4 | 6.9 | ..... | NE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.11 | 2.8 | Overcast..... | W. F. Cooper. |
| Silloth Rectory | 30.18 | 766.6 | 30.21 | 767.3 | 51.5 | 10.8 | 53 | E | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0.350 | 8.89 | D. clouds..... | Francis Redford, A. M. |
| Stonyhurst, Observatory | 29.82 | 757.4 | 30.22 | 767.6 | 48.0 | 8.9 | ..... | NE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | Misty..... | Rev. S. J. Perry. |
| Stratfield, Turgiss | 30.04 | 763.0 | 30.26 | 768.6 | 48.4 | 9.1 | ..... | N | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Foggy..... | C. H. Griffith, F. M. S. |
| Truro, Royal Institution | 30.20 | 767.1 | 30.23 | 767.8 | 58 | 14.4 | ..... | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy..... | W. Newcombe. |
| Valencia, Observatory | 30.19 | 766.8 | 30.22 | 767.6 | 54.2 | 12.3 | ..... | WSW | 9 | 4.0 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | The Meteorological Of. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Cape of Good Hope Obs'y | 30.00 | 762.0 | 30.04 | 763.0 | 73 | 22.8 | 65 | SSW | 23 | 10.3 | ..... | 4 | 5 | ..... | ..... | 0 | 0 | Fine..... | The Staff, for D. Gill. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.94 | 760.5 | 49 | 9.5 | 93 | SW | ..... | ..... | 2 | ..... | 7kn | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 30.31 | 769.9 | 44.4 | 6.9 | ..... | E | ..... | ..... | 2 | 8ck] | ..... | W | ..... | 0.04 | 1.0 | Cloudy..... | Andrew Gibb. |
| Mauritius, Observatory | 29.85 | 758.2 | 30.04 | 763.0 | 77.6 | 25.3 | 65 | E | 18.5 | 8.0 | ..... | 2 | 4 | ..... | ESE | 0.27 | 6.8 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 30.04 | 763.0 | 30.13 | 765.3 | 50.6 | 10.3 | 87 | W | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | 0.10 | 2.5 | Dull..... | R. L. J. Ellery. |
| Monach Lt-house, (Hebrides) | ..... | ..... | 30.29 | 769.4 | 48 | 8.9 | ..... | E | ..... | ..... | 4 | 3 | 0 | E | ..... | 0 | 0 | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | 30.27 | 768.8 | 38 | 3.3 | ..... | SE | ..... | ..... | 1 | 10 | 8 | Calm | ..... | ..... | ..... | ..... | Robert Burnet. |

Note—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing but not to sea-level. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen, (following day) at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

| British Marine Series. Vessels. | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer |
|---|---|---|---|---|
| H. M. S. "Fawn," N. 40° 41', E. 29° 33' | 29.80‡ | 756.9‡ 73.8 23.2 ..... Calm ..... ..... 0 ..... 7 ..... ..... | D. clouds..... | Capt. W. J. L. Wharton. |
| Brig Alliance | | | | Capt. W. Scott. |
| S. S. Amanda | | | | Capt. B. Boyes. |
| Barque Belle-Isle | | | | Capt. A. J. Brown. |
| Ship British Commodore, N. 39° 00', W. 61° 50' | 30.17 | 766.3 66 18.9 ..... S ..... ..... 4 ..... 3 ..... ..... | 3 S; ENE | D. clouds..... Capt. J. W. Thorne. |
| —— City of Agra, | | | | Capt. Thos. Young. |
| Barque Commewyne | | | | Capt. A. Buchan. |
| Barque Fedalina | | | | Capt. H. L. Fox. |
| Barque Mertole | | | | Capt. E. W. Turner. |
| S. S. Nizam | | | | Capt. Barlow. |
| S. S. Strathleven | | | | Capt. C. W. Pearson. |
| S. S. Wyberton | | | | Capt. W.R. McMontry |

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have generally been carefully compared and corrected. ‡Correction for temperature and elevation applied at this office.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | | | | | | | | | | | | | | | | | | | |
| San José | 26.18 | 665.0 | 29.90 | 759.4 | 67.6 | 19.8 | 97 | Calm | | | 0 | 10s | | | 6... | 0.6 | 15. | | Mr. Ansart. Federico Maison |

NOTE.—For St. Jose the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches for an altitude of 1,145 meters, or 3,756.6 feet; the distinction between the upper and lower clouds is not always made; the rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.04 | 763.0 | 30.09 | 764.2 | 45.7 | 7.6 | 55 | E | | | 2 | | 1 | | | | | | |
| Faröe | 30.06 | 763.4 | 30.08 | 763.9 | 42.3 | 5.7 | 78 | Calm | | | 0 | | 9 | | | | | | Raining |
| Godthaab, (Greenland) | 30.03 | 762.7 | 30.07 | 763.8 | 34.7 | 1.5 | 83 | NNE | | | 4 | | 4 | | | | | | |
| Stykkisholm, (Iceland) | | | | | | | | | | | | | | | | | | | |
| Thorshavn, (Faröe) | 30.25 | 768.4 | 30.29 | 769.3 | 47.5 | 8.6 | 47 | WSW | | | 2 | | 4 | | | | | | |
| Vestervig | 29.93 | 760.1 | 30.10 | 764.4 | 41.7 | 5.4 | 78 | NE | | | 6 | | 2 | | | | | | Snowing |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

## FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.77 | 756.2 | 30.32 | 770.2 | 50.7 | 10.4 | 50 | NW | | | 2 | | 8 | | NW | 0.008 | 0.2 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 30.06 | 763.6 | 30.17 | 766.4 | 52.9 | 11.6 | 78 | WNW | | | 1 | | 10 | | | 0 | 0 | Covered | Bouvallet, Director. |
| Avignon, Normal School | 29.92 | 760.0 | 30.00 | 762.0 | 59.5 | 15.3 | 48 | N | | | 4 | | 2 | | N | 0 | 0 | Partly cl'dy | Giraud, Director |
| Bar-sur-Seine | 29.66 | 753.3 | 30.23 | 767.7 | 49.8 | 9.9 | 42 | NE | | | 2 | | 8kn | | NE | 0 | 0 | Very cloudy | C. Saillard, Director. |
| Beauvais, Normal School | 29.94 | 760.6 | 30.21 | 767.4 | 49.1 | 9.5 | 65 | WNW | | | | | 10 | | WNW | 0 | 0 | Covered | Frere Eugene Marie, Dr |
| Besançon, Normal School | 29.28 | 743.6 | 30.19 | 766.7 | 48.2 | 9 | 66 | NE | | | 2 | | 2 | | N | 0.083 | 2.1 | Slightly cl'dy | A. Carré, Director. |
| Bourg-en-Bresse, N. School | 29.30 | 744.3 | 30.22 | 767.5 | 49.1 | 9.5 | 64 | N | | | 3 | | ck | N | N | 0 | 0 | | Marlot, Director. |
| Bourges, Normal School | 29.69 | 754.1 | 30.25 | 768.4 | 49.3 | 9.6 | 56 | N | | | 1 | | ckn | N | N | 0 | 0 | | A. Waquet, Director. |
| Brest, Naval Observatory | 30.02 | 762.4 | 30.26 | 768.6 | 57.9 | 14.4 | 60 | S | | | 2 | | 9 | | SW | 0 | 0 | | De Rermaree, Director |
| Carcassonne, Normal School | 29.73 | 755.1 | 30.15 | 765.8 | 57.7 | 14.3 | 47 | WNW | | | 3 | | 2 | | WNW | 0 | 0 | Slightly cl'dy | September, Director. |
| Caen, Normal School | 30.14 | 765.5 | 30.17 | 766.4 | 52.5 | 11.4 | 52 | NW | | | 1 | | 8 | | NW | 0.016 | 0.4 | Very cloudy | Lair, Director. |
| Chartres, Normal School | 29.64 | 752.8 | 30.21 | 767.4 | 53.2 | 11.8 | 90 | W | | | 1 | | 9 | | SW | 0 | 0 | | Vergier, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.89 | 759.3 | 30.22 | 767.5 | 48.5 | 7.5 | 71 | NW | | | 1 | | 10 | | | 0 | 0 | Covered | Jadot, Director. |
| Clermont-Fd., Puy de D. Ob | 28.71 | 729.1 | 30.09 | 764.2 | 46.9 | 8.3 | 44 | NW | | | 2 | | 8 | | N | 0 | 0 | | Alluard, Director. |
| Commercy, Normal School | 29.80 | 744.1 | 30.22 | 767.5 | 46.0 | 7.8 | 70 | NW | | | 1 | | cn | | NW | 0 | 0 | | Dr. Coulet, Director. |
| Commune de Grèasque* | 28.80 | 731.5 | 29.94 | 760.5 | 57.7 | 14.3 | 39 | NW | | | 3 | | 2 | | NW | 0 | 0 | ¾ covered | L. Kina, Director. |
| Grenoble, Normal School | 29.29 | 743.9 | 30.06 | 763.6 | 48.6 | 9.8 | 59 | NW | | | 4 | | 8kn | | NE | 0 | 0 | Very cloudy | Ablard, Director |
| La Roche-sur-Yon, N. School | 30.10 | 764.5 | 30.32 | 770.0 | 60.1 | 15.6 | 56 | N | | | 1 | | 5 | | NNW | 0 | 0 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.96 | 761.0 | 30.27 | 768.9 | 54.5 | 12.5 | 59 | N | | | 2 | | 5 | | N | 0.12 | 3. | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.25 | 743.0 | 30.18 | 766.5 | 44.4 | 6.9 | 60 | NE | | | 2 | | 5 | | NE | 0 | 0 | Cloudy | A. Baudry, Director. |
| Lorient, Naval Observatory | 30.22 | 767.5 | 30.32 | 770.0 | 56.5 | 13.6 | 60 | SW | | | 2 | | | | SW | 0 | 0 | | Lt T. Carré, Director |
| Mâcon, Normal School | | | | | | | | | | | | | | | | | | | Galzin, Director |
| Marseilles, Observatory | | | | | | | | | | | | | | | | | | | The Staff. |
| Mirecourt, Normal School | 29.08 | 738.7 | 30.15 | 765.7 | 45.7 | 7.6 | 40 | N | | | 3 | | 2 | | NE | 0 | 0 | Slightly cl'dy | Barbier, Director. |
| Nimes, Normal School | 29.81 | 757.1 | 30.01 | 762.3 | 57.6 | 14.2 | 83 | N | | | 6 | | 2 | | N | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Privas, Normal School | 29.84 | 735.1 | 30.01 | 762.3 | 54.0 | 12.2 | 67 | N | | | 4 | | | N | N | 0 | 0 | | Cantier, Director. |
| Puy de Dome (Summit) Obs | 25.19 | 639.9 | | | 27.0 | — 2.8 | 100 | N | | | 2 | | 8 | | | 0.178 | 4.4 | Very cloudy | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.30 | 769.5 | 30.33 | 770.3 | 60.8 | 16.0 | 42 | E | | | 1 | | 5 | NNW | NNW | 0.20 | 5. | ½ covered | Lt. E. Decante, Director. |
| Rouen, Normal School | 30.13 | 765.2 | 30.21 | 767.4 | 50.5 | 10.3 | 65 | NNW | | | 2 | | 8 | | NW | 0 | 0 | Very cloudy | Frere Lucard, Director. |
| Saint Malo (Port) Obs'y | 30.23 | 767.8 | 30.26 | 768.5 | 54.0 | 12.2 | 58 | N | | | 2 | | 1 | N | N | 0 | 0 | Clear | Lt. Horcouet, Director |
| Saint Maur, (near Paris) | 30.06 | 763.5 | 30.23 | 767.7 | 52.9 | 11.6 | 56 | W | | | 1 | | | NW | WNW | 0.083 | 2.1 | | E. Renou, Director. |
| Tarbes, Normal School | 29.19 | 741.5 | 30.30 | 769.5 | 50.0 | 10 | 74 | W | | | 1 | | 2 | | | 0 | 0 | Slightly cl'dy | T. Huguet, Director. |
| Toulouse, Observatory | 29.54 | 750.2 | 30.26 | 768.6 | 52.2 | 11.2 | 56 | NW | | | 4 | | 5 | | | 0 | 0 | | Mercadier Julier. |
| Versailles Observatory | 29.73 | 755.1 | 30.22 | 767.6 | 51.1 | 10.6 | 54 | NE | | | 1 | | | | | 0.073 | 1.86 | | Dr. A. Berigny, Director |
| Villefranche-sur-Saone, N.S. | 29.46 | 748.2 | 30.17 | 766.3 | 48.7 | 9.3 | 89 | N | | | 1 | | 8 | | N | 0 | 0 | Very cloudy | Nicot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.80 | 757.1 | 29.84 | 757.8 | 77.4 | 25.2 | | | | | | | | | | 0.16 | 4. | | L'Abbé Marcl.6si, |
| Lyons Obs'y, (Park Station) | 29.53 | 750.1 | 30.16 | 766.0 | 48.9 | 9.4 | 41 | NNE | | | 3 | | 6 | | N | 0 | 0 | Cloudy | Mr. Jays. |
| Mont-Louis | 24.87 | 631.6 | 30.18 | 766.6 | 35.6 | 2.0 | 63 | NE | 13.0 | 5.8 | | | 8 | | | 0.028 | 0.7 | | M. Cave. |
| Nice | | | 29.92 | 759.9 | 58.6 | 14.8 | 63 | E | | | 1 | | 10 | | | | | Light rain | Dr. A. Nieyce, Jr. |
| Paris, Montsouris Obs'y | 29.94 | 760.4 | | | 52.2 | 11.2 | 52 | S | | | 1 | | 9 | | NNW | Inap | Inap. | | Marié Davy, Director. |
| Perpignan | 30.03 | 762.7 | 30.18 | 766.4 | 57.2 | 14.0 | 87 | NW | 31.8 | 14.2 | | | 3 | | NW | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.53 | 572.2 | | | 26.8 | — 2.9 | | N | | | 1 | | 10 | | | 0.203 | 5.15 | Snowy | Gen'l de Nansouty. |
| Tours | 30.06 | 763.5 | 30.26 | 768.5 | 54.1 | 12.3 | 50 | NE | | | 1 | | 8 | | N | 0 | 0 | | Cousn-Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 29.85 | 758.1 | 29.87 | 758.8 | 58.6 | 14.7 | 68 | ESE | 0.4 | 0.2 | | 10 | | | | 0 | 0 | Covered | MarcDechevrens. |
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount in general terms, except Clermont-Ferrand, Nice and Grenasque by the scale 0 to 4; Brest and Chartres by the scale 0 to 10; Mirecourt, apparently, gives cloud-direction towards instead of from. The rain-fall as measured at 7, 8 or 9 a.m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a.m. of the following day; the weather in general terms as published; at Saint Maur, the observations have been taken at 1:00 instead of 0:53 p.m. local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273.0 feet: Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813.1 ft.; Tarbes, 308 m., or 1,010.5 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439.2 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,762.6 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135.0 millimeters, or 5.315 inches has been added. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.19 | 741.4 | 30.03 | 762.8 | 46.0 | 7.8 | 35 | NW | | | 4 | | 5 | NW | | 0.012 | 0.3 | | Prof. Dr. Hoh. |
| Berlin | 29.93 | 760.2 | 30.11 | 764.7 | 48.0 | 8.9 | 58 | N | | | 1 | | 10 | | | 0.008 | 0.2 | | Prof. Arndt. |
| Breslau | 29.48 | 748.7 | 30.01 | 762.2 | 43.0 | 6.1 | 60 | NNW | | | 4 | | 10 | NNW | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.72 | 754.8 | 30.15 | 765.9 | 46.8 | 8.2 | 53 | N | | | 2 | | 10 | NW | | 0.008 | 0.2 | Light rain | Albert Senz. |
| Cassel | 29.52 | 749.7 | 30.13 | 765.2 | 43.9 | 6.6 | 48 | NW | | | 4 | | 7 | WNW | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.99 | 761.8 | 30.15 | 765.9 | 50.0 | 10.0 | 55 | NW | | | 3 | | 6k | | | 0 | 0 | | Director Lose. |
| Emden | | | | | | | | | | | | | | | | | | | Prof. Prestel. |
| Frankfort on the Main | 29.80 | 756.8 | 30.17 | 766.2 | 46.6 | 8.1 | | NNE | | | 2 | | 8 | | | Inap. | Inap. | | Physical Society. |
| Freienwalde on the Oder | 30.02 | 762.5 | 30.06 | 763.5 | 50.7 | 10.4 | 69 | NNW | | | 3 | | 9ks | NNW | | 0 | 0 | | Assmann., M. D. |
| Friedrichshafen | 28.65 | 727.8 | 30.13 | 765.3 | 42.4 | 5.8 | 74 | NNE | | | 7 | | 8 | NE | | 0.319 | 8.1 | | M. Wilhelm. |
| Hamburg | 30.02 | 762.6 | 30.10 | 764.4 | 47.5 | 8.6 | 55 | W | | | 2 | | 9k | WSW | | 0 | 0 | Gloomy | Captain F. Hegeman. |
| Kiel | 30.06 | 763.4 | 30.07 | 763.8 | 47.3 | 8.5 | 48 | SSE | | | 1 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg (Prussia) | 29.85 | 758.3 | 29.94 | 760.4 | 48.7 | 9.3 | 84 | SE | | | 3 | | 8 | | | 0.079 | 2.0 | | Prof. E. Luther. |
| Köslin | | | 30.02 | 762.6 | 38.8 | 3.8 | | N | | | 4 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.69 | 754.2 | 30.12 | 765.1 | 44.2 | 6.8 | 59 | NW | | | 3 | | 8 | NW | | 0 | 0 | | Prof. Bruhns, Privy Counselor. |
| Memel, Naval School | 29.92 | 760.0 | 29.97 | 761.2 | 44.8 | 7.1 | 76 | ENE | | | 4 | | 10n | | | | | Squally | Skalweit. |
| Neufahrwasser | 29.95 | 760.8 | 29.97 | 761.2 | 40.5 | 4.7 | 92 | NW | | | 3 | | 10 | | | 0.142 | 3.6 | Hazy | A. Lothes. |
| Posen | 29.73 | 755.1 | 30.02 | 762.6 | 44.2 | 6.8 | 64 | N | | | 6 | | 10 | | | 0 | 0 | | Dr. Magener. |
| Strassburg (in Alsace) | 29.63 | 752.7 | 30.20 | 767.0 | 46.8 | 8.2 | 55 | N | | | 2 | | 9 | NW | | 0.005 | 0.13 | Raining | Imp. University Observatory. |
| Stuttgart | 29.15 | 740.5 | 30.12 | 765.0 | 43.7 | 6.5 | 68 | N | | | 1 | | 10 | | | 0.016 | 0.4 | | Prof. Schoder. |
| Treves (Trier) | 29.61 | 752.2 | 30.14 | 765.5 | 49.1 | 9.5 | 44 | W | | | 4 | | 6 | | | 0.071 | 1.8 | | Prof. Flesch. |
| Weissenburg (Bavaria) | 28.56 | 725.5 | 30.10 | 764.6 | 43.7 | 6.5 | 55 | N | 7 | 3 | | | 7ck | | N | 0 | 0 | Hazy | Dr. Van Bebber |
| Wustrow, Naval School | 30.07 | 762.8 | 30.10 | 764.4 | 43.5 | 6.4 | 66 | WNW | | | 3 | | 10s | | | 0 | 0 | | E. Schütz, Dir. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Weissenburg, 427 m., or 1,400.9 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4, and at Crefeld by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m., Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.45 | 748.1 | 29.84 | 757.8 | 69.8 | 21.0 | | SW | | | 2.5 | | | | | | | Covered | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.67 | 753.6 | 29.72 | 754.9 | 85.9 | 29.9 | 67 | WSW | | | | | 2 | | | 0 | 0 | D. clouds | |
| Deesa | | | | | 104.0 | 40.0 | 13 | W | 7.9 | 3.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.74 | 755.3 | 29.77 | 756.2 | 84.4 | 29.1 | 81 | WNW | 12 | 5.4 | | | 2 | WNW | | 0 | 0 | D. clouds | |
| Poona | 27.78 | 705.7 | 29.73 | 755.0 | 93.7 | 34.3 | 43 | NW | | | | | 2 | | | 0 | 0 | D. clouds | |
| Lahore | 28.84 | 732.6 | 29.56 | 750.7 | 97.2 | 36.2 | 7 | SW | 2.9 | 1.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.26 | 692.4 | 29.76 | 755.8 | 84.2 | 29.0 | 73 | W | 19 | 8.5 | | | 2 | E | E | 0 | 0 | D. clouds | |
| Roorkee | 28.72 | 729.6 | 29.58 | 751.4 | 99.1 | 37.3 | 7 | NW | 3.3 | 1.5 | | | 5 | | | 0 | 0 | D. clouds | |
| Agra | 29.07 | 738.4 | 29.61 | 752.0 | 103.6 | 39.8 | 11 | NW | | | | | 0 | | | 0 | 0 | | |
| Nagpur | 28.61 | 726.8 | 29.61 | 752.0 | 103.7 | 39.8 | 12 | NW | 4.9 | 2.2 | | | 2 | | | 0 | 0 | D. clouds | |
| Lucknow | 29.20 | 741.5 | 29.56 | 750.7 | 97.1 | 36.2 | 38 | NW | 1.7 | 0.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Allahabad | 29.28 | 743.6 | 29.58 | 751.2 | 103.1 | 39.5 | 19 | Calm | 1.9 | 8.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.38 | 746.2 | 29.55 | 750.6 | 99.0 | 37.2 | 32 | Calm | 1.6 | 0.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.02 | 701.6 | 29.55 | 750.6 | 97.8 | 36.6 | 10 | NNW | 7.7 | 3.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.57 | 751.0 | 29.65 | 753.0 | 88.5 | 31.4 | | SSW | 9 | 4.0 | | | 0 | | | 0 | 0 | | |
| Calcutta (Alipore) | 29.63 | 752.6 | 29.65 | 753.1 | 87.2 | 30.7 | 71 | S | 11.0 | 4.9 | | | 8 | | SW | 0 | 0 | D. clouds | |
| Goalpara | 29.32 | 744.8 | 29.72 | 754.8 | 76.3 | 24.6 | 71 | SE | 12.0 | 5.4 | | | 4 | | WSW | 0 | 0 | D. clouds | |
| Chittagong | 29.67 | 753.7 | 29.76 | 756.0 | 85.7 | 29.8 | 74 | S | 5.0 | 2.2 | | | 1 | | | 0 | 0 | Squally | |
| Sibsagar | 29.43 | 747.4 | 29.77 | 756.0 | 75.7 | 24.3 | 85 | NE | 1.8 | 0.8 | | | 10 | W | W | 0 | 0 | D. clouds | |
| Jubbulpore | 28.29 | 718.5 | 29.59 | 751.6 | 101.7 | 38.7 | 13 | NW | 5.9 | 2.6 | | | 0 | | | 0 | 0 | Blue sky | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 2,000.4 ft., or 609.7 m.; Nagpur is 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since observation of the preceding day.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upper. 0—10. | Clouds. Amount. Lower. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.47 | 748.4 | 29.87 | 758.8 | 56.7 | 13.7 | 67 | S | 4.9 | 2.2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Clodig. |
| Milan | 29.34 | 745.3 | 29.86 | 758.4 | 58.5 | 14.7 | 35 | W | ..... | ..... | 2 | ..... | 7 | S | ..... | 0.142 | 3.6 | ..... | Prof. Schiaparelli. |
| Padua | 29.78 | 756.3 | 29.89 | 759.1 | 58.6 | 14.8 | 47 | ESE | 9.8 | 4.4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni. |
| Moncalieri | 28.95 | 735.2 | 29.84 | 758.0 | 59.2 | 15.1 | 45 | ESE | 3.1 | 1.4 | ..... | ..... | 6 | N | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Genoa | 29.66 | 753.3 | 29.85 | 758.1 | 64.8 | 18.2 | 37 | S | 4.9 | 2.2 | ..... | ..... | 4 | W | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Mondovi | 27.95 | 709.9 | 29.85 | 758.2 | 54.9 | 12.7 | 30 | E | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Pesaro | 29.84 | 757.9 | 29.89 | 759.1 | 55.8 | 13.2 | 50 | NE | 9.4 | 4.2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Florence | 29.59 | 751.6 | 29.85 | 758.1 | 58.5 | 14.7 | 48 | NE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | 0.142 | 3.6 | ..... | Cav. F. Meucci |
| Leghorn | 29.72 | 755.0 | 29.81 | 757.2 | 61.7 | 16.5 | 51 | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Rome | 29.61 | 752.1 | 29.78 | 756.5 | 59.0 | 15.0 | 67 | E | 4.9 | 2.2 | ..... | ..... | 10 | ..... | ..... | 0.315 | 8.0 | ..... | Prof. P. S. Ferrari |
| Lecce | 29.57 | 751.1 | 29.82 | 757.5 | 61.7 | 16.5 | 65 | WSW | 13.7 | 6.1 | ..... | ..... | 6 | SW | ..... | 0.965 | 24.5 | ..... | Prof. C. De Giorgi. |
| Cosenza | 28.95 | 735.2 | 29.82 | 757.5 | 59.2 | 15.1 | 72 | NW | 0.7 | 0.3 | ..... | ..... | 10 | ..... | ..... | 0.398 | 10.1 | ..... | Prof. D. Conti. |
| Cagliari | 29.61 | 752.2 | 29.81 | 757.1 | 60.4 | 15.8 | 60 | NW | ..... | ..... | 4 | ..... | 10 | NW | ..... | 0.496 | 12.6 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.58 | 751.2 | 29.83 | 757.6 | 60.8 | 16.0 | 55 | WSW | 10.5 | 4.7 | ..... | ..... | 10 | WSW | ..... | 0.169 | 4.3 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.78 | 756.4 | 29.85 | 758.2 | 65.3 | 18.5 | 48 | W | 17.4 | 7.8 | ..... | ..... | 7 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.27 | 743.5 | 29.83 | 757.6 | 53.6 | 12.0 | 84 | ENE | 1.8 | 0.8 | ..... | ..... | 10 | ..... | ..... | 0.079 | 2.0 | ..... | Prof. F. Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hiroshima, I. M. Obs'y | 30.07 | 763.8 | 30.09 | 764.3 | 62.7 | 17.1 | 86 | SW | 2.1 | 0.9 | ..... | ..... | 9cs;ck | ..... | ..... | 0 | 0 | Cloudy | K. Sasaki. |
| Nagasaki, I. M. Obs'y | 29.85 | 758.2 | 30.05 | 763.3 | 65.1 | 18.4 | 85 | N | 0.4 | 0.2 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | S. Takehayashi. |
| Tokei, (Yeddo) Observatory | 30.08 | 764.0 | 30.15 | 765.8 | 60.9 | 16.1 | 90 | ESE | 4.9 | 2.2 | ..... | 8cs;c | 0 | ..... | ..... | 0 | 0 | Fair | The Staff. |

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Ceballos. |
| Guadalajara | 25.07 | 636.8 | 30.11 | 764.8 | 55.4 | 13.0 | 46 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | Prof. L. Perez. |
| Leon | 24.45 | 621.2 | 30.15 | 765.8 | 62.5 | 16.9 | 66 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. M. Leal. |
| Mexico, Central Obs'y | 23.14 | 587.7 | 30.23 | 767.7 | 50.0 | 10.0 | 58 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Light haze | The Staff. |
| Pabellon, (Aguascalientes) | ..... | ..... | ..... | ..... | 56.5 | 13.6 | 51 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. V. de Leon, M. E. |
| Tlacotalpam | 30.01 | 762.2 | 30.02 | 762.5 | 71.8 | 22.1 | 90 | SW | ..... | ..... | 1 | 1 | 0 | ..... | ..... | 0 | 0 | Light fog | M. M. Chazaro. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | 22.57 | 573.3 | 30.15 | 765.9 | 61.2 | 16.2 | 47 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | J. Castrillon. |
| Puebla, (Catholic Institute) | 23.43 | 595.1 | 30.19 | 766.9 | 44.6 | 7.0 | 60 | E | 1.3 | 0.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. P. Spina. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| Colima | 28.36 | 720.2 | 30.02 | 762.1 | 74.3 | 23.5 | 55 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | R. Banda, C. E. |
| San Juan E. Michapam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Antonio Guerra y Guerra. |

NOTE.—The elevation of Cuernavaca is 1,556.5 m., or 5,106.7 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Pabellon, 1,924.4 m.; or 6,313.8 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189.1 ft.; Puebla, Catholic Institute, 2,167.8m., or 7,112.3 ft.; Durango, 1,870 m., or 6,135.3 ft.; Colima, 507.3 m., or 1,664.4 ft. The data are published as given, except the conversions, which have been revised; the instrumental correction —0.88 mm., has been applied at this office to the barometer at Mexico.

## NETHERLANDS SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.23 | 767.7 | 30.23 | 767.7 | 48.2 | 9.0 | ..... | N | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 30.09 | 764.3 | 30.15 | 765.7 | 44.8 | 7.1 | ..... | NNW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 30.17 | 766.4 | 30.17 | 766.4 | 41.4 | 5.2 | ..... | WNW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 30.19 | 766.9 | 30.19 | 766.9 | 47.1 | 8.4 | 65 | NNW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.15 | 765.7 | 30.19 | 766.9 | 46.2 | 7.9 | 65 | NNE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.067 | 1.8 | Very cloudy | H. v. d. Brink. |

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.11 | 764.7 | 30.16 | 766.1 | 46.4 | 8.0 | 59 | NNW | 5.4 | 2.4 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 30.18 | 766.5 | 30.22 | 767.5 | 44.2 | 6.8 | 46 | W | 9 | 4 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 30.03 | 762.7 | 30.18 | 766.5 | 46.8 | 8.2 | 44 | ENE | 4 | 2 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.97 | 761.3 | 30.02 | 762.4 | 32.7 | 0.4 | 92 | SW | 25 | 11 | ..... | ..... | 10 | ..... | ..... | 0.307 | 7.8 | Snowing .... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h. 4 min. p. m.

## PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz, at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra (Azores) | 30.08 | 764.0 | 30.27 | 768.8 | 63.7 | 17.6 | 82 | S | 1.3 | 0.6 | ..... | ..... | •9 | ..... | ..... | 0.039 | 1.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.22 | 742.1 | 30.24 | 768.0 | 64.4 | 18.0 | 31 | NNE | 5.6 | 2.5 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Dr. A.M. R. dos Santos. |
| Funchal (Madeira) | 30.10 | 764.5 | 30.19 | 766.7 | 68.7 | 20.4 | 59 | SW | 8.1 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.92 | 759.9 | 30.28 | 769.0 | 65.7 | 18.7 | 36 | NE | 12.5 | 5.6 | ..... | ..... | 2 | NNW | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada (Azores) | 30.15 | 765.7 | 30.22 | 767.5 | 66.2 | 19.0 | 79 | ESE | 11.2 | 5.0 | ..... | ..... | 3 | ..... | ..... | 0.020 | 0.5 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Portuguese Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. G. da Silva Costa, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A.M.de Sande, Com'd't. |
| Duque da Terceira, San Jose de Bissao, Senegambia | ..... | ..... | 30.06 | 763.5 | 74.3 | 23.5 | ..... | W | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 1 | ..... | Blue sky..... | C.C.da Fonseca Ferreira, Comd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Quanza, S. 7° 09′, E. 12° 04′ | ..... | ..... | 29.83 | 757.6 | 84.2 | 29.0 | ..... | SSE | ..... | ..... | 2 | ..... | 4 | ..... | SE | 1 | SW | D. clouds..... | A.J.de Mattos, Com'd't. |
| Rio Douro | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J.T.d'Oliveria, Com'd't. |
| Rio Lima, Capt. S. C. da Silva Costa, Porto de Bulama, Senegambia | ..... | ..... | 29.85 | 758.3 | 81.7 | 27.6 | ..... | Var. | ..... | ..... | 3 | ..... | 5 | ..... | SSW | 1 | ..... | D. clouds.... | A. Ferreira, 2d Lt |
| Sá da Bandeira | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. Teixeira da Silva, Com'd't. |
| Sado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Ribeiro de Costa, Com'd't. |
| Tejo, Macao, China | ..... | ..... | 29.96 | 761.0 | 77.9 | 25.5 | ..... | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 1 | SE | Blue sky..... | J. M. T. Guimaraes, Com'd't. |

NOTE.—In the originals the weather is given by the Beaufort notation; not any distinction between the upper and lower clouds; not any humidity. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

## RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.44 | 747.8 | 29.87 | 758.8 | 41.5 | 5.3 | 89 | NNW | 11 | 5 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Raining..... | Astronomical Obs. |
| Wilna | 29.55 | 750.6 | 29.97 | 761.3 | 49.5 | 9.7 | 63 | NE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds... | Astronomical Obs. |
| Dorpat | 29.89 | 759.2 | 30.14 | 765.6 | 42.8 | 6.0 | 43 | ENE | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.13 | 765.2 | 30.14 | 765.6 | 48.0 | 6.1 | 33 | E | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.17 | 740.8 | 29.78 | 756.5 | 63.5 | 17.5 | 67 | SE | 9 | 4 | ..... | ..... | 10cs;ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.79 | 756.7 | 29.86 | 758.5 | 76.1 | 24.5 | 36 | S | 13 | 6 | ..... | ..... | 7ck | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.93 | 760.3 | 29.95 | 760.8 | 70.9 | 21.6 | 63 | SE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.44 | 747.8 | 30.00 | 762.0 | 43.5 | 6.4 | 86 | N | 11 | 5 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.71 | 754.5 | 29.90 | 759.5 | 80.6 | 27.0 | 39 | SW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.97 | 761.2 | 29.99 | 761.7 | 29.3 | — 1.4 | 82 | WNW | 22 | 10 | ..... | ..... | 3ks | ..... | ..... | ..... | ..... | ..... | Capt. Sseliwerstow. |
| Tiflis | 28.65 | 727.6 | 29.99 | 761.7 | 82.9 | 28.3 | 35 | S | 13 | 6 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Astrakhan | 30.19 | 766.9 | 30.11 | 764.8 | 76.8 | 24.9 | 30 | ESE | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Capt. Wisganow. |
| Krotkowo* | 29.38 | 746.2 | 29.84 | 758.0 | 56.7 | 13.7 | 79 | E | 20 | 9 | ..... | ..... | 7kn | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.41 | 747.1 | 29.67 | 753.7 | 61.0 | 16.1 | 64 | SSW | 13 | 6 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 28.95 | 735.3 | 29.59 | 759.1 | 65.1 | 18.4 | 38 | S | 7 | 3 | ..... | ..... | 4k;ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.80 | 757.0 | 30.02 | 762.6 | 83.5 | 28.6 | 47 | NNE | 18 | 8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.37 | 720.7 | 29.87 | 758.8 | 76.3 | 24.6 | 64 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Teich, A. M. |
| Barnaul | 29.36 | 745.8 | 29.84 | 758.0 | 66.6 | 19.2 | 43 | N | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.66 | 753.4 | 29.96 | 760.9 | 39.6 | 4.2 | 82 | N | 2 | 1 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Peking (China) | 29.77 | 756.2 | 29.91 | 759.8 | 59.2 | 15.1 | 51 | SE | 4 | 2 | ..... | ..... | 8n | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 30.01 | 762.3 | 30.11 | 764.8 | 35.8 | 2.1 | 93 | S | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455 m., or 1,492.8 ft.; Irkutsk, 461.5 m., or 1,514.0 ft.; Nertchinsk, 660 ? m., or 2,165.4 ? ft. *N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.93 | 760.2 | 30.04 | 762.9 | 62.2 | 16.8 | 53 | SE | 5.2 | 2.33 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | Antonio Rave, Director |
| Bilbao, Met. Obs'y | 30.31 | 769.8 | 30.36 | 771.2 | 60.4 | 15.8 | 67 | NW | 2.9 | 1.30 | ..... | 2 | 6 | N | ..... | 0.055 | 1.4 | Almost cov'd | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.28 | 693.0 | ..... | ..... | 50.9 | 10.5 | 52 | N | 9.3 | 4.17 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | Domingo Martin y Perez. |
| Madrid, Royal Osservatory | 27.98 | 710.6 | ..... | ..... | 62.2 | 16.8 | 42 | N | 19.4 | 8.67 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | The Staff. |
| Murcia, Met. Obs'y | 29.99 | 761.7 | 30.14 | 765.5 | 71.6 | 22.0 | 38 | N | 4.1 | 1.83 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.38 | 746.2 | 30.26 | 768.7 | 59.9 | 15.5 | 58 | NE | 10.5 | 4.7 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | Almost clear | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.92 | 759.9 | 29.98 | 761.5 | 73.9 | 23.3 | 81 | NE | 5.1 | 2.3 | ..... | 0 | 1k | ..... | NE | 0 | 0 | Clear..... | Benito Vines, S. J |
| Manilla, Philippine Islands | 29.76 | 755.9 | 29.81 | 757.2 | 84.2 | 29.0 | 65 | ESE | 5.1 | 2.3 | ..... | ..... | 1 | ..... | E | 0 | 0 | Clear..... | Federico Faura, S. J. |
| San Fernando, Naval Obs'y | 30.09 | 764.3 | 30.19 | 766.8 | 70.9 | 21.6 | 27 | NE | 10.8 | 4.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de Porto Rico, W.I | 29.88 | 759.0 | 29.97 | 761.3 | 79.9 | 26.6 | 80 | SE | 9.4 | 4.16 | ..... | 2k | 5k | SE | SE | 0.039 | 1.00 | Cloudy..... | Leonardo de Tejeda, Ch'f Eng'r. |

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Madrid, Murcia and Santiago the barometer is reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.6 feet; Madrid, 655.5 m, or 2,150.5ft.

## SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. L w'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.16 | 766.1 | 30.20 | 767.1 | 34.2 | 1.2 | ..... | S | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.21 | 767.3 | 30.26 | 768.6 | 42.8 | 6.0 | 80 | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.16 | 766.1 | 30.21 | 767.4 | 43.2 | 6.2 | 83 | S | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 30.00 | 762.1 | 30.18 | 766.6 | 42.1 | 5.6 | 27 | NNE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 30.06 | 761.9 | 30.06 | 763.4 | 42.8 | 6.0 | 39 | ESE | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.10 | 764.6 | 30.18 | 766.5 | 45.7 | 7.6 | 30 | NE | 7.8 | 3.5 | ..... | ..... | 9 | S | NE | 0 | 0 | ..... | Nils Ekholm. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.65 | 727.7 | 30.10 | 764.4 | 48.4 | 9.1 | 47 | N | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0 | 0 | Cloudy..... | The Observatory. |
| Zurich | 28.46 | 722.8 | 30.13 | 765.3 | 43.7 | 6.5 | 76 | NW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.197 | 5.0 | Cloudy..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +3.2 mm.; Thermometer,—5.0 Cent.; Relative Humidity, —10 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,338.6 feet, and that of Zurich 470 m., or 1,542.0 ft.

## TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.80 | 757.0 | 82.2 | 27.9 | 20 | WSW | 7 | 3.0 | ..... | 4 | ..... | SW | | 0 | 0 | ..... | The Observatory. |
| Fao, Persian Gulf | ..... | ..... | 30.12 | 765.0 | 86.0 | 30.0 | ..... | SE | ..... | ..... | 4 | 0 | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.89 | 759.3 | 66.0 | 18.9 | ..... | S | ..... | ..... | 3 | 2 | ..... | ..... | ..... | 1.60 | 38. | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut (Syria) Lee Obs'y | 29.72 | 754.9 | 29.83 | 757.7 | 64.2 | 17.9 | 84 | N | ..... | ..... | 1 | 0 | ..... | ..... | ..... | 0 | 0 | Blue sky | Prof. C. V. A. Van Dyck |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

## CANADIAN SERIES.

Furnished by the co-operation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.96 | 761.0 | 30.03 | 762.8 | 39.8 | 4.3 | 98 | N | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Overcast..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.56 | 750.8 | 29.89 | 759.2 | 50 | 10.0 | ..... | SE | 1 | 0.4 | ..... | 0 | 2s | ..... | SW | 0 | 0 | Clear..... | W. R. Bigg. |
| *Chatham, N. B | 29.99 | 761.7 | 30.06 | 763.5 | 43 | 6.1 | 99 | NE | 2 | 0.9 | ..... | ..... | 10n | ..... | NE | 0.01 | 0.3 | Light rain... | G. A. Blair. |
| Charlottetown, P. E. Island | 30.01 | 762.2 | 30.05 | 763.3 | 52 | 11.1 | 95 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0.40 | 10.16 | Foggy ..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.62 | 752.3 | 29.81 | 757.2 | 49.3 | 9.6 | 66 | E | ..... | ..... | 1 | 0 | 8s | ..... | ..... | 0 | 0 | Cloudy..... | James Smith, M. A. |
| Dalhousie, N. B | 29.80 | 759 2 | 30.06 | 763.5 | 42 | 5.6 | ..... | SE | ..... | ..... | 1 | 0 | 10n | ..... | ..... | 0 | 0 | Foggy..... | H. A. Johnson. |
| Esquimault, B. C | 29.88 | 758.9 | 29.93 | 760.2 | 46.3 | 7.9 | 92 | Calm | 0 | 0 | ..... | 7cs | 0 | ..... | ..... | 0 | 0 | Cloudy..... | W. H. Bevis. |
| *Father Point, Quebec | 29.99 | 761.7 | 30.01 | 762.2 | 40 | 4.4 | 88 | NE | 18 | 8.0 | ..... | 8k | 2s | E | E | 0 | 0 | Cloudy..... | J. McWilliams. |
| Fredericton, N. B | 29.93 | 760.2 | 29.99 | 761.7 | 47.0 | 8.3 | 97 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 1.16 | 29.50 | Raining ..... | Prof. Harrison. |
| *Fort Garry, Manitoba | 29.40 | 746.7 | 30.25 | 768.3 | 38 | 3.3 | 81 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | James Stewart. |
| Granton, Ontario | 28.88 | 732.3 | 29.96 | 761.0 | 36 | 2.2 | ..... | N | ..... | ..... | 2 | ..... | 10n | .. ..... | ..... | Inap. | Inap. | Overcast..... | James Grant. |
| *Halifax, N. S | 29.92 | 760.0 | 30.05 | 763.3 | 45 | 7.2 | 97 | SE | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy ..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.54 | 750.3 | 29.92 | 760.0 | 44.7 | 7.1 | 81 | W | ..... | ..... | 3 | 10cs | 0 | W | ..... | 0.03 | 0.8 | Cloudy . ... | Geo. Dickson, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | E. Weedon. |
| *Kingston, Ontario | 29.50 | 749.3 | 29.83 | 757.7 | 45 | 7.2 | 77 | W | 2 | 0.9 | ..... | 6ck | 0 | Calm | ..... | 0 | 0 | Fair ..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.06 | 763.5 | 30.09 | 764.3 | 42.2 | 5.7 | 95 | Calm | 0 | 0 | ..... | 7k | 0 | SW | ..... | 0 | 0 | Foggy..... | C. H. Rigby. |
| Moose Factory, Ontario | 30.18 | 766.6 | 30.21 | 767.8 | 26.3 | — 3.2 | 88 | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy..... | J. R. Nason. |
| *Montreal, Quebec | 29.62 | 752.3 | 29.82 | 757.4 | 48 | 8.9 | 70 | NE | 12 | 5.4 | ..... | 2ck | 0 | S | ..... | 0 | 0 | Fair ..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.18 | 741.2 | 29.89 | 759.2 | 38 | 3.3 | 100 | W | 3 | 1.3 | ..... | ..... | Fog | ..... | W | 0.26 | 6.6 | Foggy ..... | Rev. R. Mosly. |
| Peterboro, Ontario | 29.08 | 738.6 | 29.82 | 757.4 | 52.2 | 11.2 | 83 | SW | ..... | ..... | 1 | ..... | 8ks | ..... | ..... | 0 | 0 | Cloudy..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.21 | 741.9 | 29.92 | 760.0 | 40 | 4.4 | 93 | NW | 9 | 4.0 | ..... | 5k | 0 | NW | ..... | 0.02 | 0.5 | Fair..... | H. Morgan. |
| Port Hastings, N. S | 29.99 | 761.7 | 30.04 | 763.0 | 47.5 | 8.6 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine..... | Peter Grant. |
| Port Stanley, Ontario | 29.29 | 744.0 | 29.96 | 760.7 | 39 | 3.9 | 90 | W | 25 | 11.2 | ..... | ..... | 10ks | NW | ..... | 0.05 | 1.3 | Cloudy..... | M. Payne. |
| *Quebec, Quebec | 29.62 | 752.3 | 29.94 | 760.5 | 41 | 5.0 | 74 | NE | ..... | ..... | 5 | 2c | 2s | NE | NE | 0 | 0 | Fair ..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.43 | 747.5 | 29.89 | 759.2 | 44 | 6.7 | 92 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | SW | 0.49 | 12.4 | Light rain... | W. H. McIntyre. |
| St. Andrews, N. B | 29.88 | 758.9 | 29.93 | 760.2 | 45 | 7.2 | 94 | SE | ..... | ..... | 2 | ..... | Fog | ..... | ..... | 0.38 | 9.7 | Rain & fog... | Dr. Gove. |
| St. John, N. B | 29.83 | 757.7 | 30.00 | 762.0 | 50 | 10.0 | 93 | E | 8 | 3.6 | ..... | ..... | 10n | ..... | ..... | 0.72 | 18.3 | Light rain... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.22 | 742.2 | 29.96 | 761.0 | 34 | 1.1 | 96 | NW | 20 | 8.9 | ..... | ..... | 10ks | ..... | N | 0.28 | 7.1 | Heavy snow | K. Stewart. |
| Stayner, Ontario | 29.10 | 739.1 | 29.90 | 759.4 | 36 | 2.2 | 96 | NW | 13 | 5.8 | ..... | ..... | 10n | ..... | NW | 0.07 | 1.8 | Threatening | R. J. Cole. |
| Stratford, Ontario | 28.62 | 726.9 | 29.95 | 760.7 | 35.8 | 2.1 | 96 | NW | 13.5 | 6.0 | ..... | ..... | 10s | ..... | ..... | 0.03 | 0.8 | Overcast..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.05 | 763.3 | 30.09 | 764.3 | 59 | 15.0 | 80 | W | 3 | 1.3 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy..... | T. C. Hill. |
| *Toronto, Ontario | 29.48 | 748.8 | 29.87 | 758.7 | 46 | 7.8 | 80 | W | 17 | 7.6 | ..... | ..... | 10ks | ..... | W | 0.02 | 0.5 | Cloudy..... | Magnetic Observatory. |
| Windsor, N. S | 29.94 | 760.5 | 30.00 | 762.0 | 51.0 | 10.6 | 93 | E | 3 | 1.3 | ..... | 0 | 10n;k | ..... | ..... | 0.03 | 0.8 | Overcast..... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 53.0 | 11.7 | 80 | E | ..... | ..... | ..... | 5k | 5s | ..... | ..... | 0 | 0 | Fair..... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews the velocity of the wind is estimated. The elevation of Granton is 1,016 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the co-operation of Byt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.60 | 751.8 | 29.83 | 757.7 | 52 | 11.1 | 60 | N | 3 | 1.3 | ..... | 1cs | 0 | S | ..... | 0 | 0 | Clear | |
| Alpena, Michigan | 29.37 | 746.0 | 30.04 | 763.0 | 34 | 1.1 | 79 | N | 18 | 8 0 | ..... | ..... | 8s | ..... | N | 0.64 | 16.3 | Cloudy | |
| Atlanta, Georgia | 28.86 | 733.0 | 29.98 | 761.5 | 61 | 16.1 | 45 | NW | 9 | 4.0 | ..... | 8c | Haze | NW | Calm | 0 | 0 | Fair | |
| Atlantic City, New Jersey | 29.84 | 757.9 | 29.86 | 758.4 | 60 | 15.6 | 77 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| Augusta, Georgia | 29.81 | 757.2 | 29.98 | 761.5 | 63 | 17.2 | 72 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 29.82 | 757.4 | 29.87 | 758.7 | 60 | 15.6 | 55 | W | 7 | 3.1 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Barnegat, New Jersey | 29.79 | 756.7 | 29.81 | 757.2 | 60 | 15.6 | 83 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 28.30 | 718.8 | 30.16 | 766.1 | 45 | 7.2 | 60 | E | 8 | 3.6 | ..... | 8k | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Boerne, Texas | 28.50 | 723.9 | 29.78 | 756.4 | 65 | 18.3 | 80 | SW | 5 | 2.2 | ..... | 8k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.17 | 690.1 | 30.13 | 765.3 | 50 | 10.0 | 58 | NW | 4 | 1.8 | ..... | 2ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.64 | 752.8 | 29.79 | 756.7 | 48 | 8.9 | 100 | E | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.87 | 22.1 | Light rain | |
| Brackettville, Texas | 28.79 | 731.3 | 29.79 | 756.7 | 69 | 20.6 | 80 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 29.19 | 741.4 | 30.21 | 767.3 | 42 | 5.6 | 66 | E | 7 | 3.1 | ..... | ..... | 10ks | ..... | NW | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.94 | 760.5 | 29.99 | 761.7 | 76 | 24.4 | 73 | SE | 8 | 3.6 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.16 | 740.7 | 29.86 | 758.4 | 42 | 5.6 | 74 | SW | 6 | 2.7 | ..... | 5cs | Haze | SW | Calm | 0 | 0 | Fair | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Burlington, Vermont | 29.54 | 750.3 | 29.83 | 757.7 | 46 | 7.8 | 69 | N | 4 | 1.8 | ..... | 1c | Haze | Calm | Calm | 0 | 0 | Clear | |
| Cairo, Illinois | 29.69 | 754.1 | 30.07 | 763.8 | 61 | 16.1 | 55 | N | 6 | 2.7 | ..... | 0 | 5s | ..... | N | 0 | 0 | Fair | |
| Camp Apache, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Camp Grant, Arizona | 25.22 | 640 6 | 30.02 | 762.5 | 60 | 15.6 | 24 | N | 4 | 1.8 | ..... | 2k | 0 | NW | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | ..... | ..... | ..... | ..... | 55 | 12.8 | 50 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.39 | 695.7 | 29.96 | 761.0 | 34 | 1.1 | 70 | W | 4 | 1.8 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 29.95 | 760 7 | 29.95 | 760.7 | 63 | 17.2 | 83 | NW | 6 | 2.7 | ..... | 0 | 5s | ..... | NW | 0.50 | 12.7 | Fair | |
| Cape Henry, Virginia | 29.88 | 758.9 | 29.90 | 759.4 | 59 | 15.0 | 88 | SW | 10 | 4.5 | ..... | ..... | 10s | ..... | SW | 0.31 | 7.9 | Cloudy | |
| Cape Lookout, N. Carolina | 29.92 | 760.0 | 29.94 | 760.5 | 64 | 17.8 | 89 | W | 4 | 1.8 | ..... | ..... | 8ks | ..... | SW | 1.14 | 29.0 | Cloudy | |
| Cape May, New Jersey | 29.79 | 756.7 | 29.82 | 757.4 | 54 | 12.2 | 87 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Castroville, Texas | 29.18 | 741.2 | 29.86 | 758.4 | 68 | 20.0 | 79 | S | 6 | 2.7 | ..... | 0 | 2ks | ..... | S | 0 | 0 | Fair | |
| Charleston, South Carolina | 29.89 | 759.2 | 29.95 | 760.7 | 69 | 20.6 | 80 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 24.09 | 611.9 | 30.03 | 762.8 | 44 | 6.7 | 68 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Chicago, Illinois | 29.45 | 748.0 | 30.16 | 766.1 | 42 | 5.6 | 58 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cincinnati, Ohio | 29.40 | 746.7 | 30.05 | 763.3 | 54 | 12.2 | 52 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cleveland, Ohio | 29.27 | 743.4 | 30.00 | 762.0 | 42 | 5.6 | 83 | N | 8 | 3.6 | ..... | ..... | 10ks | ..... | N | 0.04 | 1.0 | Cloudy | |
| Coleman City, Texas | 28.08 | 713.2 | 29.69 | 754.1 | 64 | 17.8 | 78 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Columbus, Ohio | 29.16 | 740.7 | 30.00 | 762.0 | 50 | 10.0 | 58 | NW | 8 | 3.6 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Concho, Texas | 27.93 | 709.4 | 29.54 | 750.3 | 72 | 22.2 | 67 | SW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.49 | 749.0 | 29.95 | 760.7 | 65 | 18.3 | 94 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.54 | 750.3 | 30.10 | 766.8 | 45 | 7.2 | 76 | SE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.41 | 645.4 | ..... | ..... | 49 | 9.4 | 85 | Calm | 0 | 0 | ..... | 10k | 0 | NE | ..... | 0 | 0 | Cloudy | |
| Decatur, Texas | 28.74 | 730.0 | 29.87 | 758.7 | 65 | 18.3 | 58 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Denison, Texas | 29.16 | 740.7 | 29.93 | 760.2 | 65 | 18.3 | 89 | SE | 8 | 1.3 | ..... | 5cs | 5s | SE | Calm | Inap. | Inap. | Cloudy | |
| Denver, Colorado | 24.82 | 630.4 | 30.04 | 763.0 | 47 | 8.3 | 77 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Des Moines, Iowa | 29.23 | 742.4 | 30.13 | 765.3 | 46 | 7.8 | 69 | E | 4 | 1.8 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Fair | |
| Detroit, Michigan | 29.32 | 744.7 | 30.00 | 762.0 | 43 | 6.1 | 75 | NW | 10 | 4.5 | ..... | 5k | 0 | NW | ..... | Inap. | Inap. | Fair | |
| Dodge City, Kansas | 27.22 | 691.4 | 29.41 | 747.0 | 63 | 17.2 | 89 | SE | 20 | 8.9 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 29.39 | 746.5 | 30.10 | 764.5 | 42 | 5.6 | 50 | E | 3 | 1.3 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Duluth, Minnesota | 29.53 | 750.0 | 30.23 | 767.8 | 41 | 5.0 | 74 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Eagle Pass, Texa | 29.12 | 739.6 | 29.82 | 757.4 | 69 | 20.6 | 85 | SE | 6 | 2.7 | ..... | 1c | 0 | W | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.88 | 758.9 | 29.95 | 760.7 | 44 | 6.7 | 100 | E | 5 | 2.2 | ..... | ..... | 10n;fog | ..... | E | 0.33 | 8.4 | Light rain | |
| Edinburg, Texas | ..... | ..... | ..... | ..... | 69 | 20.6 | 90 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| El Paso, Texas | 26.16 | 664.4 | ..... | ..... | 65 | 18.3 | 14 | W | 8 | 3.6 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| Erie, Pennsylvania | 29.23 | 742.4 | 29.95 | 760.7 | 42 | 5.6 | 83 | W | 9 | 4.0 | ..... | 0 | 8s | ..... | W | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.51 | 749.5 | 30.18 | 766.6 | 36 | 2.2 | 61 | N | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.38 | 720.8 | 29.98 | 761.5 | 65 | 18.3 | 26 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Buford, Dakota | 28.07 | 713.0 | ..... | ..... | 42 | 5.6 | 74 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.48 | 647.2 | 29.54 | 750.3 | 64 | 12.2 | 25 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.17 | 639.3 | 30.13 | 765.3 | 69 | 20.6 | 22 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.37 | 746.0 | 29.89 | 759.2 | 66 | 18.9 | 74 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | W | Inap. | Inap. | Cloudy | |
| Fort Griffin, Texas | 28.54 | 724.9 | 29.77 | 756.1 | 65 | 18.3 | 84 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Keogh, Montana | 27.48 | 698.0 | ..... | ..... | 54 | 12.2 | 73 | N | 2 | 0.9 | ..... | 5k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort McKavett, Texas | 27.62 | 701.5 | 29.46 | 748.3 | 68 | 20.6 | 70 | S | 4 | 1.8 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort St. Michael, Alaska | 29.81 | 757.2 | 29.85 | 758.2 | 16 | — 8.9 | 100 | NE | 5 | 2.2 | ..... | ..... | 10k | ..... | Calm | Inap. | Inap. | Cloudy | |
| Fort Sill, Indian Territory | 28.63 | 727.2 | 29.69 | 754.1 | 66 | 18.9 | 84 | SE | 18 | 8.0 | ..... | 10ck | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Fort Stevenson, Dakota | ..... | ..... | ..... | ..... | 45 | 7.2 | 68 | E | 4 | 1.8 | ..... | 1c | 0 | Calm | ..... | Inap. | Inap. | Fair | |
| Fredericksburg, Texas | 28.32 | 720.3 | 29.89 | 759.2 | 70 | 21.1 | 53 | S | 5 | 2.2 | ..... | 5k | 0 | S | ..... | 0 | 0 | Fair | |
| Galveston, Texas | 30.00 | 762.0 | 30.04 | 763.0 | 73 | 22.8 | 81 | S | 6 | 2.7 | ..... | 5k | 2s | SW | SE | 0 | 0 | Cloudy | |
| Graham, Texas | 28.78 | 731.0 | 29.79 | 756.7 | 68 | 20.0 | 90 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.46 | 748.3 | 30.12 | 765.0 | 41 | 5.0 | 65 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.28 | 743 7 | 30.06 | 763.5 | 48 | 8.9 | 63 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianola, Texas | 30.01 | 762.2 | 30.03 | 762.8 | 73 | 22.8 | 76 | S | 20 | 8.9 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 28.87 | 733.3 | 29.96 | 761.0 | 75 | 23.9 | 56 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.95 | 760.7 | 29.97 | 761.2 | 71 | 21.7 | 80 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.40 | 10.2 | Clear | |
| Keokuk, Iowa | 29.48 | 748.8 | 30.10 | 764.5 | 45 | 7.2 | 76 | E | 12 | 5.4 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Key West, Florida | 29.95 | 760.7 | 29.99 | 761.7 | 75 | 23.9 | 77 | N | 7 | 3.1 | ..... | 5k | 0 | N | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 29.88 | 758.9 | 29.91 | 759.7 | 61 | 16.1 | 94 | W | 12 | 5.4 | ..... | 0 | 8ks | ..... | NW | 0 | 0 | Fair | |
| Knoxville, Tennessee | 29.04 | 737.6 | 30.04 | 763 0 | 54.5 | 12.5 | 74 | NW | 2 | 0.9 | ..... | Haze | Fog | ..... | ..... | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 29.45 | 748.0 | 30.21 | 767.3 | 41 | 5.0 | 66 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.02 | 660.9 | 30.17 | 766.3 | 55 | 12.8 | 56 | Calm | 0 | 0 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Laredo, Texas | 29.50 | 749.3 | 29.77 | 756.1 | 75 | 23.9 | 68 | S | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.19 | 741.4 | 30.03 | 762.8 | 55 | 12.8 | 62 | NE | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.02 | 0.5 | Light rain | |
| Los Angeles, California | 29.59 | 751.6 | 29.94 | 760.5 | 48.0 | 8.9 | 85 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentuckey | 29.48 | 748.8 | 30.03 | 762.8 | 57 | 13.9 | 47 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.24 | 742.7 | 29.90 | 759.4 | 62 | 16.7 | 66 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Madison, Wisconsin | 29.18 | 741.2 | 30.19 | 766.8 | 42 | 5.6 | 74 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.46 | 748.3 | 30.19 | 766.8 | 35 | 1.7 | 70 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Mason, Texas | 28.27 | 718.0 | 29.99 | 761.7 | 63 | 17.2 | 89 | SE | 2 | 0.9 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.73 | 755.1 | 30.04 | 763.0 | 67 | 19.4 | 84 | Calm | 0 | 0 | ..... | 5cs | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Milwaukee, Wisconsin | 29.41 | 747.0 | 30.15 | 765.8 | 42 | 5.6 | 50 | NE | 12 | 5.4 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Mobile, Alabama | 30.02 | 762.5 | 30.06 | 763.5 | 61.5 | 16.4 | 60 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.83 | 757.7 | 30.06 | 763.5 | 63 | 17.2 | 67 | NW | 2 | 0.9 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.85 | 732.8 | 29.87 | 758.7 | 59 | 15.0 | 59 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mt. Washington, N. H | 23.65 | 600.7 | 30.01 | 762.2 | 38 | 3.3 | 90 | SE | 36 | 16.1 | ..... | ..... | 10n | ..... | SE | 0.16 | 4.1 | Light rain | |
| Nashville, Tennessee | 29.52 | 749.8 | 30.05 | 763.3 | 61 | 16.1 | 61 | Calm | 0 | 0 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| New Haven, Connecticut | 29.66 | 753.4 | 29.78 | 756.4 | 56 | 13.3 | 94 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.08 | 2.0 | Cloudy | |
| New London, Connecticut | 29.70 | 754.4 | 29.75 | 755.6 | 57 | 13.9 | 94 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | N | 0.40 | 10.2 | Cloudy | |
| New Orleans, Louisiana | 29.99 | 761.7 | 30.05 | 763.3 | 71 | 21.7 | 62 | NE | 6 | 2.7 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.66 | 753.4 | 29.71 | 754.6 | 55 | 12.8 | 100 | N | 5 | 2.2 | ..... | ..... | 10n | ..... | N | 0.58 | 14.7 | Light rain | |
| New York, New York | 29.64 | 752.8 | 29.81 | 757.2 | 60 | 15.6 | 66 | NW | 4 | 1.8 | ..... | 2ck | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Norfolk, Virginia | 29.85 | 758.2 | 29.91 | 759.7 | 59 | 15.0 | 82 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North Platte, Nebraska | 27.07 | 687.6 | 29.60 | 751.8 | 52 | 11.1 | 93 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | NE | 1.47 | 37.3 | Cloudy | |
| Olympia, Washington Ter. | 29.95 | 760.7 | 29.98 | 761.6 | 47.2 | 8.4 | 85 | N | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Omaha, Nebraska | 28.93 | 734.8 | 30.03 | 762.8 | 51 | 10.6 | 59 | E | 1 | 0.4 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Oswego, New York | 29.54 | 750.3 | 29.86 | 758.4 | 48 | 8.9 | 63 | W | 1 | 0.4 | ..... | 10c | 0 | W | ..... | 0 | 0 | Cloudy | |
| Pembina, Dakota | 29.35 | 745.5 | 30.20 | 767.1 | 37 | 2.8 | 90 | Calm | 0 | 0 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Philadelphia, Pa | 29.78 | 756.4 | 29.83 | 757.7 | 60 | 15.6 | 65 | NW | 3 | 1.3 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Dense haze. | |
| Phœnix, Arizona | 28.69 | 728.7 | 30.43 | 772.9 | 68 | 20.0 | 26 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.84 | 453.1 | 30.05 | 763.3 | 20 | — 6.7 | 27 | NW | 32 | 14.3 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Ploche, Nevada | 24.06 | 611.1 | 29.83 | 757.7 | 50 | 10.0 | 14 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.11 | 739.4 | 29.91 | 759.7 | 52 | 11.1 | 66 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Port Huron, Michigan | 29.31 | 744.5 | 29.99 | 761.7 | 39 | 3.9 | 82 | N | 13 | 5.8 | ..... | ..... | 10ks | ..... | N | Inap. | Inap. | Cloudy | |
| Portland, Maine | 29.80 | 756.9 | 29.86 | 758.4 | 50 | 10.0 | 93 | E | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.77 | 19.6 | Light rain | |
| Portland, Oregon | 29.98 | 761.5 | 30.08 | 764.0 | 51.3 | 10.7 | 86 | S | 1 | 0.4 | ..... | 0 | 9n;ks | ..... | S | Inap. | Inap. | Light rain | |
| Prescott, Arizona | 24.72 | 627.9 | 30.08 | 764.0 | 49 | 8.4 | 37 | W | 2 | 0.9 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Pilot Point, Texas | 29.01 | 736.8 | 29.81 | 757.2 | 62 | 16.7 | 88 | N | 12 | 5.4 | ..... | 5k | 5s | NW | N | 0 | 0 | Cloudy | |
| Punta Rassa, Florida | 29.99 | 761.7 | 30.01 | 762.2 | 71 | 21.7 | 80 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Red Bluff, California | 29.66 | 753.4 | 30.02 | 762.5 | 57.5 | 14.2 | 79 | S | 2 | 0.9 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |
| Rio Grande City, Texas | 29.77 | 756.1 | 29.98 | 761.5 | 70 | 21.1 | 86 | SE | ..... | ..... | 2 | 0 | 2ks | ..... | SE | 0 | 0 | Clear | |
| Rochester, New York | 29.23 | 742.4 | 29.84 | 757.9 | 48 | 8.9 | 71 | W | 4 | 1.8 | ..... | 9k | Haze | W | ..... | 0 | 0 | Cloudy | |
| Roseburg, Oregon | 29.48 | 748.8 | 30.06 | 763.5 | 47.0 | 8.3 | 96 | Calm | 0 | 0 | ..... | 5cs | 0 | S | ..... | 0 | 0 | Fair | |
| Sacramento, California | 29.95 | 760.7 | 30.04 | 763.0 | 54 | 12.2 | 87 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.51 | 749.5 | 30.09 | 764.3 | 50 | 10.0 | 58 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| St. Marks, Florida | 30.00 | 762.2 | 30.01 | 762.2 | 68 | 20.1 | 65 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.32 | 744.7 | 30.17 | 766.3 | 40 | 4.4 | 73 | SW | 2 | 0.9 | ..... | 8ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Salt Lake City, Utah | 25.99 | 662.5 | 30.02 | 762.5 | 51 | 10.6 | 53 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.27 | 743.4 | 29.84 | 757.9 | 68 | 20.0 | 90 | S | 2 | 0.9 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| San Diego, California | 29.90 | 759.4 | 29.97 | 761.2 | 55 | 12.8 | 93 | NW | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.34 | 745.2 | 30.02 | 762.5 | 45 | 7.2 | 84 | N | 17 | 7.6 | ..... | ..... | 10ks | ..... | NW | 0.05 | 1.3 | Cloudy | |
| Sandy Hook, New Jersey | 29.77 | 756.1 | 29.80 | 757.0 | 68 | 14.4 | 88 | W | 9 | 4.0 | ..... | ..... | Fog | ..... | W | 0.05 | 1.3 | Foggy | |
| San Francisco, California | 30.02 | 762.5 | 30.09 | 764.3 | 52 | 11.1 | 96 | W | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Dense fog | |
| Santa Fé, New Mexico | 23.29 | 591.6 | 29.83 | 757.7 | 47 | 8.3 | 28 | Calm | 0 | 0 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.87 | 758.7 | 29.96 | 761.0 | 70 | 21.1 | 70 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.25 | 6.3 | Clear | |
| Shreveport, Louisiana | 29.79 | 756.7 | 30.00 | 762.0 | 64 | 17.8 | 78 | E | 3 | 1.3 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Silver City, New Mexico | 24.32 | 617.7 | 30.40 | 772.1 | 54 | 12.2 | 20 | NW | 1 | 0.4 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Smithville, North Carolina | 29.95 | 760.7 | 29.98 | 761.5 | 64 | 17.8 | 100 | NE | 6 | 2.7 | ..... | ..... | Fog | ..... | Calm | 0.06 | 1.5 | Foggy | |
| Springfield, Massachusetts | 29.67 | 753.6 | 29.79 | 756.7 | 53 | 11.7 | 93 | N | 3 | 1.3 | ..... | ..... | 10n | ..... | N | 0.14 | 3.6 | Light rain | |
| Stockton, Texas | 26.84 | 681.7 | 29.84 | 757.9 | 71 | 21.7 | 45 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.69 | 754.1 | 29.75 | 755.6 | 48 | 8.9 | 100 | NE | 12 | 5.4 | ..... | ..... | 10n | ..... | NE | 0.21 | 5.3 | Heavy rain | |
| Toledo, Ohio | 29.33 | 745.0 | 30.02 | 762.5 | 45 | 7.2 | 61 | N | 8 | 3.6 | ..... | ..... | 10ks | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Tucson, Arizona | 27.46 | 697.5 | 30.01 | 762.2 | 60 | 15.6 | 34 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.70 | 754.4 | 30.26 | 767.1 | 50.0 | 10.0 | 79 | SE | 4 | 1.8 | ..... | 0 | 2ks | ..... | W | 0 | 0 | Fair | |
| Unalashka, Aleutian Islands | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Uvalde, Texas | 29.05 | 737.9 | 29.85 | 758.2 | 68 | 20.0 | 74 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.85 | 758.2 | 30.11 | 764.8 | 62 | 16.7 | 72 | S | 1 | 0.4 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Virginia City, Montana | 24.36 | 618.7 | 29.84 | 757.9 | 40 | 4.4 | 56 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.40 | 10.2 | Clear | |
| Visalia, California | 29.65 | 753.1 | 30.02 | 762.5 | 57.8 | 14.1 | 65 | NW | 2 | 0.9 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 29.76 | 755.9 | 29.87 | 758.7 | 57 | 13.9 | 69 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 59 | 15.0 | 48 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 29.86 | 758.4 | 29.94 | 760.5 | 62 | 16.7 | 83 | SE | 1 | 0.4 | ..... | 8k | 0 | NW | ..... | 1.39 | 35.3 | Fair | |
| Winnemucca, Nevada | 25.68 | 652.3 | 30.04 | 763.0 | 39 | 3.9 | 46 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass | 29.66 | 753.4 | 29.70 | 754.4 | 52 | 11.1 | 93 | SE | 14 | 6.3 | ..... | ..... | 10n | ..... | ..... | 0.84 | 21.3 | Light rain | |
| Yankton, Dakota | 28.84 | 732.5 | 30.10 | 766.1 | 43 | 6.1 | 67 | E | 6 | 2.7 | ..... | 10c | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.64 | 752.8 | 29.80 | 756.9 | 69 | 20.6 | 23 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fayetteville, Ark | 28.41 | 721.6 | 29.78 | 756.4 | 61 | 16.1 | 72 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. B. Gordon. |
| Havana, Cuba, W. I | 29.92 | 760.0 | 29.97 | 761.2 | 76 | 24.4 | 69 | Calm | 0 | 0 | ..... | 4k | 0 | NE | ..... | 0 | 0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Medellin, Colombia, S. A | 25.25 | 641.3 | ..... | ..... | 64.0 | 17.8 | 92 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | 0.96 | 24.4 | ..... | Thomas Herran. |
| Navassa, W. I | 29.85 | 758.2 | 29.93 | 760.2 | 79 | 26.1 | ..... | E | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.05 | 1.3 | Cloudy | W. H. W. Jones. |
| Paramaribo, D. Guiana, S. A | 29.99 | 761.7 | 29.99 | 761.7 | 78 | 25.6 | 91 | E | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0.830 | 21.08 | Raining | O. J. Hering. |
| Santiago de Cuba, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Mason. |
| St. Thomas, W. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. O. Gellich. |
| York Factory, B. A | 30.18 | 766.6 | 30.24 | 768.1 | 31.0 | — 0.6 | 95 | SE | 9 | 4.0 | ..... | 2c | 0 | SE | ..... | 0 | 0 | Fair | J. Fortescue & W. Wood. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, and Paramaribo. The elevation of the barometer at Atlanta is 1,131.3 feet or 344.8 meters; Bismarck 1,704.3 feet, or 519.5 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,877 (?) ft., or 876.9 (?) m.; Brackettville, 1,026(?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,470.0 (?) m.; Campo, 2,500 (?) ft., or 762.0 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,269 ft., or 1,606.0 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayetteville, 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.4 (?) m.; Fredericksburg, 1,614' (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915 6 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,160. 7 ft.,or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,700 (?) ft., or 1,737.3 (?) m.; Salt Lake City, 4,362.2 ft.,' or 1,329.6 m.. Santa Fé, 6,851 (?) ft., or 2,088.1 (?) m.; Silver City, 6,396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,542 (?) ft., or 774.8 (?) m.; Virgin ia City, 5,480 (?). ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9(?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 388.6 m. The following constants are added in correcting the barometric observations for altitude: Bismarck, 1.855 inches; Boise City, 2.96 in.; Camp Grant, 4.800 in.; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.45 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Up'er. From— | Clouds. Direction. Low'r. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.04 | 763.0 | 57 | 13.9 | 54 | 12.2 | 93 | WSW | 18 | 8.0 | .... | ..... | 10 | ..... | WSW | 0 | 0 | ..... | ..... | Overcast | |
| Navy Yard, Pensacola, Fla. | 30.15 | 765.8 | 65 | 18.3 | 65 | 18.3 | 94 | NE | 3 | 1.3 | .... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Navy Yard, Portsmouth, N.H. | 29.73 | 755.1 | 69 | 20.6 | 49 | 9.4 | 93 | NE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.6 | 15. | ..... | ..... | Rainy | |
| Naval Hospital, Yokohama, Japan | 30.09‡ | 764.3‡ | ..... | ..... | 62 | 16.7 | 83 | SW | ..... | ..... | 2 | ..... | 2c | ..... | SW | 0 | 0 | ..... | ..... | Fair | |
| Adams, Panama * | 29.96 | 761.0 | 82 | 27.8 | 80 | 26.7 | 95 | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy | |
| Alaska, N. 56° 31′, W. 132° 24′ | 29.63‡ | 752.6‡ | ..... | ..... | 44 | 6.7 | 84 | ENE | ..... | .... | 3 | ..... | 10 | ..... | ..... | 0.33 | 8.4 | Smooth | ..... | Drizzling | |
| Alliance, [mean] Off Island of Favignana, Mediterra- | 29.85‡ | 758.2‡ | ..... | ..... | 60 | 15.6 | 32 | WSW | ..... | ..... | 3 | ..... | 7 | ..... | W | ..... | ..... | ..... | ..... | Squally | |
| Arbuelot, Hong-Kong, China. * | 29.85‡ | 758.2‡ | ..... | ..... | 75 | 23.9 | 90 | E | ..... | ..... | 1 | ..... | 5 | ..... | Calm | ..... | ..... | Smooth | ..... | Fair | |
| Canonicus, New Orleans, La. * | 30.01 | 763.0 | 48 | 8.9 | 65 | 18.3 | 94 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Colorado, New York, N. Y. | 29.85 | 758.2 | 62 | 16.7 | 60 | 15.6 | 71 | NNW | 1 | 0.4 | ..... | ..... | 5 | ..... | N | 0.03 | 0.8 | ..... | ..... | Foggy | |
| Constitution N. 23° 21′, W. 39° 36 | 30.13‡ | 765.3‡ | ..... | ..... | 75 | 23.9 | 86 | ENE | ..... | ..... | 1 | ..... | 1 | ..... | Calm | ..... | ..... | Smooth | NNW | Clear | |
| Despatch, Genoa, Italy | 29.83‡ | 757.7‡ | ..... | ..... | 65 | 18.3 | 78 | SE | ..... | ..... | 3 | ..... | 5 | ..... | S | ..... | ..... | Smooth | ..... | Fair | |
| Franklin, Norfolk, Va. * | 30.02 | 762 5 | 65 | 18.3 | 58 | 14.4 | 94 | SW | 3.6 | 1.6 | ..... | ..... | 10 | ..... | SW | 0 | 0 | ..... | ..... | Clearing | |
| Gettysburg, Genoa, Italy * | 29.78‡ | 756.4‡ | ..... | ..... | 63 | 17.2 | 47 | NNE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Smooth | ..... | Cloudy | |
| Hartford, Colonia, Uruguay * | 29.95 | 760.7 | 64 | 17.8 | 59 | 15.0 | 82 | S | ..... | ..... | 3 | ..... | 5 | ..... | S | 0 | 0 | Smooth | ..... | Fair | |
| Michigan, Erie, Pa. † | 29.96‡ | 761.0‡ | ..... | ..... | 41.5 | 5.3 | 91 | WSW | ..... | ..... | 4 | ..... | 8 | ..... | WSW | ..... | ..... | ..... | ..... | Cloudy | |
| Monocacy, Shanghai, China. * | 29.86‡ | 758.4‡ | ..... | ..... | 60 | 15.6 | 94 | ESE | ..... | ..... | 1–2 | ..... | 10 | ..... | ESE | ..... | ..... | ..... | ..... | Cloudy | |
| Monongahela Yokohama, Japan * | 30.11‡ | 764.8‡ | ..... | ..... | 64 | 17.8 | 89 | S | ..... | ..... | 1 | ..... | ks | ..... | ..... | 0 | 0 | ..... | ..... | Hazy | |
| New Hampshire, Port Royal, S. C. * | 30.04 | 763.0 | 72 | 22.2 | 70 | 21.1 | 85 | SW | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Onward, Callao, Peru. †* | 30.06 | 763.5 | ..... | ..... | 61 | 16.1 | 100 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | SE | ..... | ..... | Long | W | Foggy | |
| Palos, Shanghai, China * | 29.96 | 761.0 | 67 | 19.4 | 57 | 13.9 | 100 | ESE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Misty | |
| Passaic, Washington, D. C. | ..... | ..... | ..... | ..... | 58 | 14.4 | 100 | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Pensacola, Callao, Peru | 29.96‡ | 761.0‡ | ..... | ..... | 63 | 17.2 | 89 | SE | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | ..... | Foggy | |
| Plymouth, Portsmouth, N. H | 29.80‡ | 756.9‡ | ..... | ..... | 49 | 9.4 | 93 | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rain & fog | |
| Portsmouth, Hampton Roads, Va. | 29.91‡ | 7 59.7‡ | ..... | ..... | 58 | 14.4 | 88 | WSW | ..... | ..... | 2 | ..... | 5 | ..... | Calm | ..... | ..... | Smooth | ..... | Fair | |
| Powhatan, Norfolk, Va. | 29.93‡ | 760.2‡ | ..... | ..... | 57 | 13.9 | 94 | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0.1 | 3. | ..... | ..... | Clear | |
| Quinnebaug, N. 36° 10′, E. 14° 46′ | 29.93‡ | 760.2‡ | ..... | ..... | 63 | 17.2 | 62 | W | ..... | ..... | 5 | ..... | 5 | ..... | W | ..... | ..... | Mod'ate | W | Fair | |
| Ranger, Amoy, China * | 29.83‡ | 757.7‡ | ..... | ..... | 72 | 22.2 | 90 | SSE | ..... | ..... | 1 | ..... | 2? | ..... | Calm | ..... | ..... | Smooth | ..... | Raining ? | |
| Richmond, Singapore, China | 29.73‡ | 755.1‡ | ..... | ..... | 88 | 31.1 | 69 | ENE | ..... | ..... | 1–2 | ..... | 5 | ..... | ENE | 0.8 | 20. | Smooth | ENE | Fair | |
| Rio Bravo, Brownsville, Texas | 29.99 | 761.7 | 72 | 22.2 | 73 | 22.8 | 90 | SE | ..... | ..... | 1 | ..... | 5 | ..... | SE | ..... | ..... | ..... | ..... | Fair | |
| Santee, Annapolis, Md. | 29.85‡ | 758.2‡ | ..... | ..... | 63 | 17.2 | 57 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Saratoga, Horta Bay, Fayal, Azores | 30.21‡ | 767.3‡ | ..... | ..... | 64 | 17.8 | 100 | S | ..... | ..... | 3 | ..... | 10 | ..... | NNE | Light | Light | Mod'ate | S | Misty | |
| St. Louis, League Island, Pa | 29.78 | 756.4 | 67 | 19.4 | 55 | 12.8 | 87 | SW | 4 | 1.8 | ..... | ..... | 2 | ..... | N | 0 | 0 | ..... | ..... | Clear | |
| Trenton, Villafranca, France. * | 29.86‡ | 758.4‡ | ..... | ..... | 60 | 15.6 | 82 | N | ..... | ..... | 1 | ..... | 8 | ..... | NE | 0 | 0 | Smooth | ..... | Fair | |
| Tuscarora, Port Sacrificios, Mex. * | 29.86‡ | 758.4‡ | ..... | ..... | 81 | 27.2 | 70 | WSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear | |
| Vandalia, Kingston, Jamaica W.I. | 29.88‡ | 758.9‡ | ..... | ..... | 58 | 14.4 | 82 | NNW | ..... | ..... | 1 | ..... | 10 | ..... | NW | ..... | ..... | Smooth | ..... | Cloudy | |
| Wabash, Boston, Mass. | 29.86‡ | 758.4‡ | ..... | ..... | 59 | 15.0 | 88 | SE | 1 | 0.4 | ..... | ..... | 10 | ..... | ..... | 0.85 | 21.6 | ..... | ..... | Raining | |
| Wyoming, Athens, Greece. * | 29.82‡ | 757.4‡ | ..... | ..... | 67 | 19.4 | 100 | SSE | ..... | ..... | 2 | ..... | 2 | ..... | SE | ..... | ..... | Smooth | SE | Cloudy | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. †Aneroid. *The error of the barometer is not known. ‡Reduced to sea-level—corrections applied at this office. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft., or 35.1 meters, for which the constant reduction is 0.125 in., or 3.18 mm.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction from— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—12. | 0—10. | 0—10. | From— | From— | | | | | |
| **CUNARD LINE MARINE SERIES.** Furnished by the co-operation of Ch. G. Francklyn, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Samaria, Capt. T. Roberts, N. 51° 42′, W. 8° 12′ | | 30.11 | 764.8 | 57 | 13.9 | | NW | | | 1 | | | NW | | | Smooth | | Fine | M. C. Miles. |
| Note.—†Aneroid. | | | | | | | | | | | | | | | | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | L. B. Walls. |
| §S. S. City of Tokio Capt. Maury N. 30° 26′, E. 128° 09′ | | 29.93‡ | 760.2‡ | 68 | 20.0 | | NE | | | 2 | | 0 | | | 0 | Smooth | | Blue sky | Capt. R. Searle. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Whitebury |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | W. Luscombe. |
| S. S. Dakota, Capt. H. G. Morse, | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | F.W.Hart, 1st Officer. |
| S. S. Granada, Capt. Austin. | | | | | | | | | | | | | | | | | | | Capt. A. Fuller. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | R. C. Ghest, 1st Officer. |
| S. S. Zealandia, Sydney, N. S. W. | | 30.04‡ | 763.0‡ | | | | NNW | | | 2 | | | | WSW | | | | Fine | |
| Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office. §The date of the S. S. City of Tokio is uncertain, and may be in error one day. | | | | | | | | | | | | | | | | | | | |
| **WHITE STAR LINE MARINE SERIES.** Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | |
| Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |
| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, Capt. L. Meyer, N. 33° 32′, W. 180° 00′ | | 30.24‡ | 768.1‡ | 60 | 15.6 | 90 | SE | | | 4 | | 10n | | | 0 | Smooth | | Overcast | D. A. Joyce. |
| S. S. Gaelic, | | | | | | | | | | | | | | | | | | | Capt. W. H. Kidley. |
| S. S. Oceanic, Capt. J. Metcalf | | | | | | | | | | | | | | | | | | | J. G. Cameron. |
| Note.—The originals give the barometer as read off; wind-force by the scale 0 to distinction 12; no distinction between upper and lower clouds. The position given for the S. S. Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time; sea-swell is given by the scale 0 to 9. †Aneroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |
| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** Furnished by the co-operation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. T. H. Lamke. |
| S. S. Braunschweig, N. 49° 41′, W. 13° 32′ | | 30.23‡ | 767.8‡ | 59.0 | 15.0 | 88 | NW | | | 4 | | 10 | | | 8 hours | Mod'ate | N | Rainy | Capt. C. Undütsch. |
| S. S. Leipzig | | | | | | | | | | | | | | | | | | | Capt. F. Pfeiffer. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 49° 52′, W. 6° 27′ | | 30.31‡ | 769.9‡ | | | | W | | | 2 | | 5 | | W | | Smooth | W | Cloudy | Capt. G. Meyer. |
| Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig and Leipzig by the scale 0 to 4; nor distinguish between upper and lower clouds. Duration of rain-fall in hours. The S. S. Braunschweig gives sea-swell in general terms or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12. *The error of the barometer is not known. ‡Corrections for temperature instrumental error and elevation applied at this office. | | | | | | | | | | | | | | | | | | | |

## UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

| NAMES OF VESSELS. | True Course toward. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | | |
| | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | Character. | Direction From— | | |
| | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Mersey River, Eng | ..... | 30.19‡ | 766.8‡ | 53 | 11.7 | ..... | NW | ..... | ..... | 6 | ..... | 9 | ..... | NE | Mod'ate | ..... | ..... | Cloudy..... | Captain Sargent. |
| S. S. Ohio | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | W m. Shackford, Chief Officer. |
| S. S. Pennsylvania, Capt. Harris | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. H. Dodge. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; amount of cloudiness without distinguishing between upper and lower; for the Pennsylvania, the cloud-direction as toward instead of from; sea-swell in general terms, as published; rain-fall for the Indiana and Ohio in general terms. ‡Corrections for temperature, instrumental error and elevation applied at this office.

**RED STAR LINE MARINE SERIES.**

Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Randle. |
| S. S. Switzerland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jackson. |
| S. S. Vaderland | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Nichols. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

**ALLAN LINE MARINE SERIES.**

Furnished by the co-operation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Richardson. |
| S. S. Hibernian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Powell, 4th Officer. |
| S. S. Peruvian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation. †Anéroid. *The error of the barometer is not known. ‡Corrections for temperature, instrumental error and elevation applied at this office.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the co-operation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, N. 38° 49.' W. 73 36'..... | ..... | 29.95‡ | 760.7‡ | 49 | 9.4 | 93 | NNW | 9 | 4.0 | .. | ..... | Fog | ..... | ..... | 0 | Swell | S | Dense fog.... | Capt. James Jorgensen. |
| Brigantine "George of Halifax"..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Willard N. Pratt. |
| Schooner Harry and Fred, N. 26° 27',? W. 68° 15'? ... | ..... | 29.78‡ | 756.4‡ | ..... | ..... | ..... | SE | 10 | 4.5 | ..... | ..... | 4 | ..... | SE | 0.5 in. or 13 mm. | Rough | E | Drizzling.... | Capt. George Gardner. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4, without distinguishing between upper and lower. †Anéroid. ‡Corrections for temperature, instrumental error and elevation applied at this office.

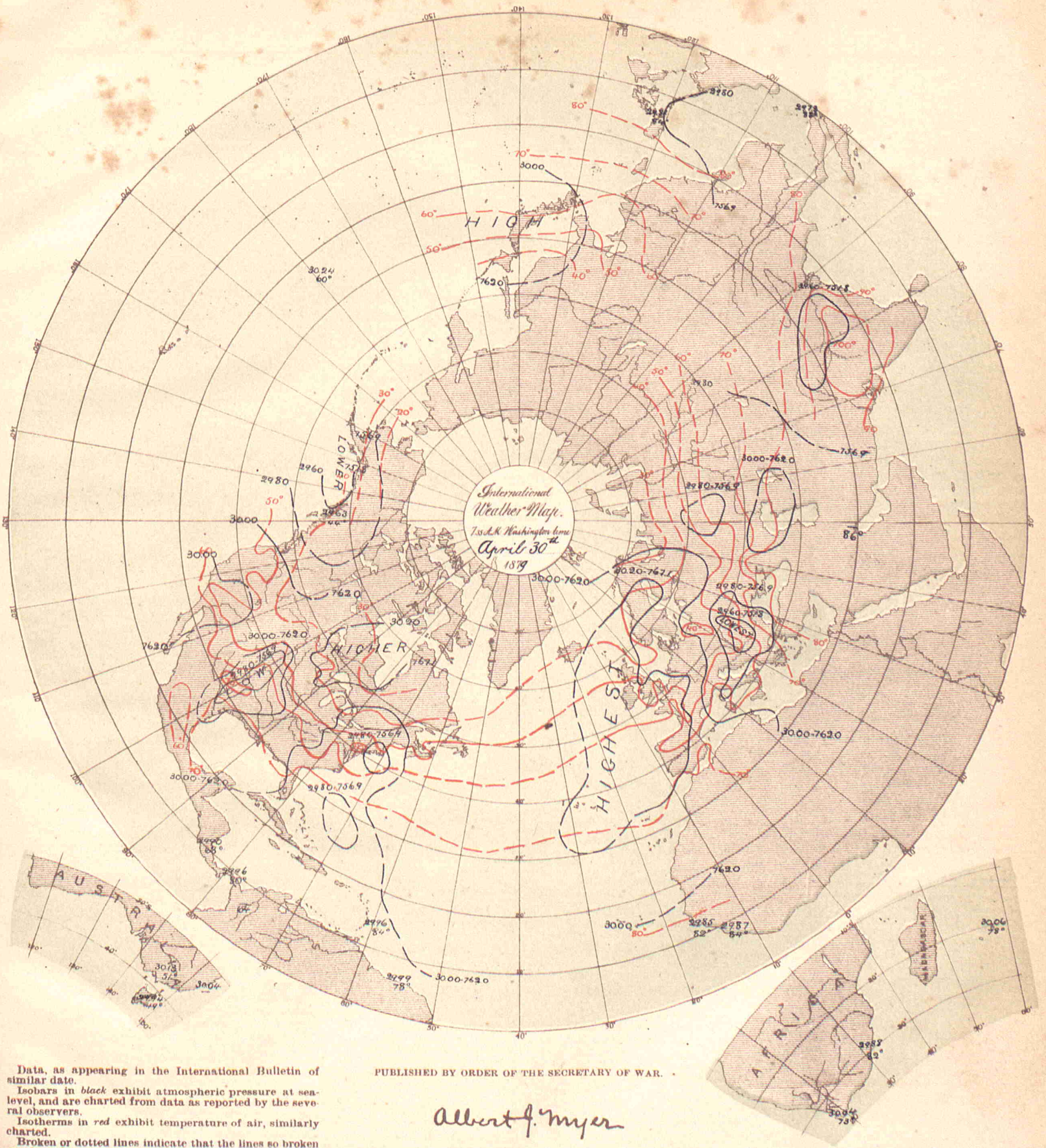
Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively by the letters c, k, s, n, d, f, p, hz., fg. and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.*




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

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